HydraRester™

Sizing & Placement Guideline

The following should be used as a guide only. Always consult local plumbing codes for specific requirements before installation.

For water hammer control in commercial plumbing applications, such as water closets, urinals and lavs in public restrooms, use the following sizing and placement guidelines based on fixture units.

DETERMINING ARRESTER SIZE BY FIXTURE UNITS

The National Plumbing Code offers this definition of fixture unit: "A fixture-unit is a quantity in terms of which the load producing effects on the plumbing system of different kinds of plumbing fixtures are expressed on some arbitrarily chosen scale." The fixture unit values shown in Table 1 below represent the standard ratings used by engineers to size water distribution systems as well as water hammer arresters. "Public" fixtures, as referred to in Table 1 below, are fixtures found in public rest rooms, office buildings and other places where each fixture is open and accessible for use at all times.

MULTIPLE FIXTURE BRANCH LINES

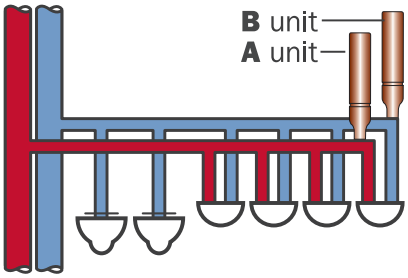
On many types of applications, a single arrester must serve multiple fixtures. In these cases, the total fixture units should be determined for all fixtures served by the branch line where the arrester is to be placed. Once the fixture units for the branch line have been totaled, choose the appropriate arrester by matching fixture units in the table (below) to the arrester size with the corresponding fixture unit capacity. If the total number of fixture units has a fraction, it should be rounded to the next largest whole number. In addition, if the flow pressure at the fixture exceeds 65 psig, the next largest size water hammer arrester should be used.

TABLE 1

FIXTURE	TYPE OF SUPPLY CONTROL	FIXTURE UNITS					
		PUBLIC			PRIVATE		
		TOTAL	C.W.	H.W.	TOTAL	C.W.	H.W.
Water Closet 1.66 PF	Flush Valve	8	8	-	5	5	-
Water Closet 1.66 PF	Flush Tank	5	5	-	2.5	2.5	-
Pedestal Urinal 1.06 PF	Flush Valve	4	4	-	-	-	-
Stall or Wall Urinal	Flush Valve	4	4	-	-	-	-
Stall or Wall Urinal	Flush Tank	2	2	-	-	-	-
Lavatory	Faucet	2	1½	1½	1	1	1
Bathtub	Faucet	4	2	3	2	1½	1½
Shower Head	Mixing Valve	4	2	3	2	1	2
Bathroom Group	Flush Valve Closet	-	-		8	8	3
Bathroom Group	Flush Valve Closet	-	-		6	6	3
Separate Shower	Mixing Valve	-	-		2	1	2
Service Sink	Faucet	3	3	3	-	-	-
Laundry Tubs (1-3)	Faucet	-	-	-	3	3	3
Combination Fixture	Faucet	-	-	-	3	3	3
Clothes Washer	Solenoid Valves	-	-	-	4	3	3
Dishwasher	Solenoid Valve	-	-	-	1.5	-	1.5
Ice Maker	Solenoid Valve	-	-	-	1	1	-

TABLE 2

ARRESTER SIZE	AA	A	B	C	D	E	F
FIXTURE UNITS	1-4	5-11	12-32	33-60	61-113	114-154	155-300



ARRESTER PLACEMENT ON MULTI-FIXTURE BRANCH LINES

Once the correct size arrester has been determined, the final concern is placement of the arrester within the system. Arrester placement depends on the length of the branch line on which the arrester is to be installed, which can be divided into two cases which are described below:

BRANCH LINES OF 20 FEET OR LESS (See Figure 1)

Place arrester at the end of the branch line within 6 feet of the last fixture served, as illustrated on page 15.

BRANCH LINES OVER 20 FEET (See Figure 2)

Calculate fixture units for each 20-foot section separately and place an arrester at the end of each 20-foot section (within 6 feet of the last fixture served in that section) as illustrated in Figure 2 on page 15.

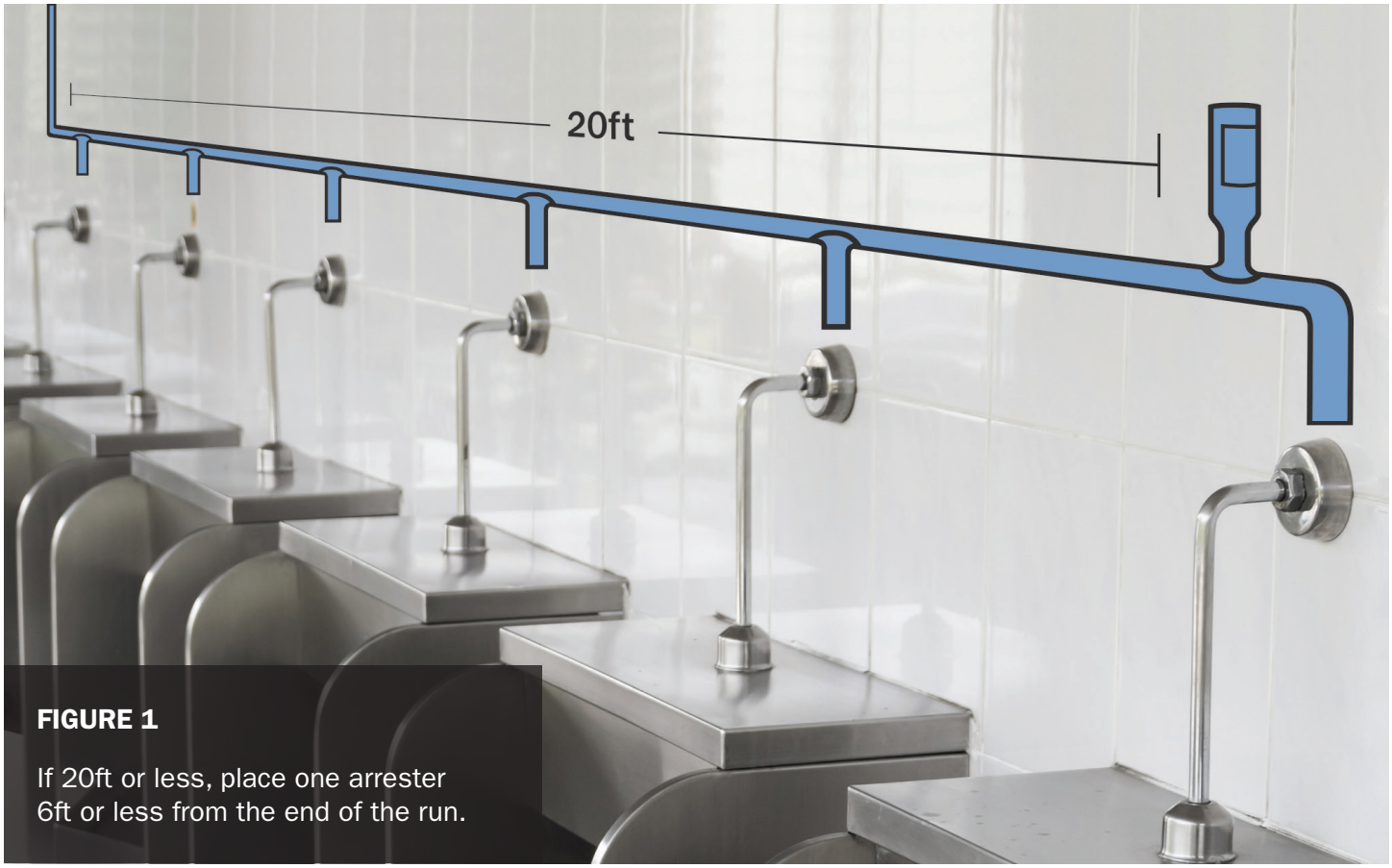


FIGURE 1

If 20ft or less, place one arrester 6ft or less from the end of the run.

FIGURE 2

If more than 20ft, place arrester at the end of each 20-foot section, within 6ft of the end of that section.