IMPORTANT INFORMATION

— THE INFORMATION SHOWN ON THIS SHEET IS PROVIDED AS A CONVENIENCE ONLY—ACTUAL VICTAULIC HANDBOOK SHOULD ALWAYS BE CONSULTED TO ENSURE SAFE INSTALLATION.

— VICTAULIC grooved pipe couplings are designed for use only with pipe grooved to meet VICTAULIC groove specifications and VICTAULIC grooved end fittings, valves and related grooved end components only. They are NOT intended for use with plain end pipe and/or fittings.

— VICTAULIC plain end couplings are designed for use only with plain end or beveled end steel pipe, and VICTAULIC plain end fittings. VICTAULIC plain end couplings MUST NOT be used with grooved end or threaded end pipe or fittings. (Normally only used inside the power unit).

— Pipe must be prepared (if not supplied with prepared ends) to the specifications shown in Table 2. of this sheet. Proper performance of the piping system is dependent on exact adherence to the table dimensions.

☆ FOR OIL HYDRAULIC APPLICATIONS USE ONLY VICTAULIC "STYLE 77" COUPLINGS AND "GRADE T" GASKETS ! Gaskets other than Grade T may, over time, deteriorate due to contact with the hydraulic oil and no longer provide a leak-proof seal.

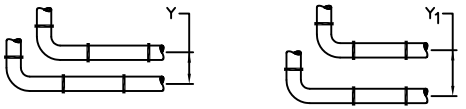
— Gaskets for VICTAULIC products must always be lubricated for proper assembly. Thoroughly lubricate the gasket and the pipe ends with the hydraulic system oil. Thorough lubrication of the gasket exterior, including the lips and pipe ends/housing interiors is essential to prevent gasket pinching. Lubrication also assists proper gasket seating and alignment during installation.

INSTALLATION CONSIDERATIONS

— Since the grooved piping method incorporates the use of an externally mounted housing, consideration must be given to the external dimensions beyond the pipe O.D. where the system is space confined in some manner.

— To provide the best installation, consideration must be given to space requirements for insulation and/or maintenance and the effect these have on minimum pipe spacing. Since VICTAULIC grooved pipe couplings are an externally mounted housing with bolt pads, this minimum spacing may be greater than normal to allow access for the bolts and to prevent interference between pipe and adjacent couplings.

— Minimum pipe centerline spacing (see Fig. 1.) should not be less than that specified in Table 1.



STAGGERED COUPLINGS — ALIGNED COUPLINGS

Fig. 1.

TABLE 1.
MINIMUM PIPE SPACING

NOMINAL PIPE SIZE	DIMENSION Y	DIMENSION Y1	NOMINAL PIPE SIZE	DIMENSION Y	DIMENSION Y1
1 "	3 7/8 "	4 11/16 "	2 1/2 "	6 1/4 "	7 1/2 "
1 1/4 "	4 5/8 "	5 9/16 "	3 "	7 "	8 7/16 "
1 1/2 "	5 "	6 "	3 1/2 "	8 "	9 5/8 "
2 "	5 5/8 "	6 3/4 "	4 "	8 1/2 "	10 1/4 "

INSTALLATION CONSIDERATIONS CONTINUED

— When installing grooved piping systems in confined areas such as a pipe shaft, tunnel, narrow trench, or when coupling riser pipe and dropping it through riser holes, consideration must be given for the external clearance of the coupler housing. This clearance must be slightly greater than the maximum envelop dimension Y shown in Figure 2. See Table 1. for values of dimension Y. The necessary clearance will vary depending on installation procedures, proximity of other pipes and other factors.

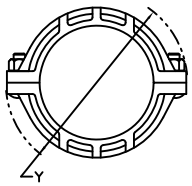


Fig. 2.

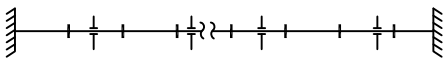
APPLICATIONS

The following suggestions are provided to call attention to the mechanical advantages of the grooved piping method; how they can be used to the piping designer's benefit. These are presented to stimulate thought and should not be considered as recommendations for a specific piping system.

The VICTAULIC grooved piping method, when used in a piping system, should always be utilized in designs consistent with good piping practice. The design considerations for installing grooved piping systems covered in the VICTAULIC Handbook should always take precedence. Additionally, specific "Support, Anchorage and Guidance" considerations in the VICTAULIC Handbook should be recognized.

THERMAL EXPANSION AND/OR CONTRACTION

Movement in piping systems due to thermal changes can be accomodated with the grooved piping method. Sufficient joints must be available to accomodate anticipated movement, including movement tolerance. If anticipated movement will be greater than provided by the total number of joints in the system, additional expansion in the form of a VICTAULIC expansion joint must be employed.

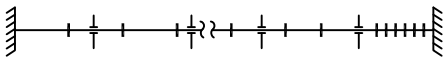


EXAMPLE 1

EXAMPLE 1: 400 ft long, straight piping system; 6 inch; 20 ft random lengths; installed at 60 degrees F (also lowest operating temperature); maximum operating temperature of 180 degrees F. Standard expansion tables show this system will give 3.7 inches total anticipated movement.

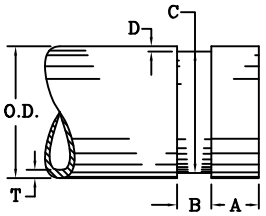
20	Joints between anchor points
x 1/4 "	Available movement per coupling
5 "	Total Available movement
−25%	Movement Tolerance (SEE NOTE 6)
3.75 "	Adjusted available movement

EXAMPLE 2: Same as above, installed at 20 degrees F and operating at 200 degrees F. Anticipated movement equals 5.5 inches.



EXAMPLE 2

A standard VICTAULIC 6 inch Style 150 Expansion joint will supply an additional 3 inches of movement required. Refer to VICTAULIC product literature or the VICTAULIC Piping Design Manual for expansion joint details.



NOTES

1* The actual outside diameter of grooved pipe shall not vary more than the tolerance listed. Maximum allowable tolerance from square cut ends is .030 " for 1 " thru 3 1/2 " and .045 " for 4 " sizes measuerd from true square line.

2* The pipe shall be free from indentations, projections, or roll marks from the end of the pipe to the groove.

3* The groove must be a uniform depth for the entire pipe circumference. The "C" diameter must be maintained.

4* FOR TRIAL USE ONLY. "C" requirement must be maintained.

5* This is the minimum starting wall thickness which may be grooved.

6* Figures noted are based on standard steel pipe and standard CUT groove. Values shown are MAXIMUMS. In actual practice reduce these values by 50% to allow for grooving tolerances. (Design Tolerance).

7* For standard roll grooved pipe use one-half of the values per note 6.

GROOVE SPECIFICATIONS (STYLE #77) — ALL DIMENSIONS IN INCHES

NOMINAL PIPE SIZE	O.D. PIPE OUTSIDE DIAMETER (1*) SPECIFIED	TOLERANCE +	TOLERANCE −	A GASKET SEAT +.031 −.031 (2*)	B GROOVE WIDTH +.031 −.031	C GROOVE DIAMETER (3*) SPECIFIED	C TOLERANCE +.000	D TRIAL GROOVE DEPTH (4*)	T MIN ALLOW. WALL THKNS. (5*)
1	1.315	+.013	−.013	.625	.312	1.190	−.015	.062	.133
1 1/4	1.660	+.016	−.016	.625	.312	1.535	−.015	.062	.140
1 1/2	1.900	+.019	−.019	.625	.312	1.775	−.015	.062	.145
2	2.375	+.024	−.024	.625	.312	2.250	−.015	.062	.154
2 1/2	2.875	+.029	−.029	.625	.312	2.720	−.018	.078	.187
3	3.500	+.035	−.031	.625	.312	3.344	−.018	.078	.188
3 1/2	4.000	+.040	−.031	.625	.312	3.834	−.020	.083	.188
4	4.500	+.045	−.031	.625	.375	4.334	−.020	.083	.203

PERFORMANCE DATA (STYLE #77)

NOMINAL PIPE SIZE	PIPE OD	MAX. WK. PRESSURE PSI (6*)	MAX END LOAD LBS (6*)	ALLOW. PIPE END SEP. INCHES (6*) (7*)	DEFLECTION FROM CENTERLINE PER COUPLING DEGREES (6*) (7*)	DEFLECTION FROM CENTERLINE PIPE IN/FOOT (6*) (7*)
1	1.315	1000	1360	0−1/8	5°−26'	1.14
1 1/4	1.660	1000	2160	0−1/8	4°−19'	0.90
1 1/2	1.900	1000	2835	0−1/8	3°−46'	0.79
2	2.375	1000	4430	0−1/8	3°−1'	0.63
2 1/2	2.875	1000	6490	0−1/8	2°−29'	0.52
3	3.500	1000	9620	0−1/8	2°−3'	0.43
3 1/2	4.000	1000	12565	0−1/8	1°−48'	0.38
4	4.500	1000	15900	0−1/4	3°−11'	0.66

APPLICATIONS Continued

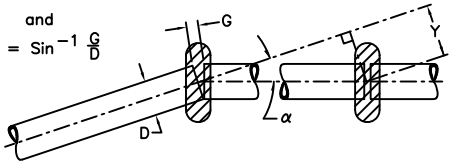
DEFLECTION

The angular deflection available at a VICTAULIC grooved pipe joint is useful in simplifying and speeding installation. Note: Joints which are fully deflected can no longer provide linear movement. Partially deflected joints will provide some portion of linear movement. Pressure thrusts will tend to straighten deflected pipe.

$Y = L \sin \alpha$

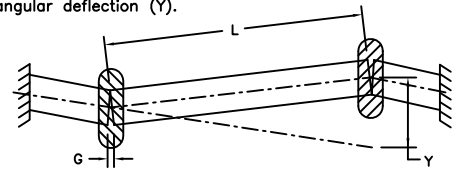
and

$\alpha = \sin^{-1} \frac{G}{D}$



MISALIGNMENT

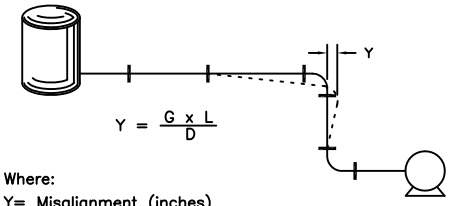
Pipe misalignment can be accomodated with a VICTAULIC grooved piping system. Note that at least two couplings must be used for the combined lateral displacement and angular deflection (Y).



APPLICATIONS Continued

MISALIGNMENT continued

The movement available can be calculated from the coupling performance data. For lengths less than 20 ft use the direct proportion of the figure from available VICTAULIC product literature or use the formula below:



Where:

Y= Misalignment (inches)
G= MAXIMUM allowable pipe end movement (in). As shown under Performance Data. Published values to be reduced by Design Tolerance
D= Pipe outside diameter (inches)
L= Pipe length (inches)
α= MAXIMUM deflection (degrees) from centerline As shown under Performance Data. Published values to be reduced by Design Tolerance

CANTON ELEVATOR

GROOVED OIL LINE INFORMATION

READ THIS INFORMATION CAREFULLY BEFORE INSTALLING EQUIPMENT

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