

COMPUTING MINIMUM HOSE LENGTHS

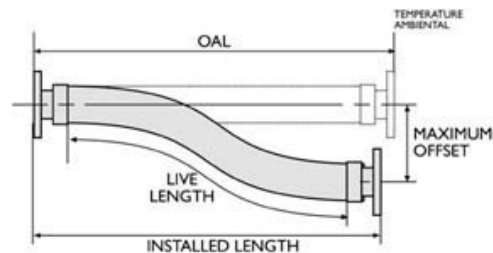
COMPUTING MINIMUM LENGTHS FOR HOSE ASSEMBLIES

For optimum service life, each hose assembly must be designed to the specific application.

1. Select proper hose, from product pages taking into consideration the size, pressure, and temperature requirement.
2. To compute minimum live length requirements, follow the instructions below:

- A. Locate the minimum bend radius for intermittent flexure by referring to that column on the product specification page for that hose.
- B. Locate this bend radii number in the left column of the table below. (If the radii falls between numbers on the table, use next highest number).
- C. Locate the required offset for your applications in the figures at the top of the table.
- D. The minimum live length required is the intersecting box of the 2 columns.
- E. To determine static bend minimum lengths, simply substitute static bend radii data in step B and continue in the same manner.

- L.L. = HOSE LIVE LENGTH (INCHES)**
- I.L.L. = INSTALLED HOSE LIVE LENGTH (INCHES)**
- R = CENTERLINE BEND RADIUS (INCHES)**
- Y = LATERAL OFFSET (INCHES)**
- A = BEND ANGLE (DEGREES)**
- T = TRAVERSE (INCHES)**
- F = HOSE NOMINAL DIAMETER (INCHES)**



NOTES:

1. For intermittent offset, movement must not exceed 25% R value.
2. F is a safety factor to eliminate stress on welds caused by movement.

NORMAL VIBRATION

MINIMUM LIVE HOSE LENGTH FOR NORMAL VIBRATION

1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	8"
5"	5 1/2"	6"	6 1/2"	7"	8 1/2"	9"	9 1/4"	9 1/2"	10 1/2"	11"	12"	13"	14 1/2"	16 3/4"

NOTES:

1. If vibration is severe, add 20% to minimum live length.
2. Add braid sleeves length: 1/4" to 3/4" dia add 1", 1" to 2" dia add 1 1/2" and 2 1/2" to 12" dia add 2".
3. Add fittings length to obtain overall length.
4. If vibration is extremely severe, consult our engineering department.

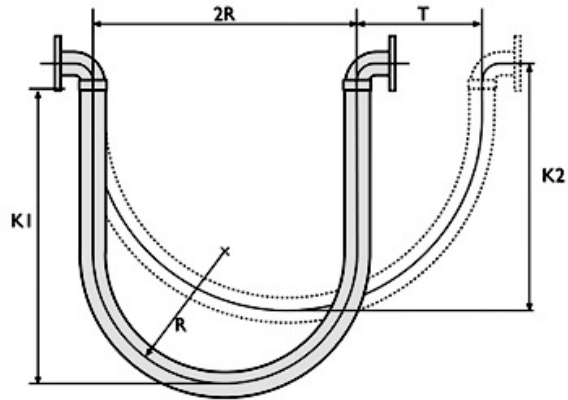
OFFSET MOTION

OFFSET MOTION (max. dist. from center line)	MINIMUM LIVE LENGTH REQUIRED FOR OFFSET MOTION																	
	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	5"	6"	8"	10"				
CENTER LINE BEND RADIUS (in.)	2	4	6	8	10	12	14	16	18	20	25	30	35	40	45	50	60	70
	1 1/4	1 3/4	2 1/4	2 1/2	3 1/4	3 3/4	4 1/2	5 1/4	6 3/4	8	9 1/4	10 1/2	12 3/4	15				
	1 3/4	2 1/2	3	3 1/2	4 1/2	5	6 1/4	7 1/4	9	11 3/4	12	13 1/2	16	18 1/2				
	2 1/4	3 1/4	3 3/4	4 1/4	5 1/4	6 1/4	7 1/2	8 3/4	10 3/4	12 3/4	14 1/4	16	19	21 1/2				
	2 1/2	3 1/2	4 1/4	5	6	7	8 3/4	10	12 1/2	14 1/2	16 1/4	18	21 1/4	24 1/4				
	2 3/4	4	4 3/4	5 1/2	6 3/4	8	9 3/4	11 1/4	13 3/4	16	18	20	23 1/2	26 1/2				
	3	4 1/4	5 1/4	6	7 1/2	8 1/2	10 1/2	12 1/4	15	17 1/2	19 1/2	21 1/2	25 1/2	28 3/4				
	3 1/4	4 3/4	5 3/4	6 1/2	8	9 1/4	11 1/4	13 1/4	16 1/4	18 3/4	21	23 1/2	27 1/4	30 3/4				
	3 1/2	5	6	7	8 1/2	10	12 1/4	14	17 1/4	20	22 1/2	25	29	32 3/4				
	3 3/4	5 1/4	6 1/2	7 1/2	9	10 1/2	13	14 3/4	18 1/4	21 1/4	24	26	30 1/2	34				
	4	5 1/2	6 3/4	7 3/4	9 1/2	11	13 1/2	15 3/4	19 1/4	22 1/2	25	27 1/2	32 1/4	36 1/4				
	4 1/2	6 1/4	7 1/2	8 3/4	10 3/4	12 1/4	15	17 1/2	21 1/2	25	28	30 1/2	35 3/4	40				
	4 3/4	6 3/4	8 1/4	9 1/2	11 3/4	13 1/2	16 1/2	19 1/2	23 1/2	27 1/4	30 1/2	33 1/2	40	43 3/4				
	5 1/4	7 1/4	9	10 1/4	12 1/2	14 1/4	17 3/4	20 1/4	26 1/4	29 1/2	32 3/4	36	42	47				
	5 1/2	8	9 1/2	11	13 1/2	15 1/2	19	22 1/2	27	31 1/4	35	38 1/2	44 3/4	50				
	6	8 1/4	10	11 3/4	14 1/4	16 1/2	20 1/4	23 1/2	28 1/2	33	37	41	47 1/2	53				
	6 1/4	8 3/4	10 3/4	12 1/4	15	17 1/2	21 1/2	24 1/2	30	35	39	43	50	56				
	6 3/4	9 1/2	11 3/4	13 1/2	16 1/2	19	23 1/4	27	33	38	43	47	54 1/2	61				
	7 1/4	10 1/4	12 3/4	14 3/4	17 3/4	20 1/2	25	29	35 1/2	41 1/2	46	51	58 3/4	65 3/4				

APPLICABLE FOR STATIC BEND ONLY

HORIZONTAL TRAVEL

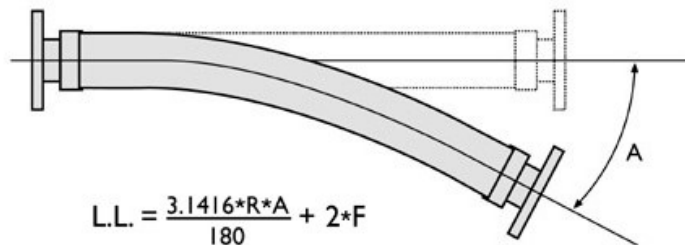
HORIZONTAL TRAVEL LOOP INSTALLATION



$$\begin{aligned} \text{L.L.} &= 4 \cdot R + 1.57T \\ K1 &= 1.43 \cdot R + 0.785T \\ K2 &= 1.43 \cdot R + T/2 \end{aligned}$$

ANGULAR

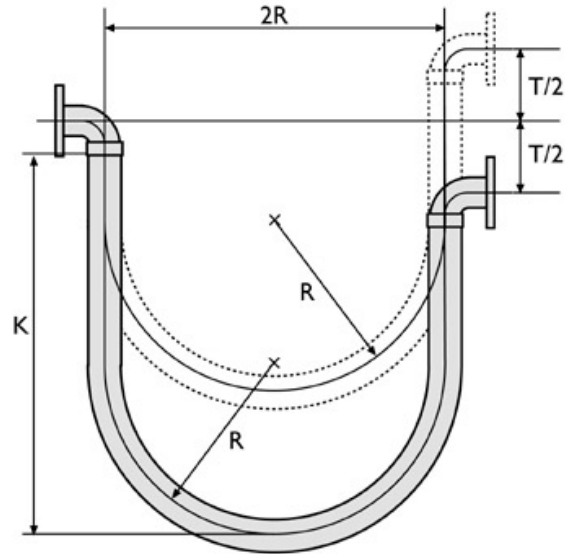
ANGULAR SPECIFICATIONS



$$\text{L.L.} = \frac{3.1416 \cdot R \cdot A}{180} + 2 \cdot F$$

VERTICAL TRAVEL

VERTICAL TRAVEL LOOP INSTALLATION



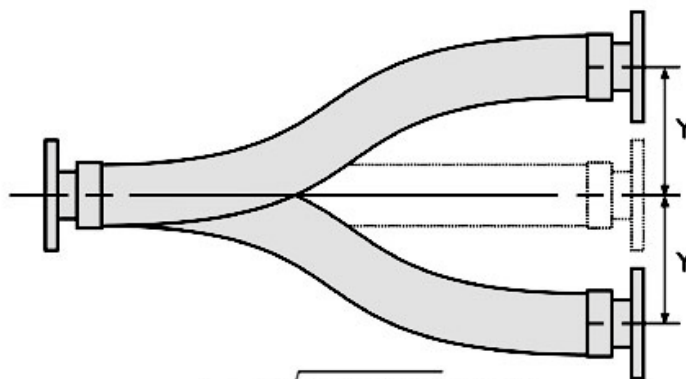
$$L.L. = 4 \cdot R + T/2$$

$$K = 1.43 \cdot R + T/2$$

Note: Always use pipe elbows for this type of installation.

LATERAL

LATERAL SPECIFICATIONS



$$L.L. = \sqrt{(6 \cdot Y \cdot R) + Y^2} + (2 \cdot F)$$

$$I.L.L. = 0.95 \cdot L.L.$$

Note: Where motion "Y" occurs both sides of centerline, hose live length should be based on total travel or 2 times "Y"