

## FPN Flexible Pipe Nipples

Hauck Flexible Pipe Nipples offer many advantages when connecting air or gas lines to burners on furnaces. They provide strain-free connections thus preventing burners from being forced out of alignment by mechanical pipe stresses caused at the time of installation, or from thermal expansion of the piping during the operation of the furnace. Their flexibility protects burner parts and burner control linkages from binding or strain caused by rigid piping. In addition, flexible pipe nipples isolate the burner from vibrations transmitted through the burner piping. This eliminates the disruption of burner adjustments, safety controls and valve settings.

### CONSTRUCTION

Flexible pipe nipples of ½" to 6" size are available in four different arrangements as shown in figure 1; 100 – series – male NPT connections, 200 series – male NPT – union connections, 300 series – male NPT – flanged connection, and 400 series – flanged connections. The bellows are constructed of corrugated, stainless steel with mild steel nipples brazed on the ends. The 300 & 400 series use ANSI 125 lb. flanges. Construction options include an all stainless steel version and special lengths; consult factory. FPN's can be used in air and gas lines and are rated for 5 psig working pressure.

### FLEXIBLE AIR HOSE

Larger sized flexible air hoses for use in air lines only are available in the 400 series flanged connection arrangement. ANSI 125 lb. Bolt pattern flanges in 8" to 14" sizes are constructed of stainless steel, annular corrugated bellows with mild steel flanges welded on the ends. RPM flanges in 6" to 18" sizes are constructed of mild steel and helical corrugated bellows with mild steel flanges. A welded stud variation is available, where practical, to simplify installation. Special lengths can be supplied; consult factory.

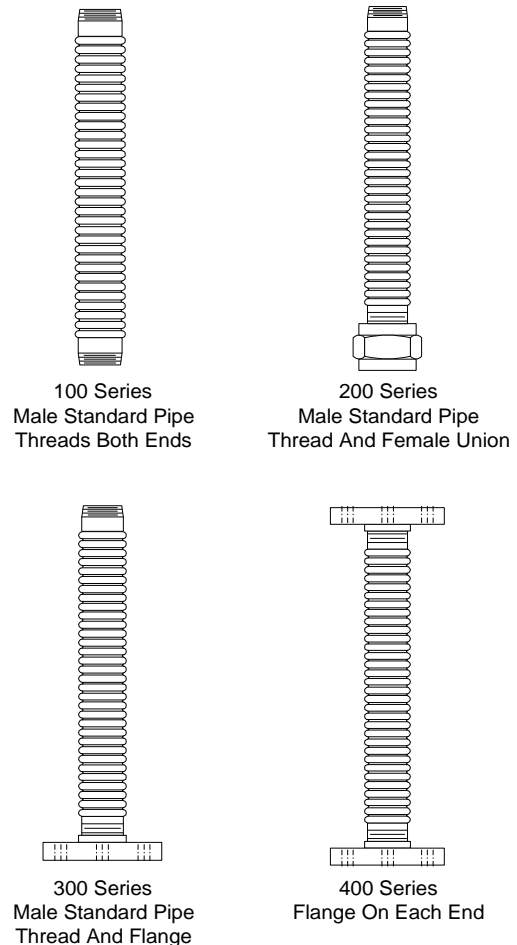


Figure 1

### FEATURES

- Remove pipe strain from burners.
- Remove pipe strain from control linkages.
- Remove pipe strain from accessory equipment.
- Speed up pipefitting jobs.
- Eliminates burners from being vibrated out of adjustment.



# TECHNICAL INFORMATION

Flexible Pipe Nipple Dimensions Appear On Sheet FPN-3

## MINIMUM OFFSET LENGTHS – FLEXIBLE PIPE NIPPLES

| NPT PIPE SIZE | OFFSET IN INCHES |     |     |     |     |     |    |       |    |
|---------------|------------------|-----|-----|-----|-----|-----|----|-------|----|
|               | 1/16             | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1  | 1 1/2 | 2  |
| 1/2           | 2                | 3   | 4   | 5   | 5   | 6   | 7  | 8     | 9  |
| 3/4           | 3                | 3   | 5   | 6   | 6   | 8   | 9  | 10    | 12 |
| 1             | 3                | 4   | 5   | 6   | 7   | 8   | 9  | 11    | 13 |
| 1 1/4         | 3                | 4   | 5   | 6   | 7   | 9   | 10 | 12    | 13 |
| 1 1/2         | 3                | 4   | 6   | 7   | 8   | 9   | 10 | 12    | 14 |
| 2             | 3                | 4   | 6   | 7   | 8   | 10  | 11 | 13    | 15 |
| 2 1/2         | 4                | 5   | 7   | 8   | 10  | 12  | 13 | 16    | 18 |
| 3             | 4                | 6   | 8   | 10  | 12  | 14  | 16 | 20    | 23 |
| 4             | 5                | 7   | 10  | 12  | 13  | 16  | 19 | 23    | 26 |
| 6**           | 4                | 6   | 8   | 10  | 12  | 14  | 16 | 20    | 23 |

\* Minimum Length, in whole inches, required for the offset "h" at each NPT size.  
 \*\* Helical corrugation, all others annular corrugation.

Table 1

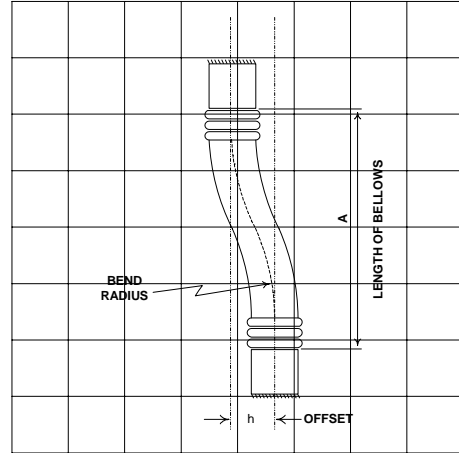
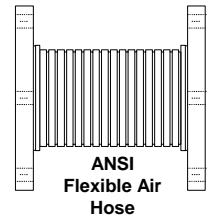


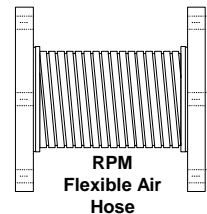
Figure 2

## FLEXIBLE AIR HOSE DIMENSIONS

| * A N S I | PIPE SIZE | MODEL NO. | BELLOWS LENGTH "A" | OVERALL LENGTH "C" | FLANGE THICKNESS "E" | FLANGE DIA. "F" | BOLT CIRCLE "G" | NO. OF BOLTS "H" | HOLE DIA. "J" | BOLT SIZE "K" |
|-----------|-----------|-----------|--------------------|--------------------|----------------------|-----------------|-----------------|------------------|---------------|---------------|
|           | 8         | 480       | 24                 | 25                 | 1/2                  | 13 1/2          | 11 3/4          | 8                | 7/8           | 3/4-10        |
|           | 10        | 4100      | 24                 | 25                 | 1/2                  | 16              | 14 1/4          | 12               | 1             | 7/8-9         |
|           | 12        | 4120      | 24                 | 25                 | 1/2                  | 19              | 17              | 12               | 1             | 7/8-9         |
|           | 14        | 4140      | 24                 | 25                 | 1/2                  | 21              | 18 3/4          | 12               | 1 1/8         | 1-8           |



| ** R P M | PIPE SIZE | MODEL NO. | BELLOWS LENGTH "A" | OVERALL LENGTH "C" | FLANGE THICKNESS "E" | FLANGE DIA. "F" | BOLT CIRCLE "G" | NO. OF BOLTS "H" | HOLE DIA. "J" | BOLT SIZE "K" |
|----------|-----------|-----------|--------------------|--------------------|----------------------|-----------------|-----------------|------------------|---------------|---------------|
|          | 6         | 460       | 11                 | 12                 | 1/2                  | 9               | 7 7/8           | 8                | 19/32         | 1/2-13        |
|          | 8         | 480       | 12                 | 13                 | 1/2                  | 11              | 10              | 8                | 19/32         | 1/2-13        |
|          | 10        | 4100      | 14                 | 15                 | 1/2                  | 14              | 12 1/4          | 12               | 3/4           | 5/8-11        |
|          | 12        | 4120      | 14                 | 15                 | 1/2                  | 16              | 14 1/4          | 12               | 11/16         | 9/16-12       |
|          | 14        | 4140      | 17                 | 18                 | 1/2                  | 18              | 16 1/4          | 12               | 11/16         | 9/16-12       |
|          | 18        | 4180      | 23                 | 24                 | 1/2                  | 23 1/4          | 21 1/4          | 16               | 3/4           | 5/8-11        |



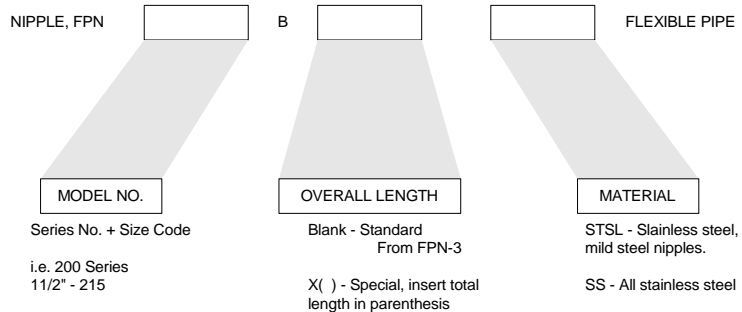
\* Stainless steel, annular corrugated bellows used in ANSI bolt pattern flexible air hose.  
 \*\* Mild steel, helical corrugated bellows used in RPM flexible air hose.

Table 2

Figure 3

## ORDERING INFORMATION

For standard nipples, see FPN-3. For other sizes, select the required NPT size, calculate the overall length required, in whole inches including the connections, and complete the ordering information described to the right.

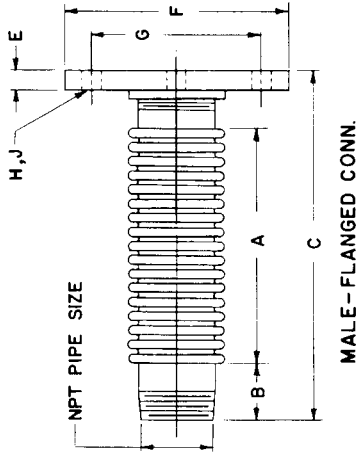


Example : Standard 100 Series, 1" NPT  
 : Special, 100 Series, 1" NPT, 20" Long

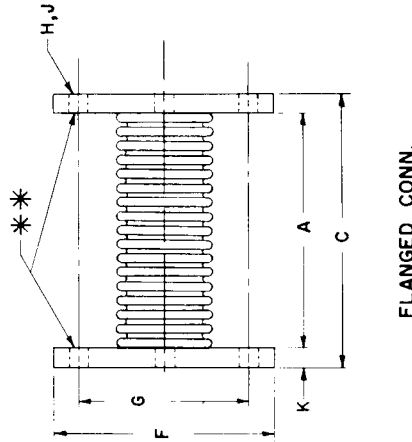
-- Nipple, FPN 110B Flexible Pipe  
 -- Nipple, FPN 110BX(20) Flexible Pipe



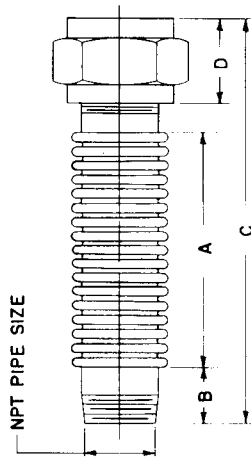
FLEXIBLE PIPE NIPPLES



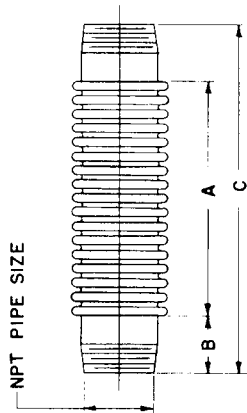
MALE-FLANGED CONN.



FLANGED CONN.



MALE-UNION CONN.



MALE CONN.

| NPT PIPE SIZE | BELLWS NIPPLE LENGTH |       | OVERALL |            | UNION LENGTH | FLANGE |      |             | NO. OF BOLTS | BOLT SIZE | FLANGE THK |
|---------------|----------------------|-------|---------|------------|--------------|--------|------|-------------|--------------|-----------|------------|
|               | A*                   | B     | MALE    | MALE-UNION |              | TKK    | DIA. | BOLT CIRCLE |              |           |            |
| 1/2           | 3 1/2                | 1 1/2 | 6 1/2   | 7 7/8      | 1 3/16       | E      | F    | G           | H            | J         | K          |
| 3/4           | 4 1/4                | 1 1/2 | 7 1/4   | 8 3/4      | 2            | E      | F    | G           | H            | J         | K          |
| 1             | 4 3/8                | 1 1/2 | 7 3/8   | 9 3/16     | 2 3/16       | E      | F    | G           | H            | J         | K          |
| 1 1/4         | 4 3/4                | 2     | 8 3/4   | 10 3/8     | 2 1/2        | E      | F    | G           | H            | J         | K          |
| 1 1/2         | 5 1/4                | 2     | 9 1/4   | 11 1/4     | 2 5/8        | E      | F    | G           | H            | J         | K          |
| 2             | 5 1/2                | 2 1/2 | 10 1/2  | 12 3/16    | 3 1/16       | E      | F    | G           | H            | J         | K          |
| 2 1/2         | 6 1/2                | 2 1/2 | 11 1/2  | 14 1/8     | 3 3/16       | E      | F    | G           | H            | J         | K          |
| 3             | 8                    | 2 1/2 | 13      | 15 7/8     | 3 7/8        | E      | F    | G           | H            | J         | K          |
| 4             | 9                    | 3     | 15      | 19 1/8     | 5 1/4        | E      | F    | G           | H            | J         | K          |
| 5             | 12                   | 3     | 18      | 18 3/16    | 5 1/2        | E      | F    | G           | H            | J         | K          |
| 6             | 14                   | 3     | 20      | 20 1/4     | 5 1/2        | E      | F    | G           | H            | J         | K          |

GX3352  
(NOT TO SCALE)

\* BELLWS LENGTH BASED ON 1/4" LATERAL DEFLECTION

\* \* HOLES ON FLANGED CONN. MUST BE IN LINE.