

Effect of Nozzle Wear on Air Consumption

| Nozzle Size. | Orifice size | | Air Flow in cfm | Increase in Air Consumption |
|--------------|--------------|--------|-----------------|-----------------------------|
| | inches | metric | | |
| 4 | 1/4 | 6.5mm | 81 cfm | |
| 5 | 5/16 | 8.0mm | 137 cfm | 69% more than No. 4 |
| 6 | 3/8 | 9.5mm | 196 cfm | 43% more than No. 5 |
| 7 | 7/16 | 11.0mm | 254 cfm | 29% more than No. 6 |
| 8 | 1/2 | 12.5mm | 338 cfm | 33% more than No. 7 |

Information shown is based upon air consumption at 100 psi (7 bar/700kPa)

Minimum Compressor Air Line Sizes

| Nozzle No. | Nozzle Orifice Size | Minimum Air Line ID |
|------------|---------------------|---------------------|
| No. 3 | 3/16" (5.0mm) | 1" (25.0mm) |
| No. 4 | 1/4" (6.5mm) | 1" (25.0mm) |
| No. 5 | 5/16" (8.0mm) | 1-1/4" (32.0mm) |
| No. 6 | 3/8" (9.5mm) | 1-1/2" (38.0mm) |
| No. 7 | 7/16" (11.0mm) | 2" (50.0mm) |
| No. 8 | 1/2" (12.5mm) | 2" (50.0mm) |
| No. 10 | 5/8" (16.0mm) | 2-1/2" (64.0mm) |
| No. 12 | 3/4" (19.0mm) | 3" (76.0mm) |

Minimum Connector ID by Nozzle Orifice Size

| Nozzle Orifice Size | Minimum Connector ID |
|---------------------|----------------------|
| 3 3/16" (5mm) | 3/4" (19mm) |
| 4 1/4" (6.5mm) | 1" (25mm) |
| 5 5/16" (8mm) | 1-1/4" (32mm) |
| 6 3/8" (9.5mm) | 1-1/2" (38mm) |
| 7 7/16" (11mm) | 2" (50mm) |
| 8 1/2" (12.5mm) | 2" (50mm) |
| 10 5/8" (16mm) | 2-1/2" (64mm) |
| 12 3/4" (19mm) | 3" (76mm) |

Approximate Pressure Loss Caused by Commonly Used Fittings

based on 100 psi (7 bar) in 1" (25mm) pipe

| Fitting | Pressure Loss |
|-------------------|----------------------------|
| 90° pipe elbow | 3 psi (0.2 bar/21 kPa) |
| pipe tee | 5 psi (0.3 bar/34 kPa) |
| 45° pipe elbow | 1-1/2 psi (0.1 bar/10 kPa) |
| swing check valve | 18 psi (1.2 bar/124 kPa) |

Internal Area Loss Due to Hose Size Reduction

| Main Hose Size | Whip Hose Size | % of reduction |
|----------------|----------------|----------------|
| 2" (50mm) | 1-1/2" (38mm) | 44% |
| 2" (50mm) | 1-1/4" (32mm) | 61% |
| 1-1/2" (38mm) | 1-1/4" (32mm) | 31% |
| 1-1/2" (38mm) | 1" (25mm) | 56% |
| 1-1/4" (32mm) | 1" (25mm) | 36% |
| 1-1/4" (32mm) | 3/4" (19mm) | 64% |
| 1" (25mm) | 3/4" (19mm) | 44% |