1 **GENERAL**

1.1 **REFERENCES**

.1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
- .1 Material Safety Data Sheets (MSDS).

1.2 **SUBMITTALS**

.1 Product Data:
- .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 00 10 – General Instructions. Include product characteristics, performance criteria, and limitations.
  - .1 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 00 10 – General Instructions.

.2 Shop Drawings:
- .1 Submit shop drawings in accordance with Section 01 00 10 – General Instructions.
- .2 Provide diagrams showing normal positions, model numbers, air piping and wiring layouts.
- .3 Provide damper schedule indicating size, configuration, capacity and locations.
- .4 Provide technical literature on components.

.3 Closeout Submittals
- .1 Provide maintenance data for incorporation into manual specified in Section 01 00 10 – General Instructions.

1.3 **QUALITY ASSURANCE**

.1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

2 **PRODUCTS**

2.1 **AIR PRESSURE GAUGES**

.1 At components, minimum 40mm diameter, with applicable range.

2.2 **PILOT POSITIONERS**

.1 Full relay type: with interconnecting linkage for mechanical feedback on damper and valve operators acting in unison or sequenced from single controller.

2.3 **DAMPERS**

.1 Operating type dampers are specified in Section 23 33 15 – Dampers-Operating.

2.4 **DAMPER OPERATORS**

.1 Provide spring return for "fail-safe" in normally open or normally closed position as indicated.

.2 Size operator to control dampers against maximum pressure or dynamic closing pressure, whichever is greater.

.3 Provide piston type operators with adjustable spring and stroke. Provide adjustable external stops to limit stroke in either direction.

.4 Where pneumatic damper operators are connected into fire alarm system, provide additional control devices to allow dampers to respond and go to required position upon signal in less than 15 seconds.

2.5 **IDENTIFICATION**

.1 Provide in accordance with Section 23 05 53.01 – Mechanical Identification.

2.6 **CONTROL AIR TUBING**

.1 Copper: type L complete with flared fittings.

3 **EXECUTION**

3.1 **MANUFACTURER'S INSTRUCTIONS**

.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.2 **INSTALLATION**

.1 Identify and code pneumatic tubing at every branch and at each piece of equipment and components.

.2 Use cooper tubing with flared fittings in all locations.

.3 Follow building lines. Do not cover with insulation. Install drip legs and drains at low points.

.4 Install pilot positioners on operators.

3.3 **CLEANING**

.1 Proceed in accordance with Section 01 00 10 – General Instructions.