INTERNATIONAL STANDARD

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Pneumatic fluid power — General rules and safety requirements for systems and their components

Transmissions pneumatiques — Règles générales et exigences de sécurité pour les systèmes et leurs composants

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5.4.5.9.2 Installation

Installation of hose assemblies shall

a) have the minimum length necessary to avoid sharp flexing and straining of the hose during the component operation; hoses should not be bent with a radius smaller than the specified minimum bending radius;

b) minimize torsional deflection of the hose during installation and use, e.g. as the result of a rotating connector jamming;

c) be located or protected to minimize abrasive rubbing of the hose cover;

d) be supported, if the weight of the hose assembly can cause undue strain.

5.4.5.10 Removal of piping

Piping should be removable without disturbing components that are mounted separately from the piping and without using special tools.

5.4.5.11 Failure of hose assemblies and plastic piping

5.4.5.11.1 When failure of a hose assembly or plastic piping constitutes a whiplash hazard, it shall be restrained or shielded by suitable means. In addition, an air fuse for compressed air should be mounted.

5.4.5.11.2 When the failure of a hose assembly or plastic piping constitutes a fluid ejection hazard, it shall be shielded by suitable means.

5.4.6 Control systems

5.4.6.1 Unintended movement

In all phases of operation, control systems shall be designed to prevent unintended hazardous movement and improper sequencing of actuators, particularly vertical and inclined motions.

5.4.6.2 Pressure regulation

5.4.6.2.1 Control shall be provided to maintain the system pressure within safe limits, e.g., where pressure regulators are used in pneumatic circuits for safety, they should be of the self-relieving type; see 5.2.2.2 and 5.2.2.4.

5.4.6.2.2 A relieving-type pressure regulator that is not designed to be a safety component shall not be the sole device to prevent excess pressure where its relief capability is inadequate.

5.4.6.2.3 The required accuracy of pressure regulation and flow rate characteristics for the application determines the type of regulator used (see ISO 6953-1).

5.4.6.3 Adjustable control mechanisms

5.4.6.3.1 Pressure and flow control valves shall be constructed to permit adjustment within their ratings. Adjustment beyond these ratings can be possible; the ratings are not maximum adjustable limits.

5.4.6.3.2 Adjustable control mechanisms shall hold their settings within specified limits until reset.

5.4.6.3.3 The required accuracy of pressure regulation and flow rate characteristics for the application determines the type of regulator used; see ISO 6953-1.