International Standard 5941

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Compressors, pneumatic tools and machines — Preferred pressures

Compresseurs, outils et machines pneumatiques — Pressions préférentielles

First edition — 1979-09-15

UDC 621.51/.54 :532.11 **Ref. No. ISO 5941-1979 (E)**

Descriptors : compressors, pneumatic equipment, pressure

Price based on 2 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5941 was developed by Technical Committee ISO/TC 118, *Compressors, pneumatic tools and pneumatic machines*, and was circulated to the member bodies in July 1978.

It has been approved by the member bodies of the following countries :

Austria	Hungary	Romania
Belgium	India	Sweden
Czechoslovakia	Ireland	United Kingdom
Finland	Korea, Rep. of	Yugoslavia
France	Netherlands	
Germany, F. R.	Poland	

The member body of the following country expressed disapproval of the document on technical grounds :

Australia

Printed in Switzerland

Compressors, pneumatic tools and machines — Preferred pressures

0 Introduction

In the field of fluid power systems and components, nominal pressures are already the subject of ISO 2944, in which all nominal pressures have been chosen between 0,1 and 1 000 bar[1] as preferred and non-preferred values according to the R 5 and R 10 series of preferred numbers.

In the compressor industry, with its *de facto* standardized rated pressures for some fields of application, deviations from the ideal series must be accepted. The two deviations are :

7 bar ($\approx$ 100 lbf/in^2 gauge);

18 bar ($\approx$ 250 lbf/in^2 gauge).

In addition, only one pressure, 12,5 bar, has been taken from the non-preferred values in the range given in ISO 2944. The standardized rated pressure range for the compressor field thus contains only half as many values as the range for the fluid power field, which must be considered as an advantage.

The range of design pressures given for pneumatic tools and machines is very limited and concentrated on those which are *de facto* standardized by usage.

If a manufacturer has to choose a design pressure outside the standard range for a new tool or a new application, the range of rated pressure for compressors may be used for guidance.

1 Scope and field of application

This International Standard lays down a series of preferred pressures to be used as reference pressures when presenting performance data for compressors, pneumatic tools and pneumatic machines. Components for compressed air systems should also be designed to meet the standardized pressures.

The stated pressures are effective (gauge) pressures, given in bars.

2 References

ISO 2787, *Rotary and percussive pneumatic tools — Acceptance tests.*

ISO 2944, *Fluid power systems and components — Nominal pressures.*

3 Definitions

For the purposes of this International Standard, the following definitions apply :

3.1 rated pressure (for compressors) : A pressure in the range specified in this International Standard to meet the users' and manufacturers' needs for established pressure levels between 0,4 and 400 bar.

NOTE — It can be presumed that a compressor has its optimal or near optimal performance at its rated pressure.

3.2 design pressure (for pneumatic tools or pneumatic machines) : The pressure at which the tool or machine is normally intended to be used. This is the pressure at which the performance tests for the machine should be run (see, for example, ISO 2787).

1) 1 bar = 0,1 MPa