

International Standard



8434

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Hydraulic fluid power — Connection for tubes and hoses — Dimensions and designs for 37° flare and 24° flareless fittings

Transmissions hydrauliques — Raccordements des tubes et tuyaux — Dimensions et types de raccords à évasement à 37° et à cône à 24°

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8434 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Hydraulic fluid power — Connection for tubes and hoses — Dimensions and designs for 37° flare and 24° flareless fittings

0 Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. Components are connected through their ports by fluid conductor fittings and tubes and by hose fittings. Tubes are rigid conductors; hoses are flexible conductors.

1 Scope and field of application

1.1 This International Standard lays down general and dimensional specifications for sealing connections to be applied to fluid power tubes. Two types of connection are dealt with in this International Standard:

- 24° flareless (bite) type fitting;
- 37° flare type fitting.

1.2 This International Standard details only the female half of the 24° flareless (bite) type fitting, leaving each manufacturer to qualify his own mating ferrule that will bite into the tubing outside diameter when tightened with an appropriate mating nut.

1.3 This International Standard also details all the components of the 37° flare fitting type, including the shape and size of the tubing flare. Both metric and inch outside diameter tubing is accommodated by merely changing the most economical component, the sleeve (see annex A). In the past fittings have been predominantly used with inch tubing.

1.4 Both the 24° flareless (bite) and 37° flare fittings can be used on tubular ends of hose fittings as well.

1.5 The 24° flareless (bite) fittings may be attached to heavier wall tubing than can be accommodated by flaring, thus accounting for the higher nominal pressure ratings.

1.6 This International Standard also specifies methods, whereby the flare type can be adapted to machined flare ends that may be welded or brazed onto tubing or hose couplings. By doing this, heavier wall tubing, like the 24° cone type, can be accommodated and higher nominal pressures can be used.

2 References

- ISO 286, *ISO systems of limits and fits*.¹⁾
- ISO 724, *ISO metric screw threads — Basic dimensions*.
- ISO 725, *ISO inch screw threads — Basic dimensions*.
- ISO 3040, *Technical drawings — Dimensioning and tolerancing cones*.
- ISO 4397, *Fluid power systems and components — Connectors and associated components — Outside diameters of tubes and inside diameters of hoses*.
- ISO 4399, *Fluid power systems and components — Connectors and associated components — Nominal pressures*.
- ISO 5598, *Fluid power systems and components — Vocabulary*.
- ISO 6508, *Metallic metals — Hardness test — Rockwell test (scales A — B — C — E — F — G — H — K)*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 5598 apply.

4 Specification of materials

All fitting components shall be made of steel with a minimum yield strength of 170 MPa and a minimum ultimate strength of 310 MPa. If tubing is to be flared, it shall have a minimum elongation of 35 % in 50 mm and a maximum Rockwell hardness of 65 HRB (see ISO 6508).

5 General specifications

5.1 Either the 24° flareless (bite) type or the 37° flare type connection shall be selected.

5.2 When specifying the 37° flare type, it shall also be specified whether metric or inch tubing is to be used.

1) At present at the stage of draft. (Revision of ISO/R 286-1962.)