

This is a preview of "ISO/TS 17165-2:2013". [Click here to purchase the full version from the ANSI store.](#)

First edition  
2013-04-01

---

---

## Hydraulic fluid power — Hose assemblies —

### Part 2: Practices for hydraulic hose assemblies

*Transmissions hydrauliques — Flexibles de raccordement —*

*Partie 2: Pratiques pour les flexibles de raccordement hydrauliques*



Reference number  
ISO/TS 17165-2:2013(E)

© ISO 2013



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO/TS 17165-2:2013". Click here to purchase the full version from the ANSI store.

## Contents

	Page
<b>Foreword</b> .....	<b>v</b>
<b>Introduction</b> .....	<b>vi</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Safety considerations</b> .....	<b>2</b>
4.1 General.....	2
4.2 Fluid injections.....	2
4.3 Whipping hoses.....	2
4.4 Burns from conveyed fluids.....	3
4.5 Fire and explosions from conveyed fluids.....	3
4.6 Fire and explosions from static-electric discharge.....	3
4.7 Electrical shock.....	3
4.8 Mechanisms controlled by fluid power.....	3
<b>5 Hose selection and routing</b> .....	<b>3</b>
5.1 General.....	3
5.2 System pressures.....	3
5.3 Suction.....	4
5.4 External pressure.....	4
5.5 Temperature.....	4
5.6 Permeation.....	4
5.7 Compatibility between hose materials and system fluids.....	4
5.8 Environment.....	4
5.9 Static-electric discharge.....	5
5.10 Sizing.....	5
5.11 Unintended uses.....	5
5.12 Specifications and standards.....	5
5.13 Unusual applications.....	5
5.14 Hose assembly cleanliness.....	5
5.15 Hose fittings.....	5
5.16 Vibration.....	6
5.17 Hose cover protection.....	6
5.18 External physical abuse.....	6
5.19 Swivel hose fittings and connectors.....	7
5.20 Rotary connectors.....	7
5.21 Slings and clamps.....	7
5.22 Minimum bend radius.....	7
5.23 Elbows and connectors.....	8
5.24 Lengths.....	8
5.25 Hose movement and bending.....	9
<b>6 Hose assembly fabrication</b> .....	<b>11</b>
6.1 General.....	11
6.2 Component inspection.....	11
6.3 Hose fitting parts.....	11
6.4 Compatibility between hose and hose fittings.....	11
6.5 Hose assembly equipment.....	11
6.6 Safety equipment.....	12
6.7 Condition of hose assembly parts.....	12
6.8 Cleanliness of hoses and hose assemblies.....	12
6.9 Temperature.....	12
6.10 Assembly inspection.....	12
6.11 Marking.....	12

This is a preview of "ISO/TS 17165-2:2013". Click here to purchase the full version from the ANSI store.

<b>7</b>	<b>Hose installation and replacement</b> .....	<b>12</b>
7.1	General .....	12
7.2	Pre-installation inspection .....	12
7.3	Handling during installation .....	13
7.4	Twist angle and orientation .....	13
7.5	Securing and protection .....	13
7.6	Routing .....	13
7.7	Assembly torque .....	13
7.8	System checkouts .....	14
<b>8</b>	<b>Maintenance inspection</b> .....	<b>14</b>
8.1	General .....	14
8.2	Inspection frequency .....	14
8.3	Visual inspection (hose and hose fittings) .....	14
8.4	Visual inspection (all other components in the system) .....	15
8.5	Functional tests .....	15
<b>9</b>	<b>Storage</b> .....	<b>15</b>
9.1	General .....	15
9.2	Age control .....	15
9.3	Storage conditions .....	16
<b>10</b>	<b>Identification statement</b> (reference to this part of ISO 17165) .....	<b>16</b>
	<b>Annex A</b> (informative) <b>Examples of actual failure resulting from improper use</b> .....	<b>17</b>

This is a preview of "ISO/TS 17165-2:2013". [Click here to purchase the full version from the ANSI store.](#)

## 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. [www.iso.org/directives](http://www.iso.org/directives)

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. [www.iso.org/patents](http://www.iso.org/patents)

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 131, *Fluid power systems*, Subcommittee SC 4, *Connectors and similar products and components*.

This first edition of ISO/TS 17165-2 cancels and replaces ISO/TR 17165-2:2006, which has been technically revised.

ISO 17165 consists of the following parts, under the general title *Hydraulic fluid power – Hose assemblies*:

- *Part 1: Dimensions and requirements*
- *Part 2: Practices for hydraulic hose assemblies*

## Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit.

To allow fluid flow between components, they are interconnected by piping, both rigid (tubes and tube connectors) and flexible (hose assemblies, which consist of hose and hose fittings).