

INTERNATIONAL  
STANDARD

ISO  
8278

Second edition  
2016-03-01

---

---

---

**Aerospace series — Hydraulic,  
pressure compensated, variable  
delivery pumps — General  
requirements**

*Série aérospatiale — Pompes hydrauliques à débit variable régulé en  
fonction de la pression — Exigences générales*



Reference number  
ISO 8278:2016(E)

© ISO 2016



## **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2016, Published in Switzerland

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  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
[copyright@iso.org](mailto:copyright@iso.org)  
[www.iso.org](http://www.iso.org)

# Contents

	Page
<b>Foreword</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 General requirements</b>	<b>6</b>
4.1 Order of precedence	6
4.2 Hydraulic system characteristics	6
4.3 Airworthiness requirements	7
4.4 Qualification	7
<b>5 Functional requirements</b>	<b>7</b>
5.1 Hydraulic fluid	7
5.2 Pump pressure	7
5.2.1 Rated discharge pressure	7
5.2.2 Maximum full-flow pressure	7
5.2.3 Pressure pulsations	8
5.2.4 Inlet pressure	8
5.3 Case drain pressure	8
5.3.1 Rated case drain pressure	8
5.3.2 Maximum transient case drain pressure	8
5.3.3 Maximum case drain pressure	8
5.4 Flows	9
5.4.1 Pump rated discharge flow	9
5.4.2 Pump case flow	9
5.4.3 Shaft seal leakage flow	9
5.4.4 External leakage	9
5.5 Speed and direction of rotation	10
5.5.1 Rated speed	10
5.5.2 Overspeed	10
5.5.3 Direction of rotation	10
5.6 Torque	10
5.7 Pump overall efficiency	10
5.8 Variable delivery control	15
5.8.1 General	15
5.8.2 Adjustment	15
5.8.3 Response time	15
5.8.4 Stability	16
5.8.5 Maximum transient pressure	17
5.9 Rated temperature	17
5.10 Acoustic noise level	17
5.11 Endurance	17
5.12 Environmental requirements	18
<b>6 Detail design requirements</b>	<b>18</b>
6.1 Dimensionally critical components	18
6.2 Maintainability features	18
6.3 Seals	19
6.4 Lubrication	19
6.5 Balance	19
6.6 Self-contained failure	19
6.7 Safety wire sealing	19
6.8 Electro-conductive bonding	19
6.9 Marking	19
6.9.1 Nameplate	19