



**NSAI**  
Standards

Irish Standard  
I.S. EN 16330:2013

Winter and road service area equipment -  
Power system and related controls -  
Power hydraulic system and electric

## I.S. EN 16330:2013

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces:*

*This document is based on:*  
EN 16330:2013

*Published:*  
2 May, 2013

This document was published under the authority of the NSAI and comes into effect on:  
2 May, 2013

**ICS number:**

43.160

**NSAI**  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

**Sales:**  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

ICS 43.160

English Version

## Winter and road service area equipment - Power system and related controls - Power hydraulic system and electric

Matériels de viabilité hivernale et d'entretien des dépendances routières - Organes de puissance et commandes associées - Organes de puissance hydrauliques et interfaces électriques

Winterdienst- und Straßenbetriebsdienstausstattung - Antrieb und Steuerung von Anbaumaschinen - Leistungshydraulik und elektrische Schnittstellen

This European Standard was approved by CEN on 7 March 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Contents

Page

Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Power hydraulic system for municipal vehicles – requirements.....	4
3.1 Classification of power hydraulic systems .....	4
3.2 Drive of the oil pump .....	4
3.3 Hydraulic system .....	4
3.4 Connection between the hydraulic system of the vehicle and the implements .....	5
3.5 Flow rates .....	5
3.6 Pressure.....	5
3.7 Power .....	5
3.8 Capacity of the oil tank .....	5
3.9 Maximum oil temperature, cooling capacity test procedure.....	5
3.9.1 General.....	5
3.9.2 Cooling capacity test procedure .....	5
3.9.3 Example for calculating the $\Delta p$ for the test, which has to be adjusted at the flow restrictor .....	7
3.10 Line cross sections .....	7
3.11 Couplings and functions.....	8
3.11.1 Hydraulic system class 1 .....	8
3.11.2 Hydraulic system class 2 .....	8
3.12 Screwed joints.....	9
3.12.1 Plug, male with coupling nut (female thread), pressure line, green.....	9
3.12.2 Socket, female (male thread), separate return line, black .....	10
3.12.3 Table of thread dimensions, male thread H2 .....	10
3.12.4 Tables of coupling dimensions [mm] .....	12
3.13 Hydraulic fluid .....	12
4 Power supply 24V/125A for electrical hydraulic unit .....	12
4.1 Use of the socket .....	12
4.2 Specification of the socket .....	13
4.3 Circuit diagram.....	14
4.4 Maximum current .....	14
5 Universal electrical connection.....	15
5.1 General.....	15
5.2 Receptacle at the vehicle front and behind the cabin.....	15
5.3 Plug for implement cable fitting to socket according to 5.2 .....	17
5.4 Correspondent in-cabin receptacle to the front-mounted socket fitting to 5.2.....	18
5.5 Plug for control unit cable fitting to 5.4.....	20
5.6 Correspondent in-cabin receptacle to the socket 5.2 behind the cabin .....	21
5.7 Plug for implement cable fitting to socket according to 5.6 .....	22
Bibliography .....	23

## **Foreword**

This document (EN 16330:2013) has been prepared by Technical Committee CEN/TC 337 “Winter maintenance and road service area maintenance equipment”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard applies to power systems equipped for operation and to drive implements and attachments such as hydraulic driven front sweepers, mowers or suction sweepers on winter service vehicles or road service vehicles equipped with front-mounting plates according to EN 15432-1.

The purpose of this standard is to ensure interchangeability of vehicles and implements. The minimum requirements on the performance and the components of the hydraulic system, as well as the kind and the size of the connecting elements between the vehicle and the implement, are specified in the standard.

Clause 3 of this standard does not cover applications where the implements need a continuous hydraulic oil flow less than 45 l/ min.

Clause 4 is dealing with the electrical connection between vehicle and implement to drive an electrically driven hydraulic pump, used in trucks without hydraulic systems.

Clause 5 is dealing with a universal electrical connection used for front mounted mowers, spreaders and other road service area equipment with the following functions: power supply and transmitting CAN BUS signals.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16028, *Hydraulic fluid power — Flush-face type, quick-action couplings for use at pressures of 20 MPa (200 bar) to 31,5 MPa (315 bar) — Specifications*

ISO 16844-2, *Road vehicles — Tachograph systems — Part 2: Electrical interface with recording unit*

## 3 Power hydraulic system for municipal vehicles – requirements

### 3.1 Classification of power hydraulic systems

In this document, two different power hydraulic systems are standardized:

- class 1: medium power system;
- class 2: high power system.

### 3.2 Drive of the oil pump

The oil pump shall be driven directly by the vehicle engine and independently from the vehicle drive train. A clutch or a coupling between the engine and the pump is permissible. A drive ratio between the engine and the pump is allowed.

### 3.3 Hydraulic system

The hydraulic system consists of one open type circuit.

The hydraulic system consists in either one variable displacement pump or one or two constant pumps.

If there are two constant pumps, the flow rates shall be added (parallel circuits).

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-