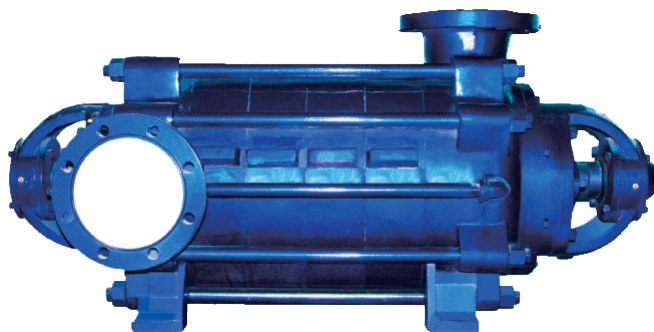


**SPCO®**  
makes life easier



**NDM**  
Horizontal multistage pumps

# Approvals

IEC

IECEE  
CB  
SCHEME

CB TEST  
CERTIFICATE

Ref. Certificate No.  
CH-5875

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR  
ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

Issued by:  
Product:  
Applicant:  
Manufacturer:  
Factory:  
Rating and principal  
characteristics:  
Trade mark (if any):  
Model/Type  
reference:  
Additional information:  
Sample of product  
tested to be in  
conformity with IEC:  
Test Report Ref. No.:

Electrosuisse  
Submersible pumps  
Swiss Pump Company  
AG  
Swiss Pump Company  
AG  
Swiss Pump Company  
AG  
220-240V~, 50/60Hz  
3 x 220V~, 50/60Hz  
3 x 400V~, 50/60Hz  
3 x 460V~, 50/60Hz  
Power range: 0.37-30kW  
class I, IP68  
Swiss Pump Company AG (SPCO)  
UG, QF, Sewage (0.37-30kW)  
see appendix type list in test report  
—  
60335-1(ed.4);am1;am2  
60335-2-41(ed.3);am1;am2  
06-HG-0208.01 + .02 + .03 + .06

Moosweg 36  
CH-3645 Gwatt (Thun)  
Moosweg 36  
CH-3645 Gwatt (Thun)  
Moosweg 36  
CH-3645 Gwatt (Thun)  
Switzerland  
Switzerland  
Switzerland  
National differences:  
EU Group Differences; EU Special National  
Conditions; EU A-Deviations

This CB Test Certificate is issued by the National Certification Body:  
Electrosuisse  
Luppenstrasse 1,  
CH-8320 Fehraltorf  
Signed by: Erich Obrist  
2010-07-27

electrosuisse

page 1 of 1

The image displays three certification logos side-by-side. On the left is the CE mark, consisting of a stylized 'C' and 'E'. In the middle is the IEC logo, which includes the letters 'IEC' above three horizontal lines. On the right is the IECEE CB Scheme logo, featuring the text 'IECEE' above 'CB SCHEME' with a stylized globe graphic.

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## Introduction

NDM single-suction multi-stage sectional-type centrifugal pump is used to transport the pure water containing no solid grains and the liquid with both physical and chemical natures similar to those of pure water, the temperature of the liquid is not over 80°C, suitable for water supply and drainage in mines, factories and cities.

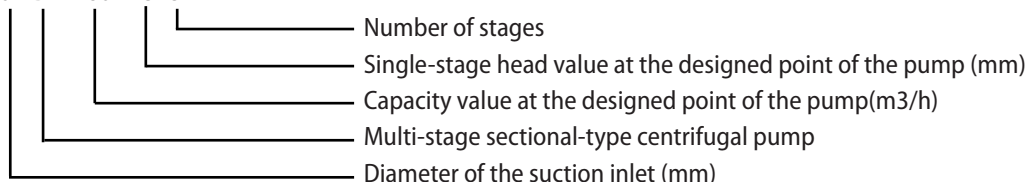
Note: Use an explosion-proof motor when used in a coal well.

## Operating conditions

- Capacity: 25 ~ 1100 m<sup>3</sup>/h
- Head: 60 ~ 1798 m

## Definition of model

200 NDM 280 - 43X3



## Calculation of the erection height

The erection height of the pump, that is the vertical distance from the sucked liquid surface to the pump shaft should be less than it which should be taken into consideration for users to select the pump, is calculated per the following formula:

$$H_{sz} \leq H_a - H_v - \Delta H_s - (NPSH)_r$$

$H_{sz}$ --- the erection height set with the pump (m)

$H_a$ --- the head of the atmospheric pressure under the conditions on the spot of use (m)

$H_v$ --- the head of the vapourized pressure under the temperature of the liquid being pumped (m)

$\Delta H_s$ --- the lost head of the suck-in pipeline (m)

$(NPSH)_r$ --- the necessary value of NP SH given in the table of performance parameters (m)

## Structure

Model NDM pump consists of four parts, stator, rotor, bearing and shaft seal:

1. Stator consists of inlet, middle and outlet sections and the guide vane etc., with the take-up bolt tightly clamping all sections to form a working room. The inlet of it stands horizontally while the outlet vertically upward.
2. Rotor consists of the shaft, impeller, balancing disk and muff etc., the shaft passes the power to the impeller to have it work; the balancing disk balances the axial force; and replaceable muff is mounted on both sides of the shaft to protect it.
3. There are rolling and sliding bearings:

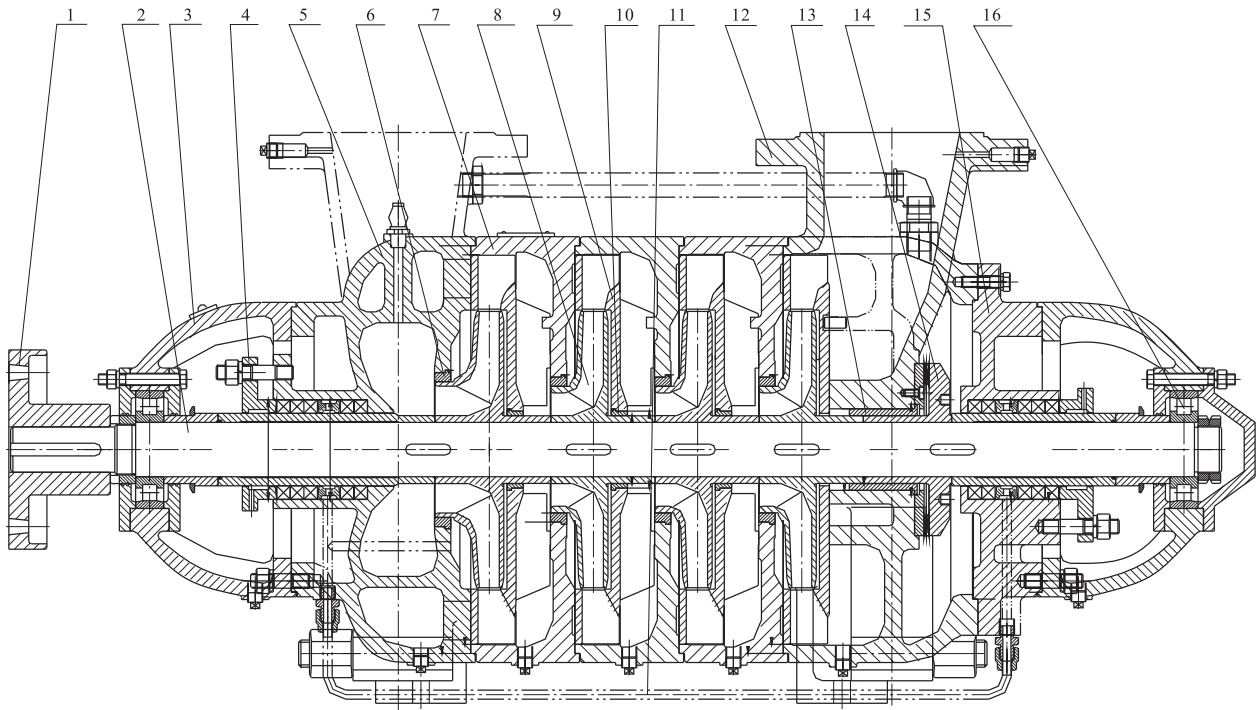
The rolling bearing consists of bearing seat, bearing and bearing gland and uses grease for lubrication.

The sliding bearing consists of bearing body and cover, liner, dust-proof disk, oil leveler, oil throwing ring etc., and uses thinned oil for lubrication.

4. The shaft is sealed with stuffing and the shaft seal consists of the sealing contents, stuffing, baffle. The liquid in the sealing work-room functions water-sealing, water cooling and water lubricating and the water for water sealing comes from the pressure water inside of the pump. A mechanical seal can also be used upon the requirement from users.

In addition, the pump is directly actuated by the prime mover through the elastic clutch and, viewing from the prime mover, moves CW.

## Sectional diagram

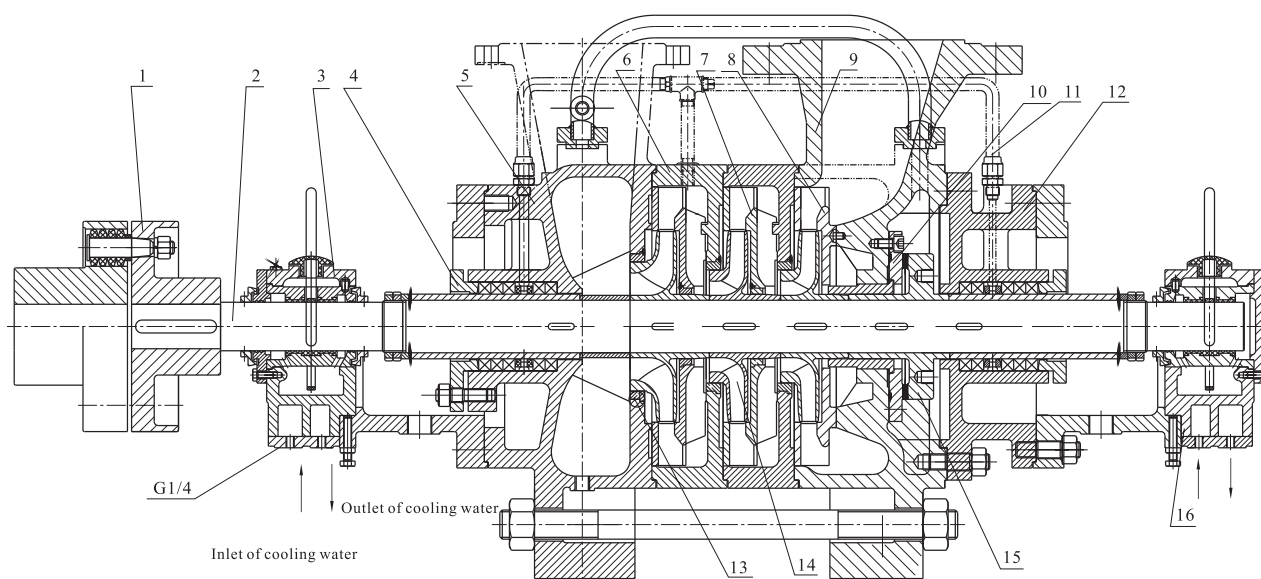


NDM6-25, NDM12-25, NDM25-30, NDM25-50, NDM46-30, NDM46-50, NDM85-45, NDM85-67(3~6), NDM155-30, NDM155-67(3~6), NDM280-43, NDM280-65, NDM360-50, NDM450-60, NDM500-57, NDM600-60, NDM720-60

Supported with the rolling bearing

No	Part name	No	Part name
1	Clutch part	9	Guide Vane
2	Shaft	10	Guide vane sleeve
3	Bearing body	11	Water sealing pipe-Part
4	Stuffing gland	12	Outlet section
5	Inlet section	13	Balancing sleeve
6	Seal ring	14	Balancing disk
7	Middle section	15	Stuffing content
8	Impeller	16	Bearing

## Sectional diagram

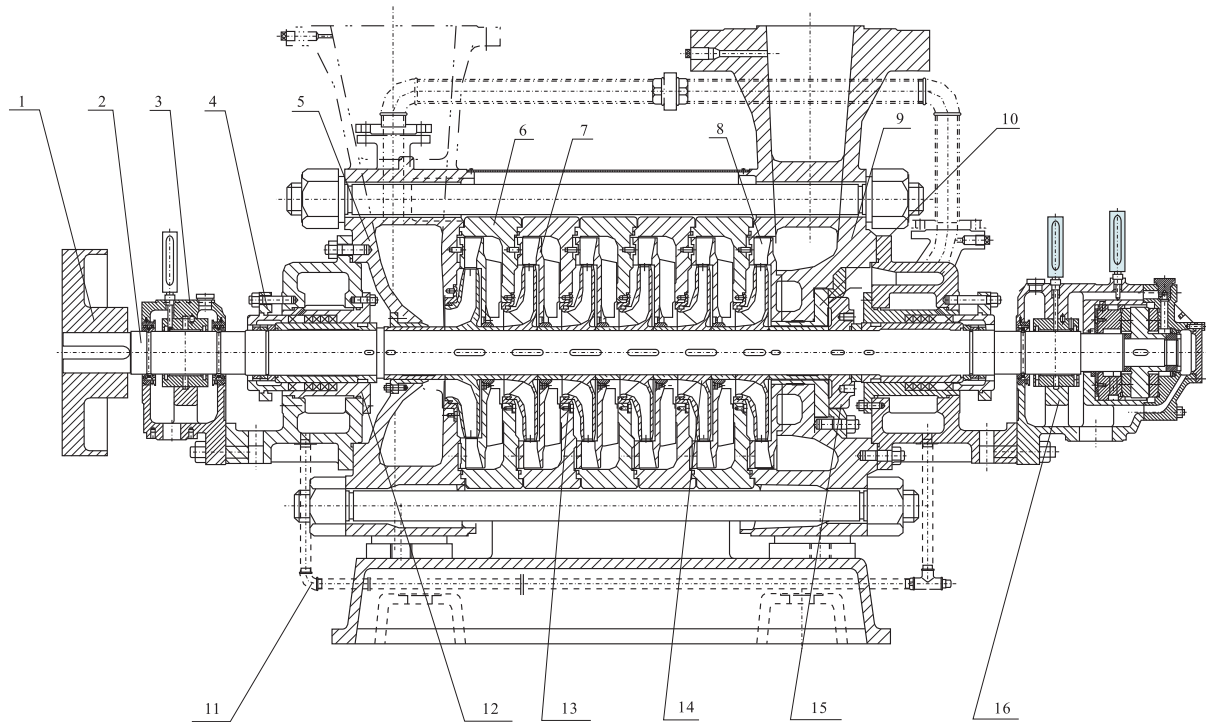


NDM85-67(7~9), NDM 85-80, NDM 50-100, NDM155-67(7~9), NDM280-100

Supported with the sliding bearing

No	Part name	No	Part name
1	Clutch part	9	Outlet section
2	Shaft	10	Balancing ring
3	Bearing body	11	Water sealing pipe-Part
4	Stuffing gland	12	Stuffing content
5	Inlet section	13	Seal ring
6	Middle section	14	Impeller
7	Guide vane	15	Balancing disk
8	Final stage guide vane	16	Bearing

## Sectional diagram



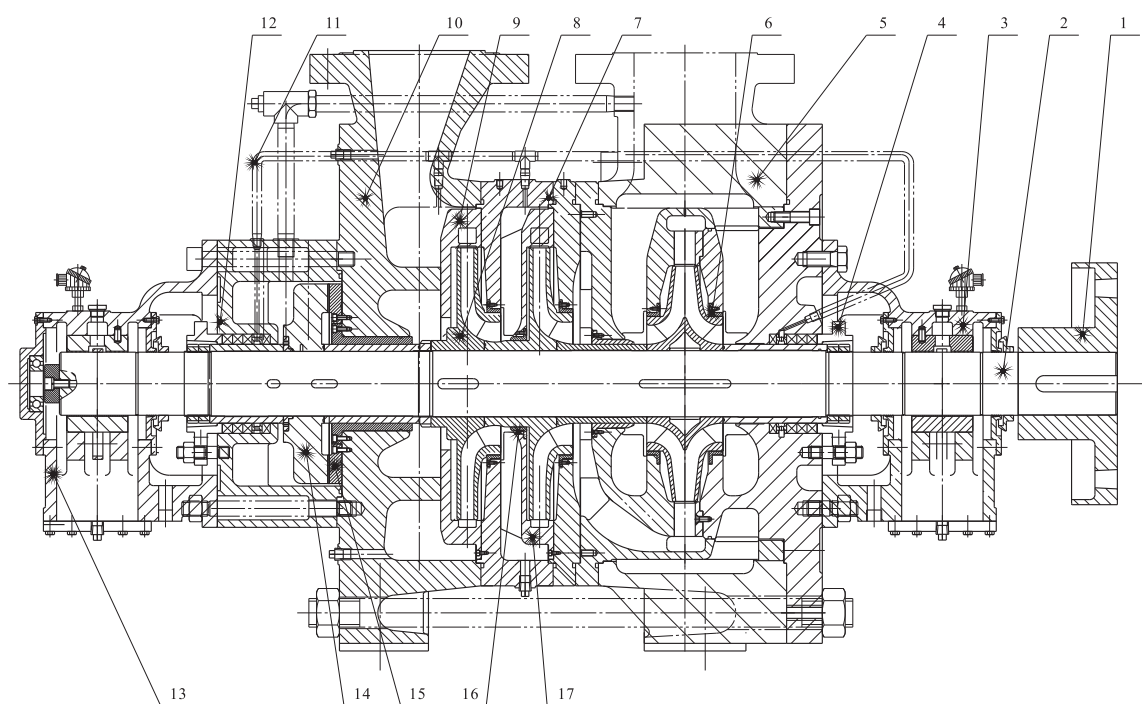
NDM 250-150, NDM 250-150(A), NDM 300-150, NDM 300-150(A)

Supported with the sliding bearing (forced lubrication)

No	Part name	No	Part name
1	Clutch part	9	Outlet section
2	Shaft	10	Balancing ring
3	Bearing body	11	Water sealing pipe-Part
4	Stuffing gland	12	Stuffing content
5	Inlet section	13	Seal ring
6	Middle section	14	Impeller
7	Guide vane	15	Balancing disk
8	Final stage guide vane	16	Bearing



## Sectional diagram



NDM 420-93, NDM 100-86

Head impeller with double suction impeller, supported with the sliding bearing

No	Part name	No	Part name
1	Clutch part	9	Final stage guide vane
2	Shaft	10	Outlet section
3	Bearing body	11	Water sealing pipe-Part
4	Stuffing gland	12	Stuffing content
5	Inlet section	13	Bearing
6	Seal ring	14	Balancing disk
7	Middle section	15	Balancing ring
8	Guide vane	16	Guide vane set
		17	Guide vane