TÜV NORD

(1) Statement of Conformity

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 94/9/EC**

(3) **Statement of Conformity Number: TÜV 09 ATEX 366333**

(4) for the equipment: Hydraulic cylinders type CKA

(5) of the manufacturer: ATOS s.p.a.

(6) Address: Via alla piana 57
21018 Sesto Calende (VA)
Italy

Order number: 8000366333

Date of issue: 2009-02-12

(7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this statement of conformity and the documents therein referred to.

(8) The TÜV NORD CERT GmbH certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential report No. 09 204 366333.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 13463-1:2001 **EN 13463-5:2003** **EN 13463-8:2003**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This statement of conformity relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment or protective system must include the following:

Ex **II 2 GD ck IIC TX**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body

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(13) **S C H E D U L E**

(14) **Statement of Conformity No. TÜV 09 ATEX 366333**

(15) Description of equipment

The equipment is an hydraulic cylinder designed for use in places where a source of release of flammable materials gives rise to a potentially explosive atmosphere. It's designed to work with mineral oils and fire resistant fluids. The hydraulic cylinder is designed and built to convert hydraulic energy into linear movements. The driving force is determined by the hydraulic pressure in the cylinder chamber. The rod, connected to the piston, is free to move and can convert the fluid pressure (p) operating alternatively on the two piston surface (A) to a force (F) whose value is given by F = p x A. The two chambers are defined by the cylinder housing and two heads (front and rear) kept together by four tie rods and eight nuts with defined tightening torque. The rod bearing for better rod guide is screwed into the front head. External oil leakage is avoided by the rod-seals on the rod guide bushing and by the OR between cylinder housing and the two heads. The piston is equipped with 1 seal and 2 guide rings to prevent oil leakage between the two chambers and to guide the piston. Cylinders are available with front and rear cushioning piston, designed to dissipate the energy of the mass connected to the cylinder rod, progressively reducing its speed before the mechanical stroke end.

Type Key

CKA ./ ..- ../ ../ ..* ...- . . . . . B. .. X. ..

Cushioning adjustments pos. Rear	Z
Selected position	1,2,3 or 4
Oil Port Position Rear	
Selected position	1,2,3 or 4
Cushioning adjustments pos. Front	E
Selected position	1,2,3 or 4
Oil Port Position Front	
Selected position	1,2,3 or 4

Rod end female thread	F
Rod end light female thread	G
Rod end light male thread	H
Oversized oil ports front	D
Oversized oil ports rear	Y
Proximity sensors front sensor	R
Proximity sensors rear sensor	S
Rod treatment nickel and chrome plating	K

Rod treatment induction surface hardening and chrome plating	T
Air bleeds front	A
Air bleeds rear	W
Rod side draining	L
Sealing System	
NBR + POLYURETHANE	1
FKM + PTFE	2
NBR + PTFE	4
NBR + PTFE	6
NBR + PTFE	7
Spacer	
None	0
50mm	2
100mm	4
150mm	6
200mm	8
Cushioning	
none	0
Fast adjustable rear only	1
Fast adjustable front only	2
Fast adjustable front and rear	3
Slow adjustable rear only	4
Slow adjustable front only	5
Slow adjustable front and rear	6
Fast fixed rear only	7
Fast fixed front only	8
Fast fixed front and rear	9
Mounting Style	
fixed clevis	C
fixed eye	D
feet	E
front trunnion	G
rear trunnion	H
feet with key	K
intermediate trunnion	L
front flange	N
rear flange	P
fixed eye + spherical bearing	S
threaded hole + tie rods extended	T
rear tie rods extended	V
both and tie rods extended	W
basic execution	X
front tie rods extended	Y
front threaded holes	Z

Stroke size	Up to 5000mm
Second Rod Diameter Size	12-140mm
Rod Diameter Size	12-140mm
Bore Size	25-200mm
Incorporate subplate	
10	Size 06
20	Size 10
30	Size 16
40	Size 25
Rod Position Transducer	
M	Magnetosonic Prog.

Technical data

Main characteristics

Permitted range of the ambient temperature	- 20° C to +70° C
Fluid Temperature	- 20° C to +70° C - 20° C to +120° C for seals type **2**
Max working pressure	16 MPa
Max pressure (peak)	25 MPa
Max frequency	5 Hz
Max speed	1 m/s for seal type **2**, **4**, **6**, **7** 0.5 m/s for seal type **1**
Recommended oil viscosity	15 ÷100 mm^2/s
Fluid contamination class according to ISO 4406	ISO 19/16 (achivable wint in-line filters at 25 µm)

Operating temperature

Sealing System	Material	Features	Max Speed [m/s]	Maximum oil temperature	Temperature class
1	NBR + POLYURETHANE	high static and dynamic sealing	0.5	+70°C	T6 ; T85 °C
2	FKM + PTFE	very low friction and high temperatures	1	+120°C	T4; T135 °C
2	FKM + PTFE	very low friction and high temperatures	1	+70°C	T6; T85 °C
4	NBR + PTFE	very low friction and high speeds	1	+70°C	T6 ; T85 °C
6-7	NBR + PTFE	very low friction single acting - pushing/pulling	1	+70°C	T6 ; T85 °C

(16) Test documents are listed in the test report No. 09 204 366333.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones