1 # EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3 EC - Type Examination Certificate Number: **Baseefa03ATEX0443X**

4 Equipment or Protective System: **VANE ACTUATOR AND SPRING RETURN UNIT**

5 Manufacturer: **KINETROL LIMITED**

6 Address: **Trading Estate, Farnham, Surrey. GU9 9NU**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa (2001) Ltd. Notified body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, 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 confidential Report No. **02(CI)0343**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN13463-1:2001 EN13463-5:2003 Inherent Safety

except in respect of those requirements listed at item 18 of the Schedule.

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 EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

Ⓔx II 1GD cg 90°C Tamb -20°C to +80°C

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa (2001) Ltd. Customer Reference No. **0622**

Project File No. **02/0343**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.

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13 **Schedule**

14 **Certificate Number Baseefa03ATEX0443X**

15 **Description of Equipment or Protective System**

The Kinetrol Vane Actuator is used to open and close mechanical valves. The actuator is available in eleven sizes with output torques up to 1375 Nm at 7 Bar and up to 102° travel depending on the size of actuator. The operating temperature of the actuator is determined by surrounding atmosphere and the shaft and flange seals fitted. The actuator can be provided with male or female connection facilities for subsequent connection to valves.

The Actuator consists of a painted metallic fan shaped main case, which is in two halves. The two case halves are fixed together by several bolt and nut assemblies around the flanged edges of the case and the flanged edges are sealed with sealant. The case houses a two plate metallic vane complete with upper and lower shafts and bearings that pass through openings in the upper and lower case halves. The vane is fitted with non-metallic seals and expanders around its edges to provide a seal face between the vane and the case, and the shafts are also fitted with non-metallic seals to provide a seal between the shaft and the upper and lower openings in the case. The main case is fitted with two screws that enable adjustment of the vane movement at each end of its stroke for accurate seating of the associated valve.

The actuator is operated by clean air or by various gas mediums to suit customer requirements. The operating medium is forced into the sealed case via air ports that are positioned on either side of the vane. The air causes the vane to pivot on the shaft at speeds less than 1m/s, and this rotation of the shaft is used to operate a mechanical valve.

The Vane Actuator may be fitted with the following options:

Metallic Namur adaptor block, metallic ISO adaptor and coupler, metallic mounting bracket and coupling, and Spring Return Unit.

Spring Return Unit:

The spring return unit may be supplied fitted to the Vane Actuator, or supplied separately providing it is fitted with its own relevant certification labelling.

The spring return unit is available in nine sizes from ø58.8 x 23.2 deep up to ø258 x 136 deep. The operating temperature of the spring return unit is determined by the surrounding atmosphere and the shaft and flange seals fitted. The Spring Return Unit consists of a metallic case which comprises of an upper spring housing and metallic spring base plate, which are fixed together by several bolt and nut assemblies around the flanged edges of the case, and the flanged edges are sealed using an o-ring. Within the spring housing there is a grease covered clockwise or anticlockwise low stress clock type spring. The spring is anchored to a coupler, complete with o-rings, at the inside of the winding and is fixed at the outside of the winding by screw fixings within the wall of the spring housing. The coupler provides either a male or female connection, passing through an opening in the top of the spring housing and an opening in the bottom of the spring base plate. The lower part of the coupler is used for subsequent connection to the vane Actuator and the upper part of the coupler is connected to the appropriate devise/mechanism. The spring return unit is sealed to the vane actuator using either a cork based gasket or sealant.

Variation 0.1

When the actuator and spring return units are fitted with alternative viton seals/o-rings then they may be marked as follows:

Ⓔx II 1GD cg 110°C Tamb -20°C to +100°C

16 Report Number

02(CI)0343

17 Special Conditions for Safe Use

1. The maximum rubbing speed of any component within the actuator and spring return unit must not exceed 1m/s.
2. The actuator shall not be operated with flammable gas/air mixtures.
3. Do not allow dust layers to build up on the apparatus.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Issue	Date	Description
98-250/A1	G	01/04/04	Actuators and other mechanical ancillaries for use in category 1 explosive atmospheres.
98-256/A1	D	01/04/04	Spring return units for use in category 1 explosive atmospheres.
99-033-4/A3	G	17/03/04	ATEX actuator label category 1 (Viton)
99-033-5/A3	H	17/03/04	ATEX actuator label category 1
99-058/A3	D	01/04/04	CE 0518 Label