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**IMPORTANT: READ THIS OPERATOR'S MANUAL CAREFULLY BEFORE
INSTALLING AND/OR USING A MODEC AIR MOTOR.**



ORIGINAL INSTRUCTIONS

MODEC AIR MOTOR

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|--|
| CERTIFICATE OF COMPLIANCE TO EUROPEAN SAFETY NORMS |
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DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY (**Directive 2006/42/EC of the European parliament and of council of 17 May 2006**) and EC DECLARATION OF CONFORMITY (ATEX **DIRECTIVE 94/9/EC**)

I undersigned Pierre-Yves Cote / President of Modec air motors / Z.I. Les Bosses 26800 Etoile sur Rhône / France /

Siret : 493 748 917 000 17

⇒ Declare that the following ranges of air motors:

- MT05, MT07, MT10, MT20, MT25, MT30, MT40, MR07, MR08, MR10, MR20, MR25, MR30, MR40, NT05, NT07, NT10, NT20, NT25, NT30, NT40, NR07, NR08, NR10, NR20, NR25, NR30, NR40.
- Offering under 6 bars from 40 Watts to 3500 Watts
- Made of one pneumatic section, one planetary gear box, one mounting flange and one output shaft.

Applies with the essential requirements of the Directive 2006/42/EC of the European parliament and of council of 17 May 2006. The relevant documentation is complied in accordance with part B of Annex VII of the above Directive.

Those documents can be transmitted in response to a reasoned request by the national authorities.

Our motors considered as partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of this Directive.

⇒ Declare that the following ranges of air motors:

- MT05, MT07, MT10, MT20, MT30, MR07, MR08, MR10, MR20, MR30,
- Offering under 6 bars from 40 Watts to 3500 Watts
- Made of one pneumatic section, one planetary gear box, one mounting flange and one output shaft.
- Marked with the following mention : MODEC/France/2009 / Modec part number / ATEX II 2 G/D c IIC T6/T4 / LCIE 09 ATEX 1003X

Applies with the essential requirements of the Directive 94/9/EC : **Directive 94/9/EC of the European Parliament and the Council of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective.**

Origin : All motors have been produced and mounted in France.

Etoile sur Rhône November 3rd , 2010



Pierre-Yves Cote / **President** / Modec S.A.S.

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1 – General description and identification of motors

MODEC air motors are composed of the following:

1. A Pneumatic part linked to the power range.
2. A Planetary geared reduction system enabling to adapt torque and speed.
3. A Mounting flange.
4. A shaft, it can be of various types.

Your air motor is the combination of these 4 items. The numbering MODEC identifies precisely all the components of your motor.



Reference motor:



Motor serial number:

Date :

Stamp :

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2 - Safety Instructions

To read carefully prior to any installation, use and maintenance.

- Changes may be made to the motors described in this document. We reserve the right to change, without notice, the characteristics thereof.
- This document is unique and it is the property of MODEC Company. It can not be corrected, modified or duplicated without written agreement.
- This document does not replace the security rules set by the Labor Code or any other laws applicable in the place of use of the motor.

Operators using or near the motors must bear the following protections, depending on the site or they are used. Additional protections can be expected.

It is for the user company to ensure that safety rules are respected..



This operator's manual must always be available near the place of use of motor. It must be read and used by all persons connected with the work carried out by the latter.

- All changes to motors or its accessories must be approved by the manufacturer by writing.
- Motors, during use are sources of noise. It is recommended to use adequate hearing protection.
- Excessive lubrication can cause damage to the operator, because it involves spraying in its immediate environment of a certain quantity of oil in the air from the motor.
- Motor can produce vibrations. Frequent and prolonged exposure to these high intensity vibrations can cause disorders and diseases that affect especially hands and arms. The effects are not yet well known because they depend on several factors, including: the type of work, the physical conditions of the operator, the duration and exposure conditions.



* Lack of compliance with instructions contained in this manual, as well as changes, omissions and use of spare parts that don't meet the specifications detailed in this manual, relieves the manufacturer from any liability relating to proper use, proper functioning and protection of persons and equipment.

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3 – How to start an air motor

✓ Transporting the motor:

On receipt of the motor, make sure that the package and the motor have not been damaged. If any damage is noticed, please contact MODEC. Keep the package until you have set up the motor. When moving to another workstation or another workshop, make sure that you cautiously transport the motor. Use an appropriate package to avoid damaging the motor.

✓ Installing the motor

Patterns of pneumatic feeding of MODEC motors (see the diagrams below)

Before to make any operation to start an air motor, it must ensure good quality of network air to protect the motor against pests, dirt and rusting.

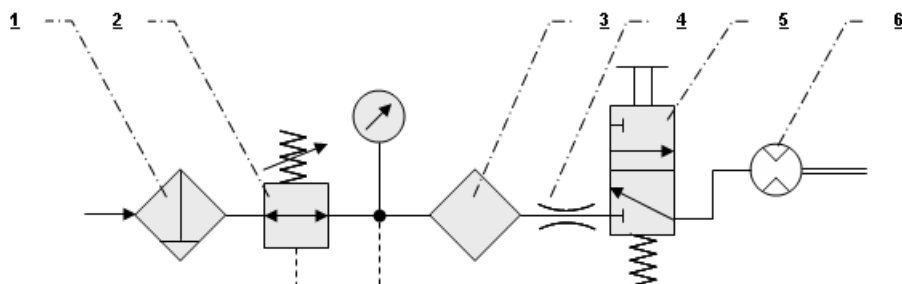
This includes:

- The supply pressure must never exceed the maximum working pressure of the motor is 6 bars, whichever is greater using a pressure regulator
- The flow must be sufficient for the motor
- The installation of a lubricant filter between the plug and the input fitting is essential for the motor with 50 micron filtration and lubrication oil 50 mm³ per m³ of air consumed.
- It is advisable to connect each motor to the supply system by inserting a switch tire safety, in order to avoid any whiplash that could cause a pipe broke or detached
- Don't use tubes damaged or worn. Inspect carefully feeding tubes before use: a ruptured tube can cause some damage.
- The feeding tube should be oil resistant, abrasion and adapted to the pressure of the motor.
- The excessive length of tube should be avoided.

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Direction of rotation left or right

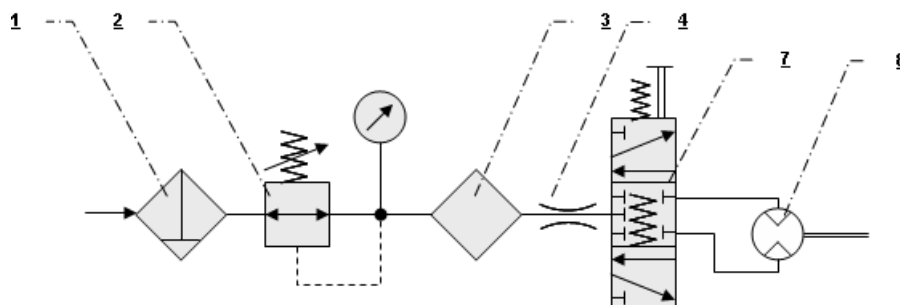
1. Filter
2. Pressure regulator
3. Lubricating system
4. Flow control system
5. Distributor 3/2
6. Non reversible motor



| | | KV mini distributeur KV mini distributor | Diamètre mini raccord Mini fitting diameter | Diamètre mini tuyau Mini pipe diameter |
|---------------------------|--------|---|--|---|
| MT05XT; MT07XT; MR07XT | Europe | 10 Kv | 5 mm | 6 mm |
| | US | 0,7 Cv | 0,197 in | 0,2364 in |
| MT08XT; MR08XT | Europe | 30 Kv | 7,5 mm | 10 mm |
| | US | 2,1 Cv | 0,2955 in | 0,394 in |
| MT10XT; MR10XT | Europe | 45 Kv | 7,5 mm | 10 mm |
| | US | 3,15 Cv | 0,2955 in | 0,394 in |
| MT20XT; MR20XT | Europe | 50 Kv | 8,2 mm | 12 mm |
| | US | 3,5 Cv | 0,32308 in | 0,4728 in |
| MT30XT; MR30XT | Europe | 60 Kv | 11 mm | 20 mm |
| | US | 4,2 Cv | 0,4334 in | 0,788 in |

Direction of rotation reversible

1. Filter
2. Pressure regulator
3. Lubricating system
4. Flow control system
7. Distributor 5/3
8. Reversible motor



For a reversible engine it is necessary that the opposite opening of the feed in air is for the exhaust

| | | Kv mini distributeur Kv mini distributor | Diamètre mini raccord Mini fitting diameter | Diamètre mini tuyau Mini pipe diameter |
|---------------------------|--------|---|--|---|
| MT05RV; MT07RV; MR07RV | Europe | 20 Kv | 5 mm | 6 mm |
| | US | 1,4 Cv | 0,197 in | 0,2364 in |
| MT08RV; MR08RV | Europe | 45 Kv | 7,5 mm | 10 mm |
| | US | 3,15 Cv | 0,2955 in | 0,394 in |
| MT10RV; MR10RV | Europe | 65 Kv | 8,2 mm | 12 mm |
| | US | 4,55 Cv | 0,32308 in | 0,4728 in |
| MT20RV; MR20RV | Europe | 75 Kv | 10,4 mm | 14 mm |
| | US | 5,25 Cv | 0,40976 in | 0,5516 in |
| MT30RV; MR30RV | Europe | 100 Kv | 11 mm | 20 mm |
| | US | 7 Cv | 0,4334 in | 0,788 in |

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Motor lubrication

To maximize the life of your motor and guarantee their full power operation, it must be absolutely lubricated with 50 mm³ per m³ of air, see table below (1 drop = 15 mm³). The pneumatic oil used should have a viscosity between 22 and 46 cst depending on the temperature of motor operation (e.g. 40 ° C the viscosity of the oil should be between 22 and 30 cst) and having a temperature self-ignition above 260 ° C

| Lubrification pour une utilisation à puissance maxi Lubrication for a use at max power | | |
|---|--|--------------------------------------|
| Gammes moteurs Air motors ranges | Consommation d'air à 6 bars Air consumption with 87 PSI | Lubrification Lubrication |
| MT05; MT07; MR07 | 290 l/min 10,24 scfm | 1 goutte / min 1 drop / min |
| MT08XT; MR08XT | 850 l/min 30,01 scfm | 3 gouttes / min 3 drops / min |
| MT08RV; MR08RV | 750 l/min 26,48 scfm | 2,5 gouttes / min 2,5 drops / min |
| MT10XT; MR10XT | 1400 l/min 49,43 scfm | 4,7 gouttes / min 4,7 drops/min |
| MT10RV; MR10RV | 1700 l/min 60,03 scfm | 5,8 gouttes / min 5,8 drops / min |
| MT20XT; MR20XT | 1800 l/min 63,56 scfm | 6 gouttes / min 6 drops / min |
| MT20RV; MR20RV | 1700 l/min 60,03 scfm | 5,6 gouttes / min 5,6 drops / min |
| MT30XT; MR30XT | 2300 l/min 81,21 scfm | 7,8 gouttes / min 7,8 drops / min |
| MT30RV; MR30RV | 2400 l/min 84,74 scfm | 8 gouttes / min 8 drops / min |

Motor with « KIT NO LUB »

The motors without lubrication don't require any additional oil in the air. However, beware the quality of the area (watch the water content in the air system)

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✓ **Installing the motor after having validated the previous step**

- Set the motor on your system through the flange supplied by MODEC.
- Never operate the engine without a proper system to isolate the source.
- Clean the feeding tube of dirt and condensation and fittings.
- Connect the feeding tube to the engine before opening the air supply.
- Never forget that the tube should be examined carefully after use.

✓ **Starting up of the motor after having validated the previous steps**

Note that MODEC motors are always tested and lubricated on manufacturing process.

- First starting up, make pulses of successive air in the motor

Verify that there is not any malfunction of the motor (sounds abnormal or excessive heating)

✓ **Motor starts in Production**

At the start of motor in production, it is important to ensure continuity in time of validation of previous steps.

✓ **Long inactivity from the motor**

- When a long inactivity from an air motor, this one must keep out from an humid environment to avoid the formation of rust on the internal mechanical parts because it can reduce this early life.
- To return to service the motor, insert 3 drops of pneumatic oil into the air inlet and repeat the instructions of starting up described above.

✓ **Recycling your motor**

- A pneumatic tool is made up of steel, cast-iron, brass and plastic components. All these items can be salvaged and are not dangerous for the surroundings and/or the safety of the staff. You may separate the different materials in order to reuse them.

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4 – Maintenance and repair procedure of an air motor

✓ General recommendation

- Consider all the regulations put in place regarding safety and hygiene at work, and instructions in effect in the local framework for security including the conditions of the workplace, clothing and equipment of individual protection of the operator required by all applicable regulations.
- It is recommended that you keep a maintenance log for each operation made on the motor.



Prevent any presence of foreign body in the system, by providing a clean work surface to protect sensitive internal moving parts against, contamination by dirt and foreign material use during installation and reassembly because it may cause a deterioration of mechanical parts.

- The air motor maintenance will be performed by persons competent and trained by MODEC or our department after sales service is available for this purpose.
- It is advisable to check and clean the air motor every six months when used daily, as recommended to clean the coupling-filter fitting the motor.
- In case of engine malfunction after a period of inactivity, a few drops of oil into the fitting of air branch connection.
- Unplug systematically motor branch connection before starting an operation of substitution, adjustment, maintenance or dismantling.
- After every maintenance, the engines will be tested to verify their good functioning.



Use only replacement parts and original elements ensuring the maintenance, lubrication and sealing recommended by the manufacturer.

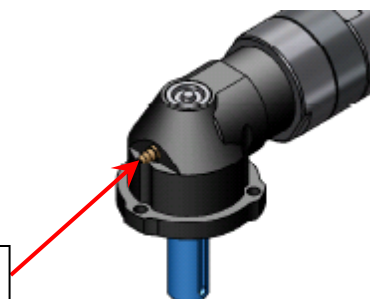
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Right angle type MR greasing

Your motor has been delivered with a greased bevel gear. The frequency of greasing operation is depending of the motor use, which are identified in 3 stages:

- low load
- medium load
- heavy load and/or shock

grease fitting



| Right angle greasing | | | | |
|--|---|------------------------|-------------------------|--|
| Gammes de moteurs Air motors ranges | Contraintes d'utilisations Constraint of use | Frequence Frequency | Quantités Quantity's | Marque recommandée Brand recommendation |
| MR07;08;09;10;20;25 | Faible Charge low load | 1000 H | 10 to 20 mL | ORAPI 606 CTDMEP 2 |
| | Charge moyenne Medium load | 500 H | | |
| | Charge importante et choc Heavy load and Shock | 200 H | | |
| MR26; 30;40 | Faible Charge low load | 900 H | 40 to 60 mL | ORAPI 606 CTDMEP 2 |
| | Charge moyenne Medium load | 400 H | | |
| | Charge importante et choc Heavy load and Shock | 150 H | | |

MT moto reducer type greasing

Your motor has been delivery with permanent greasing, if required the reducer can be re-greased:





- old grease must be removed carefully
- 50 to 70mL of grease 606 ORAPI CTDMEP 2 has to be distribute uniformly inside the reducer

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5 - ATEX certificate



The certificate below is valid only if the motor has the legal mention engraved according to the ATEX directive EN-13463-1 of 2002.





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|   | <p>13 SCHEDULE</p> <p>14 VOLUNTARY TYPE EXAMINATION CERTIFICATE</p> <p>LOIE 09 ATEX 1003X</p> | <p>15 DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM</p> <p>Pneumatic Motors</p> <p>Type : MT05, MT07, MT08, MT10, MT20, MT30, MR07, MR10, MR20, MT05S, MT07S, MT08S, MT10S, MT20S, MT30S, MR07S, MR10S and MR20S</p> <p>These Pneumatic motors are fixed non-electrical equipments.</p> <p>A pneumatic part, a planetary gear, a flange and an outlet composed the pneumatic motor.</p> | <p>Specific parameters of the models of protection concerned:</p> <p>Power : 0.15 kW to 3 kW</p> <p>Compressed air inlet pressure : 8 bars</p> <p>Compressed air inlet flow rate : 350 to 2250 l/min</p> <p>The marking shall be:</p> <p>MODEC</p> <p>Address</p> <p>Type</p> <p>Serial number</p> <p>Year of construction</p> <p>II 2 G D c IIC T6/T4 (M20/M30), T6/T5 (other types)</p> <p>LOIE 09 ATEX 1003X</p> | <p>The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.</p> <p>16 DESCRIPTIVE DOCUMENTS</p> <p>Certification file N°ATEX-1 dated 14/01/2009.</p> <p>This file includes 36 items (123 pages).</p> <p>17 SPECIAL CONDITIONS FOR SAFE USE</p> <p>Tamb. Min = -20°C</p> <p>Tamb. Max = +40°C - 80°C</p> <p>Lubrifiantes must have an ignition temperature higher than 260°C</p> <p>18 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS</p> <p>Covered by standards listed at 9.</p> <p>19 ROUTINE VERIFICATIONS AND TESTS</p> <p>None</p> |
|   | <p>13 ANNEXE</p> <p>14 ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE</p> <p>LOIE 09 ATEX 1003X</p> | <p>15 DESCRIPTION DE L'APPAREIL OU DU SYSTEME DE PROTECTION</p> <p>Moteurs pneumatiques</p> <p>Type : MT05, MT07, MT08, MT10, MT20, MT30, MR07, MR10, MR20, MT05S, MT07S, MT08S, MT10S, MT20S, MT30S, MR07S, MR10S et MR20S</p> <p>Ces moteurs pneumatiques sont des équipements non-électriques fixes. Ils sont composés d'une partie mécanique et d'une partie « réducteur planétaire », une bride de fixation et d'une sortie.</p> | <p>Paramètres spécifiques du ou des modèles de protection concernés:</p> <p>Puissance : 0.15 kW à 3 kW</p> <p>Pression d'air comprimée en entrée : 8 bars</p> <p>Débit d'air en entrée : 350 à 2250 l/min</p> <p>Le marquage doit être:</p> <p>MODEC</p> <p>Adresse</p> <p>Type</p> <p>N° de fabrication</p> <p>Année de fabrication</p> <p>II 2 G D c IIC T6/T4 (M20/M30), T6/T5 (autres types)</p> <p>LOIE 09 ATEX 1003X</p> | <p>L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.</p> <p>16 DOCUMENTS DESCRIPTIFS</p> <p>Dossier de certification N° ATEX-1 du 14/01/2009</p> <p>Ce document comprend 36 rubriques (123 pages).</p> <p>17 CONDITIONS SPECIALES POUR UNE UTILISATION SURE</p> <p>Tamb. Min = -20°C</p> <p>Tamb. Max = +40°C - 80°C</p> <p>Les lubrifiants utilisés doivent avoir une température d'inflammation supérieure à 260°C</p> <p>18 EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE</p> <p>Couvertes par les normes listées au point 9.</p> <p>19 VERIFICATIONS ET ESSAIS INDIVIDUELS</p> <p>Néant</p> |

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|   | <p>1 ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE</p> <p>2 Appareil destiné à être utilisé en atmosphères explosives (Directive 94/9/CE)</p> <p>3 Numéro de l'attestation d'examen de type</p> <p>LOIE 09 ATEX 1003X</p> | <p>4 Appareil:</p> <p>Type : MT05, MT07, MT08, MT10, MT20, MT30, MR07, MR10, MR20, MT05S, MT07S, MT08S, MT10S, MT20S, MT30S, MR07S, MR10S and MR20S</p> <p>5 Demandeur :</p> <p>MODEC</p> <p>21 Les Bosses</p> <p>26000 Etoile Sur Rhône</p> | <p>6 Appareil:</p> <p>Type : MT05, MT07, MT08, MT10, MT20, MT30, MR07, MR10, MR20, MT05S, MT07S, MT08S, MT10S, MT20S, MT30S, MR07S, MR10S and MR20S</p> <p>7 Cet appareil ou système de protection et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.</p> | <p>8 La LOIE certifie que cet appareil ou système de protection est conforme aux exigences essentielles de sécurité et de santé pour la conception d'appareils électriques de catégorie 3 ou non-électriques de catégories 2 ou système de protection destinés à être utilisés en atmosphères explosives, données dans l'annexe II de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994.</p> <p>9 Les résultats des vérifications et essais figurent dans le rapport confidentiel N°8295-579890.</p> <p>10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.</p> | <p>11 Cette attestation d'examen de type concerne uniquement la conception, les vérifications et essais de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE.</p> <p>Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection. Ces dernières ne sont pas couvertes par la présente attestation.</p> <p>12 Le marquage de l'appareil ou du système de protection doit comporter les informations détaillées au point 15.</p> <p>Fontenay-aux-Roses, le 20/01/2009</p> | <p>La responsabilité de certification ATEX</p> <p>ATEX certification manager</p> <p>Signature: Z. I. Les Bosses</p> | <p>Seul le texte en français peut engager la responsabilité de LOIE. Ce document ne peut être reproduit que dans son intégralité, sans aucune modification.</p> <p>The LOIE's liability applies only on the French text. This document may only be reproduced in its entirety without any change.</p> <p>Page 1 sur 2</p> |
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NOTES

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