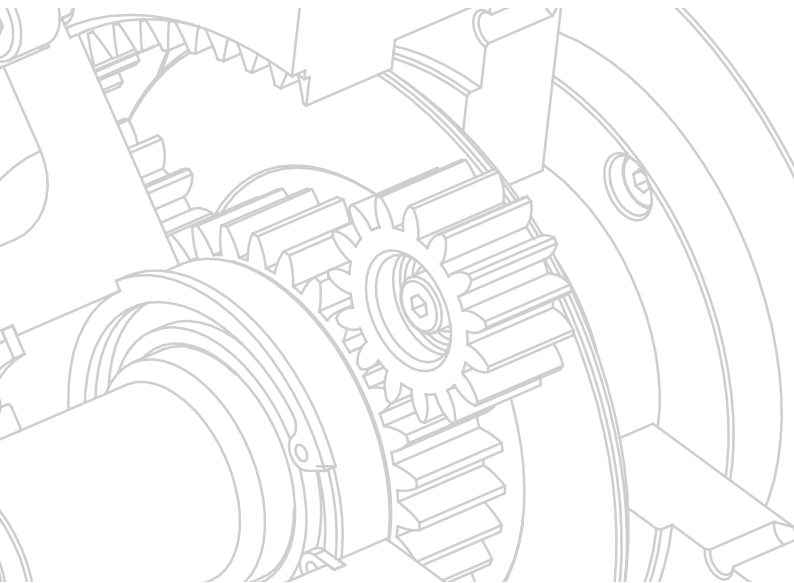


Drive and stirring technology for  
FOOD | PHARMA | COSMETICS | CHEMICALS | AUTOMATION

**PTM**  
mechatronics

**Operating instructions** for  
ECO-SEAL | ECO-SEAL PRO | ECO-SEAL INOX



WE GENERATE MOVEMENT IN SPECIAL ENVIRONMENTS.



FULL SERVICE PROVIDER  
FOR DRIVE AND STIRRING  
TECHNOLOGY.

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## 1. Preface

Dear reader,

Thank you for choosing a product from PTM mechatronics GmbH.

Our drive and agitator technology products are manufactured with the highest quality and the latest manufacturing processes.

Our service covers the entire value chain of your product, from advice and quotation through development and production to a reliable after-sales service. In addition to our standard range, your customer-specific requirements are also in the best of hands with us.

We have a certified quality management system according to **ISO 9001: 2015**. For the independent manufacture and sale of ATEX-certified products, we also have a certified quality management system in accordance with **ISO / IEC 80079-34: 2018-08**. We offer you maximum safety in all potentially explosive environments including **ATEX zone 0**.

We attach particular importance to being able to accompany and support you in all areas relating to drive and stirring technology. That is why we have specialized in our core industries of food, pharmaceuticals, cosmetics, chemicals and automation with our technologies and know-how: **ATEX, stainless steel, food safety, clean rooms, protection class IP67 and more.**

Our products are extremely **energy efficient**. We get the maximum performance out of every ounce of energy. Our drives and agitators use **up to 90% less energy** than other drive methods such as vane motors.

In addition, our drives and agitators are **oil and silicone-free as standard, low-noise and meet all occupational safety requirements.**

If you would like to find out more about our service or our products, please contact us or visit our website at: **[www.ptm-mechatronics.com](http://www.ptm-mechatronics.com)**.



## 2. General information

### 2.1. Use of the documentation

These operating instructions are the original operating instructions.

These operating instructions are part of the drive. It is intended for everyone who works on the drive.

Provide these operating instructions in a legible condition near the drive. All operators and users of the drive as well as persons who work independently on the drive must have read and understood the operating instructions in full. Due to the different sizes and equipment variants, the illustrations shown in these operating instructions may differ from your drive. If you have any questions, please contact the PTM mechatronics GmbH customer service.

### 2.2. Warning information



These operating instructions contain warning notices that require special attention. The warning notices are marked as shown here for better visibility.

### 2.3. Warranty claims

Make sure that these operating instructions are read before any work on or with the drive. This is the prerequisite for trouble-free operation of the drive and the existence of any warranty claims.

### 2.4. Product names and trademarks

The product names mentioned in this documentation are trademarks or registered trademarks of the titleholders.

### 2.5. Copyright notice

The copyright lies with PTM mechatronics GmbH. The unauthorized duplication, processing, editing or distribution, as well as any other kind of exploitation is prohibited.

### 3. Manufacturer and customer service

PTM mechatronics GmbH

Gewerbepark 1

D-82281 Egenhofen, Germany

Phone.: +49 8134 - 25 797 - 0

Fax: +49 8134 - 25 797 - 99

Email: info@ptm-mechatronics.com

Internet: www.ptm-mechatronics.com

If, despite all the care, your product does not meet your requirements, please do not hesitate to contact us.

Please always contact our customer service department before you send a drive back to us so that we can correctly assign your process. Please have the device number ready for this.

### 4. Safety and operator obligations

Operators and users must familiarize themselves with the drive and its possible applications before commissioning. The operating instructions enable safe and efficient operation of the drive. You should therefore ensure that the operating instructions are read in full by all operators and users before commissioning the drive. The instructions must be strictly adhered to during operation.

Certain work may only be carried out by qualified specialists. These are in particular:

- Assembly and installation
- Connection and commissioning
- Maintenance and repair
- Decommissioning and dismantling

Please also note the following:

- RL 1999/92 / EG (health and safety of workers)
- general safety regulations and local occupational health and safety regulations
- Warning notices on the drive
- Do not start up damaged drives



Please observe the accident prevention regulations and any additional safety provisions and regulation of the respective country!

## 5. Intended use

The drives are used to drive agitator shafts and impellers (e.g. to stir up and mix liquids and powders in open or closed containers), axes or similar. These are generally referred to in the operating instructions as "drive/s". For safe operation, they must be firmly connected to a housing or mounted on the lid of a container or on a drum lid lifting device. It is driven by compressed air. When installing the drive in electrical systems or machines, all local laws and guidelines for the system or machine must be observed before use.

### 5.1. General

The drives are only approved for proper and intended use. Any infringement or manipulation of any kind on the drives will void the guarantee and the manufacturer's responsibility.

Therefore, please note the following:

- The drive is designed for operation with a maximum pressure of 6 bar.
- The speed ranges of the drives must be adhered to.
- The environmental conditions specified in the operating instructions must be observed.
- Openings for supply and exhaust air must not be closed.
- The use of the drives is only permitted if the housing is completely closed and undamaged.
- The use of damaged drives is not permitted.
- IP67 is sufficient for the drive on the housing and side panels. Additional protection against moisture is not necessary.
- When using add-on parts, such as the agitator shaft and impeller, the operator must ensure that these are properly installed.

### 5.2. Additional information for use in EX areas

The drive can be used in the following potentially explosive areas:

- as zone separation between zone 0 and zone 1
- zone 1
- zone 21
- zone 2
- zone 22

Please note the following requirements for use in Ex areas:

- The drive may only be put into operation in potentially explosive environments by trained specialist personnel.
- The operator must ensure that there are no foreign bodies in the stirring container that could cause sparks during operation.
- Exhaust air may escape in ATEX zones 1 and 2.
- When electrostatically charged parts are discharged, ignitable sparks can occur.

- For the operation of the drives, an effective equipotential bonding must be established via the grounding screw on the housing.
- In addition to equipotential bonding, we recommend conductive pneumatic hoses. In the case of non-conductive hoses, the drives must be operated with hoses and hose bundles up to a maximum outer diameter of Ø 20 mm.
- Protect the drives from falling objects.
- Reduce the number and selection of removable connections to a minimum. Keep hose connections as short as possible and avoid mechanical tension.
- Only accessories that meet all the requirements of the European directives and the respective national legislation may be used in potentially explosive areas.
- A direct dangerous electrostatic discharge on the equipment is not permitted. Normally, such discharges cannot be generated by humans, but require a compressed air nozzle or the like.
- When used in dust-ex areas, the national regulations and operator guidelines must be observed with regard to minimum ignition energy.
- Lightning protection measures are to be ensured by the operator.
- When stirring in non-conductive containers, please observe the operator guidelines, national regulations and data sheets for the media to be stirred. Inerting may be necessary or conductive additives have to be added. These measures are to be carried out by the operator.
- The drive is mechanically designed for pass-through operation. Furthermore, it can be operated in dry or idle mode. Please note the operator guidelines, national regulations and data sheets for the media to be stirred. When using the agitator in pass-through operation, the risk of ignition of mechanically generated sparks must be considered and safely avoided.
- When dimensioning the shaft, ensure that there is sufficient distance from the container wall to prevent the shaft from coming into contact with the container.
- Make sure that no heat can arise from a chemical reaction between two media.
- Impact processes involving rust and light metals with their alloys can form ignitable sparks. Therefore, do not use tools with corroded surfaces.
- When selecting materials and fastening accessories, take corrosion, wear and other interactions into account.
- Further hazards when using the drive for an agitator must be determined by the manufacturer. The resulting ignition hazards must be reduced by taking appropriate explosion protection measures.
- A limited temperature range of  $-10\text{ °C} \leq T_a \leq +40\text{ °C}$  applies.

## 6. Transport and storage

The drive is delivered in cardboard packaging and is protected by it. Make sure that it does not get damaged. On receipt, check the drive for completeness and transport damage. Note any obvious transport damage on the shipping documents and have this acknowledged by the



carrier. In the event of hidden transport damage, please contact us with the relevant documentation of the damage and the device number. If the drive is obviously damaged, it must not be assembled, installed or put into operation.

Please note the following conditions for storage:

- Store in a dry place
- Protect from shocks
- Storage temperature: 10 ° C to 40 ° C

After long periods of storage, check the condition of all parts before use:

- Corrosion on drive and components
- Embrittlement, hardening, cracking of seals
- Penetration of moisture and dirt

Before commissioning, completely remove storage residues or replace damaged parts. Please note the information under „4. Safety and operator obligations“.

## 7. Notes on compressed air

The function and service life of the drives depend to a large extent on the nature and pressure of the compressed air supplied. Too much moisture or dirt particles as well as too high pressure lead to rapid wear of the drive and even to unusability. A high proportion of condensate in the compressed air causes rust to form in the drive. Therefore, observe the following information with regard to the compressed air used in order to ensure a long service life:

- According to DIN ISO 8573-1, the drives are only approved for operation with compressed air of quality class 3 and higher, which was generated and prepared outside of an Ex area.
- The use of liquids and gases as drive medium is not part of the intended use and must be approved by the manufacturer.
- Make sure that all ports and connections are properly secured.
- Use the required hose diameter for the supply air of the drive according to the supply air throttle valve.
- The main air lines require a slight gradient of at least 1% in the direction of flow so that condensation water can be drained at the lowest point through a valve (manually or automatically).
- If the main line is horizontal, do not connect branches at the top and not at the lowest point if the main line is vertical. This prevents condensation water standing in the main line from flowing into the branch.
- Use maintenance units with an air filter with a maximum filtration degree of 5 $\mu$ .
- Install the maintenance unit with at least a G 3/4" air connection in the immediate vicinity of the drive.
- The air filter requires regular maintenance, whereby the stored condensation water must be drained off and the filter cleaned.
- The drive achieves its optimum performance at 6 bar (85psi). If the pressure in the compressed

sed air network is more than 6 bar, a compressed air regulator must be used.

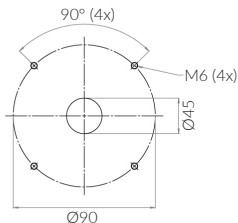
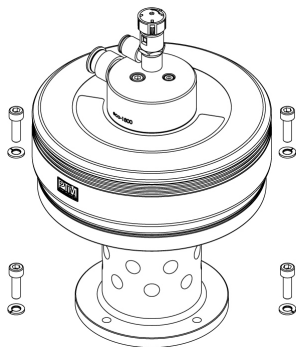
- Use the exhaust air hose supplied and lay it down with a slope. The exhaust air hose must not be closed. Do not use silencers.

## 8. Installation and commissioning

- Before installation, clean the cover to ensure that the drive is securely positioned.
- Place the drive on the lid / the housing / the drum lid lifting device, align it centrally and fix it with four or eight screws, respectively.
- Close the throttle check valve before connecting the compressed air.
- Now connect the supply air.
- Fasten the exhaust air hose with a downward slope.
- You can now switch on the compressed air.
- Set the speed using the throttle check valve.



The agitator drive must be integrated into the equipotential bonding!



## 9. Maintenance and repair



Before any maintenance or repair work, the drive must be disconnected from the compressed air supply in order to prevent the drive from starting up unintentionally.



Changes of any kind to the drive and its attachments during maintenance or repair are not permitted and will invalidate the liability for defects.

### 9.1. General

The operator must ensure that the technical rules for operational safety as well as the operational safety ordinance and the requirements of the respective countries are complied with when repairing drives. The operator guidelines must be observed in potentially explosive areas.

- The drives must be serviced and cleaned regularly. The intervals are determined by the operator in accordance with the environmental stresses on site.
- Maintenance may only be carried out by specialist personnel who have been specially trained or who exchange components according to the specifications of the PTM service department.
- The exchange of components may only take place with original spare parts. This also applies to the lubricants and auxiliary materials used. When used in Ex areas, only original spare parts that are approved for use in Ex areas may be used.
- After maintenance and / or servicing, all barriers and notices that were removed must be put back in their original position.
- Dust deposits in gaps in moving parts can heat up. It is therefore necessary to regularly clean the drive and the gaps on rotating parts.
- Wear parts include pistons, ball bearings, seals and shaft seals

### 9.2. Pistons

The pistons of the drive are wearing parts. Regular inspection of the drive and its pistons is very important for a long service life. If the drive noise changes or increases, or if there is a loss of power, we recommend an immediate assessment.

Apart from that, we generally recommend the following assessment periods:

The drive runs year-round in three shifts:	every 6 months
Drive runs year-round in two-shift operation:	every 12 months
The drive runs year-round in one-shift operation:	every 24 months
In irregular operation in left / right rotation:	every 48 months

If the inspection reveals wear on the pistons, the pistons should be replaced before major damage occurs.

### 9.3. Ball bearings

When used in potentially explosive areas, the ball bearings must be replaced after a running time of 35,000 hours at the latest.

#### 9.4. Seals and shaft seals

Seals and shaft seals are wearing parts. The factors that have an unfavorable influence on wear are the operating hours and the speed. Other factors that promote wear include environmental conditions such as temperature, dust, solvents and vapors.

The operator is responsible for assessing wear. If necessary, the seals and shaft seals must be replaced.

### 10. Technical data

Compressed air connection	2.0 bar - 6.0 bar	
Ex marking Gas	II 1/2 G Ex h IIC T5 Ga / Gb	
Ex marking dust	II 1/2 D Ex h IIIC T100 ° C Da / Db	
CE marking	CE 0408	
Ambient temperature	-10 ° C to + 40 ° C	
Power (at 6 bar, 150 l / min)	50W to 250W	(depending on size)
Air consumption (at max. load)	25 l / min to 500 l / min	(depending on size)

### 11. Rotation speed

Drive without transmission:	0 rpm - 300rpm
Drives with 1: 2 transmission:	0 rpm - 600 rpm
Drives with 3: 1 transmission:	0 rpm - 100 rpm
Drives with 9: 1 transmission:	0 rpm - 33 rpm

The specified speed ranges are within a tolerance of +/- 10%.

### 12. Elimination of malfunctions

If the drive does not provide the required performance, this can be due to the following reasons:

- The air pressure is not sufficient. Ensure an air pressure of 2-6 bar / 85 psi.
- The air pressure fluctuates too much.
- The necessary amount of air is not made available.
- The air filter of the maintenance unit is dirty and needs to be cleaned.
- Compressed air escapes through leaks between the maintenance unit and the drive.
- There are cross-sectional constrictions in the system.

If none of the errors mentioned are found, send the drive to the manufacturer for inspection as noted under „3. Manufacturer and customer service“.

Repairs may only be carried out by qualified personnel who have been specially trained or who replace components according to the specifications of the PTM service department.



Changes of any kind to the drive and its attachments are not permitted and will invalidate the liability for defects.

## 13. Disposal

Please dispose of the packaging and used parts in accordance with the regulations of the country in which the drive is installed.

## 14. Explosion protection

### 14.1. Basics

When using the drive in potentially explosive areas, the following EU directive is decisive for the development of the product:

European explosion protection guideline: 2014/34/EU

The identification of the non-electrical equipment is:

II 1/2 G Ex h IIC T5 Ga/Gb

II 1/2 D Ex h IIIC T100°C Da/Db

CE 0408

### 14.2. Regulations for explosion protection

The operator must observe a number of regulations for equipment in potentially explosive areas. The following list gives an overview of the essential regulations.

The following apply within the European Union:

- Directive 1999/92 / EC on minimum requirements for improving the protection of health and safety of workers who may be endangered by explosive atmospheres
- DIN EN 60079-0 on electrical equipment for potentially explosive areas - General provisions
- DIN EN 60079-10 on potentially explosive areas - Part 10-1: Classification of potentially explosive areas
- DIN EN 60079-14 on electrical equipment for areas with a risk of gas explosion - Part 14: Electrical systems in areas with a risk of explosion
- DIN EN 1127-1 on explosive atmospheres - Explosion protection - Part 1: Fundamentals and methodology
- DIN EN ISO 80079-36 Non-electrical devices for use in potentially explosive areas -

Part 1: Basics and requirements

- DIN EN ISO 80079-37 Non-electrical devices for use in potentially explosive areas - Part 5: Protection through structural safety "c"



Additional national and international regulations and guideline may also apply. e.g. TRGS 727 Technical Rules for Hazardous Substances "Avoidance of ignition hazards due to electrostatic charge".

### 14.3. Zone classification for potentially explosive areas

Hazardous areas are areas in which, due to the local and operational conditions, an explosive atmosphere can occur in dangerous quantities. They are divided into several zones.

The following applies to areas at risk of explosion due to flammable gases, vapors or mists:

- Zone 0/20 - includes areas in which a dangerous, explosive atmosphere is present continuously or for a long time.
- Zone 1/21 - includes areas in which a dangerous, explosive atmosphere is to be expected occasionally.
- Zone 2/22 - includes areas in which it is to be expected that a dangerous, explosive atmosphere occurs only rarely and then only for a short time.



**TÜV**  
AUSTRIA

## Zertifikat - Certificate

- (1) **EU-Baumusterprüfbescheinigung**  
gemäß Richtlinie 2014/34/EU, Anhang III, Ziffer 6
- (2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung  
in explosionsgefährdeten Bereichen - **Richtlinie 2014/34/EU**



- (3) EU-Baumusterprüfbescheinigungsnr. **TÜV-A 20ATEX01113 X**
- (4) Gerät:  
Typen: **Rührwerksantrieb mit Zonentrennflansch**  
**eco-Seal LIGHT eco-Seal PRO**  
**eco-Seal INOX eDRIVE**
- (5) Hersteller: **PTM mechatronics GmbH**
- (6) Anschrift: **Gewerbepark 1**  
**D-82281 Egenhofen**
- (7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Baumusterprüfbescheinigung festgelegt.
- (8) TÜV AUSTRIA SERVICES GMBH bescheinigt als notifizierte Stelle Nr. 0408 nach Artikel 17 der Richtlinie des Rates der Europäischen Gemeinschaften vom 26. Februar 2014 (2014/34/EU) die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.
- Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht TÜV-A 2020-TAD-000101 festgelegt.
- (9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit
- EN ISO 80079-36:2016 EN ISO 80079-37:2016**
- mit vorbehaltlicher Berücksichtigung der angeführten Anforderungen in Punkt 18 der Anlage.
- (10) Falls das Zeichen "X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.
- (11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konstruktion, Überprüfung und Tests des spezifizierten Gerätes oder Schutzsystems in Übereinstimmung mit Richtlinie 2014/34/EU. Weitere Anforderungen der Richtlinie können für das Herstellungsverfahren und die Inverkehrbringung dieses Gerätes oder Schutzsystems gelten. Diese sind von vorliegender Bescheinigung nicht abgedeckt.
- (12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:  
Siehe (15)

Wien 23.11.2020  
Ort Datum  
Place Date

Michael Reuschel  
Notifizierte Stelle 0408  
Notified Body 0408  
TÜV AUSTRIA SERVICES GMBH

Online verification



FM INE-EXS-ExG-0200d  
Rev. 07  
ZTFK\_TUV-A\_20ATEX0113\_X.docx  
Seite 1/4

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GMBH gestattet

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to the approval by TÜV AUSTRIA SERVICES  
GMBH“

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Tel.: + 49 711 722 336-18  
E-Mail: [explosionsschutz@tuv.at](mailto:explosionsschutz@tuv.at)  
Web: <http://www.tuv.at>



## Certificate

**(1) EU type examination certificate**

in accordance with Directive 2014/34 / EU, Annex III, Section 6

(2) Devices and protective systems for the intended use in potentially explosive areas

- Directive 2014 / 34EU.

(3) EU type examination certificate number **TÜV-A 20ATEX 01113 X**

(4) Device: Agitator drive with zone separation flange

Types: eco-Seal LIGHT eco-Seal PRO  
eco-Seal INOX eDRIVE

(5) Manufacturer: PTM machatronics GmbH

(6) Address: Gewerbepark 1

D-82281 Egenhofen

(7) The design of this device and its various permissible versions are specified in the appendix to this type-examination certificate.

(8) TÜV AUSTRIA SERVICES GMBH as a notified body No. 0408 according to Article 17 of the Directive of the Council of the European Community of February 26, 2014 (2014 / 34/ EU), certifies the fulfillment of the basic safety and health requirements for the design and construction of devices and protective systems for their intended use in potentially explosive areas according to Annex II of the Directive.

The results of the test are defined in the confidential test report TUV-A 2020-TAD-000101.

(9) The basic health and safety requirements are met by:

**EN ISO 800 79- 36: 2016 EN ISO 80079-37: 2016**

subject to consideration of the requirements listed in point 18 of the annex.

(10) If the sign "X" stands behind the certificate number, this indicates special conditions for the safe use of the device, named in the annex to this certificate.

(11) This EU-Type Examination Certificate relates only to the construction, examination and testing of the specified equipment or protective system in accordance with Directive 2014/34 / EU. Further requirements of the directive may apply to the manufacturing process and the placing on the market of this device or protective system. These are not covered by this certificate!

(12) The identification of the device must contain the following information: see (15)



## EU- Konformitätserklärung

### EU-Declaration of Conformity

Hersteller:	PTM mechatronics GmbH
Manufacturer:	Gewerbepark 1 D-82281 Egenhofen
Produktbezeichnung:	Rührwerke eco-Seal LIGHT
Name of Product:	Rührwerke eco-Seal PRO eco-Seal INOX
Gerät, Produktbeschreibung:	Rührwerksantrieb mit Zonentrennfansch
Description of Product:	

Das Konformitätsbewertungsverfahren gemäß RL 2014/34/EU wurde unter Beteiligung der folgenden benannten Stelle durchgeführt:

TÜV Austria Services GmbH  
Deutschstraße 10  
1230 Wien/Österreich  
Identifikations-Nr.: 0408

Baumusterprüfung nach Anhang III RL 2014/34/EU. Baumusterprüfbescheinigung: **TÜV-A 20ATEX01113 X**

GeräteKennzeichnung:  
Device Marking:



II 1/2 G Ex h IIC T5 Ga/Gb



II 1/2 D Ex h IIIC T100°C Da/Db

Die Konformitätserklärung bezieht sich nur auf die Konzeption und Fertigung der oben beschriebenen Geräte gemäß EU-Richtlinie 2014/34/EU in Übereinstimmung mit den harmonisierten Normen EN ISO 80079-36:2016 und EN ISO 80079-37:2016 "konstruktive Sicherheit".

Die zugehörige Bedienungsanleitung enthält wichtige sicherheitstechnische Hinweise und Vorschriften für die Platzierung und Inbetriebnahme der ECO-Rührwerke gem. RL 2014/34/EU.

Folgende harmonisierte Normen und Spezifikationen wurden bei der Entwicklung und Fertigung angewandt:

**EN 292- 1 | EN 292- 2 | DIN EN 1953:2010-09**

**ISO 13849-1:2006**

**ZH 1/406 | BGV D25 | BGV D15**

**DGUV Sicherheitsanforderungen für Stativ- und Hängerrührwerke**

**Maschinenrichtlinie**

**RL 2006/42/EG, Anhang II, 1.A**

**ATEX-Herstellerrichtlinie**

**RL 2014/34/EU**

Folgende harmonisierte Normen wurden bei der Entwicklung und Fertigung angewandt:

**DIN EN ISO/IEC 80079-34:2017**

**Anwendung von Qualitätsmanagementsystemen für die  
Herstellung von Ex-Produkten**

**DIN EN ISO 80079-36:2015**

**Teil 36: nichtelektrische Geräte für den Einsatz in explosionsfähigen  
Atmosphären „konstruktive Sicherheit c“**

**DIN EN ISO 80079-37:2015**

**Teil 37: nichtelektrische Geräte für den Einsatz in explosionsfähigen  
Atmosphären „konstruktive Sicherheit c“**

Egenhofen, den 19.05.2021

Carsten Angermeyer  
Geschäftsführer

Translation EU Declaration of Conformity  
EU Declaration of Conformity

Manufacturer: PTM mechatronics GmbH  
Gewerbepark 1  
D-82281 Egenhofen

Name of Product: Agitator eco-Seal LIGHT  
Agitator eco-Seal PRO  
eco-Seal INOX

Description of Product: Agitator drive with zone separation flange

The conformity assessment procedure according to RL 2014/34 / EU was carried out with the participation of the following notified body:

TÜV Austria Services GmbH  
Deutschstraße 10  
1230 Vienna/Austria  
Identification number: 0408

Type examination according to Annex III RL 2014 / 34 / EU. Type examination certificate:

**TÜV-A 20ATEX01113 X**

Device Marking:

**Ex II 1/2 G Ex h IIC T5 Ga/Gb**  
**Ex II 1/2 D Ex h IIIC T100°C Da/Db**

The declaration of conformity only relates to the design and manufacture of the devices described above according to EU Directive 2014/34 / EU in accordance with the harmonized standards EN ISO 80079-36: 2016 and EN ISO 80079-37: 2016 "constructive safety".

The associated operating instructions contain important safety information and regulations for the placement and commissioning of the ECO agitators according to RL 2014/34 / EU.

The following harmonized standards and specifications were used during development and production:

**EN 292- 1 | EN 292- 2 | DIN EN 1953:2010-09**

**ISO 13849-1:2006**

**ZH 1/406 | BGV D25 | BGV D15**

**DGUV safety requirements for tripod and suspended agitators**

**Machinery Directive**

**RL 2006/42 / EG, Appendix II, 1.A**

**ATEX manufacturer directive**

**RL 2014/34 / EU**

The following harmonized standards and specifications were used during development and production:

DIN EN ISO/IEC 80079-34:2017

Application of quality management

systems for the manufacture of Ex-products

DIN EN ISO 80079-36:2015

Part 36: non-electrical devices for use in explosive atmospheres „constructive safety c“

DIN EN ISO 80079-37:2015

Part 37: non-electrical devices for use in explosive atmospheres „constructive safety c“

Egenhofen, 19.05.2021

Carsten Angermeyer

CEO



Antriebs- und Rührwerktechnik für  
Drive and stirring technology for

FOOD | PHARMA | KOSMETIK | CHEMIE | AUTOMATION  
FOOD | PHARMA | COSMETICS | CHEMICALS | AUTOMATION

**PTM**  
mechatronics

## Rührwerkstechnik Stirring technology

Energieeffiziente und leistungsstarke Rührwerke für alle Behältergrößen.  
Energy-efficient and high-performance agitators for all container sizes.

<b>RÜHRWERKSANTRIEBE</b> AGITATOR DRIVES			    	
	<b>FASSRÜHRWERKE</b> DRUM AGITATORS			
	<b>CONTAINERRÜHRWERKE</b> CONTAINER AGITATORS			
	<b>STATIVRÜHRWERKE</b> STAND AGITATORS			
	<b>EDELSTAHLRÜHRWERKE</b> STAINLESS-STEEL AGITATORS			
	<b>LABORRÜHRWERKE</b> LABORATORY AGITATORS			
<b>ZWEIHANDRÜHRWERKE</b> HAND-HELD AGITATORS				

## Antriebstechnik Drive technology

Energieeffiziente und leistungsstarke Motoren.  
Energy-efficient and high-performance motors.

   				<b>ATEX-ZERTIFIZIERT</b> ATEX-CERTIFIED  <b>REINRAUM</b> CLEANROOM  <b>EDELSTAHL</b> STAINLESS-STEEL  <b>IP68 WASSERDICHT</b> IP68 WATERPROOF  <b>MAGNETFELDFREI</b> WITHOUT MAGNETIC FIELDS	
					



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