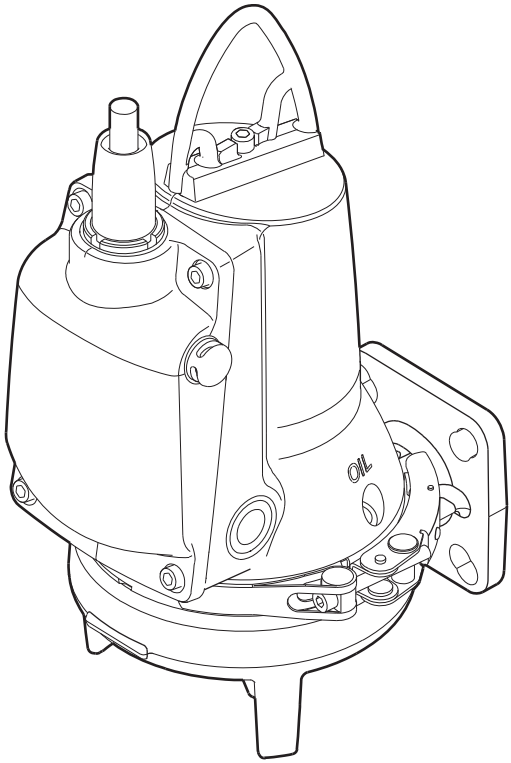
SEG AUTO*ADAPT*

Installation and operating instructions

GB D F I E P GR NL S FIN DK
PL RU H SI HR SER RO BG CZ SK TR
EE LT LV



(GB) Declaration of Conformity

We, Grundfos, declare under our sole responsibility that the products SEG AUTO*ADAPT*, to which this declaration relates, are in conformity with these Council directives on the approximation of the laws of the EC member states:

- Machinery Directive (2006/42/EC).
  Standards used: EN 809: 1998 and EN 60204-1: 2006.
- Low Voltage Directive (2006/95/EC).
  Standards used: EN 60335-1: 2002 and EN 60335-2-41: 2003.
  Applicable when the rated power is lower than 2.2 kW.
- EMC Directive (2004/108/EC).
  Standards used: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 and EN 55014-2: 1997.
- Construction Products Directive (89/106/EEC).
  Standards used: EN 12050-1: 2001 and EN 12050-2: 2000.
- ATEX Directive (94/9/EC).
  Standards used: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 and EN 13463-6: 2005.
  Applies only to products intended for use in potentially explosive environments, Ex II 2G, equipped with the separate ATEX approval plate and EC-type examination certificate. Further information, see below.

(D) Konformitätserklärung

Wir, Grundfos, erklären in alleiniger Verantwortung, dass die Produkte SEG AUTO*ADAPT*, auf die sich diese Erklärung bezieht, mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EU-Mitgliedsstaaten übereinstimmen:

- Maschinenrichtlinie (2006/42/EG).
  Normen, die verwendet wurden: EN 809: 1998 und EN 60204-1: 2006.
- Niederspannungsrichtlinie (2006/95/EG).
  Normen, die verwendet wurden: EN 60335-1: 2002 und EN 60335-2-41: 2003. Nur anwendbar für Nennleistungen kleiner 2,2 kW.
- EMV-Richtlinie (2004/108/EG).
  Normen, die verwendet wurden: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 und EN 55014-2: 1997.
- Bauproduktenrichtlinie (89/106/EWG).
  Normen, die verwendet wurden: EN 12050-1: 2001 und EN 12050-2: 2000.
- ATEX-Richtlinie (94/9/EG).
  Normen, die verwendet wurden: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 und EN 13463-6: 2005.
  Gilt nur für Produkte, die für den Gebrauch in potentiell explosiver Umgebung nach Ex II 2G bestimmt und mit einem separaten ATEX-Typenschild und einem EG-Prüfzeugnis ausgestattet sind. Weitere Informationen, siehe unten.

(F) Déclaration de Conformité

Nous, Grundfos, déclarons sous notre seule responsabilité, que les produits SEG AUTO*ADAPT*, auxquels se réfère cette déclaration, sont conformes aux Directives du Conseil concernant le rapprochement des législations des Etats membres CE relatives aux normes énoncées ci-dessous :

- Directive Machines (2006/42/CE).
  Normes utilisées : EN 809 : 1998 et EN 60204-1 : 2006.
- Directive Basse Tension (2006/95/CE).
  Normes utilisées : EN 60335-1 : 2002 et EN 60335-2-41 : 2003.
  Applicable lorsque la puissance nominale est inférieure à 2,2 kW.
- Directive Compatibilité Electromagnétique CEM (2004/108/CE).
  Normes utilisées : EN 61000-3-2 : 2006, EN 61000-3-3 : 1995, EN 55014-1 : 2006 et EN 55014-2 : 1997.
- Directive sur les Produits de Construction (89/106/CEE)
  Normes utilisées : EN 12050-1 : 2001 et EN 12050-2 : 2000.
- Directive ATEX (94/9/CE).
  Normes utilisées : EN 60079-0 : 2006, EN 60079-1 : 2007, EN 13463-1 : 2009, EN 13463-5 : 2003 et EN 13463-6 : 2005.
  S'applique uniquement aux produits utilisés dans des environnements potentiellement explosifs, Ex II 2G, équipés d'une plaque séparée avec norme ATEX et d'un certificat d'examination type CE. Pour plus d'informations, voir ci-après.

(I) Dichiarazione di Conformità

Grundfos dichiara sotto la sua esclusiva responsabilità che i prodotti SEG AUTO*ADAPT*, ai quali si riferisce questa dichiarazione, sono conformi alle seguenti direttive del Consiglio riguardanti il riavvicinamento delle legislazioni degli Stati membri CE:

- Direttiva Macchine (2006/42/CE).
  Norme applicate: EN 809: 1998 e EN 60204-1: 2006.
- Direttiva Bassa Tensione (2006/95/CE).
  Norme applicate: EN 60335-1: 2002 e EN 60335-2-41: 2003.
  Applicabile quando la corrente nominale è inferiore a 2,2 kW.
- Direttiva EMC (2004/108/CE).
  Norme applicate: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 e EN 55014-2: 1997.
- Direttiva Prodotti da Costruzione (89/106/CEE)
  Norme applicate: EN 12050-1: 2001 e EN 12050-2: 2000.
- Direttiva ATEX (94/9/CE).
  Norme applicate: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 e EN 13463-6: 2005.
  Si riferisce solo ai prodotti per uso in ambienti potenzialmente esplosivi Ex II 2G, con targa di approvazone ATEX a parte e certificato tipo CE. Per ulteriori informazioni, vedere oltre.

(E) Declaración de Conformidad

Nosotros, Grundfos, declaramos bajo nuestra entera responsabilidad que los productos SEG AUTO*ADAPT*, a los cuales se refiere esta declaración, están conformes con las Directivas del Consejo en la aproximación de las leyes de las Estados Miembros del EM:

- Directiva de Maquinaria (2006/42/CE).
  Normas aplicadas: EN 809: 1998 y EN 60204-1: 2006.
- Directiva de Baja Tensión (2006/95/CE).
  Normas aplicadas: EN 60335-1: 2002 y EN 60335-2-41: 2003.
  Aplicable cuando el índice de potencia es inferior a 2,2 kW.
- Directiva EMC (2004/108/CE).
  Normas aplicadas: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 y EN 55014-2: 1997.
- Directiva de Productos de Construcción (89/106/CEE).
  Normas aplicadas: EN 12050-1: 2001 y EN 12050-2: 2000.
- Directiva ATEX (94/9/CE).
  Normas aplicadas: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 y EN 13463-6: 2005.
  Se aplica sólo a productos concebidos para su utilización en entornos potencialmente explosivos, Ex II 2G, equipados con una placa independiente de homologación ATEX y certificado de prueba tipo CE. Para información adicional, ver más abajo.

(P) Declaração de Conformidade

A Grundfos declara sob sua única responsabilidade que os produtos SEG AUTO*ADAPT*, aos quais diz respeito esta declaração, estão em conformidade com as seguintes Directivas do Conselho sobre a aproximação das legislações dos Estados Membros da CE:

- Directiva Máquinas (2006/42/CE).
  Normas utilizadas: EN 809: 1998 e EN 60204-1: 2006.
- Directiva Baixa Tensão (2006/95/CE).
  Normas utilizadas: EN 60335-1: 2002 e EN 60335-2-41: 2003.
  Aplicável quando a potência nominal é inferior a 2,2 kW.
- Directiva EMC (compatibilidade electromagnética) (2004/108/CE).
  Normas utilizadas: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 e EN 55014-2: 1997.
- Directiva Produtos Construção (89/106/CEE).
  Normas utilizadas: EN 12050-1: 2001 e EN 12050-2: 2000.
- Directiva ATEX (94/9/CE).
  Normas utilizadas: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 e EN 13463-6: 2005.
  Aplica-se apenas a produtos cuja utilização é em ambientes potencialmente explosivos, Ex II 2G, equipados com uma chapa de aprovação ATEX e certificado tipo CE. Para mais informações consulte abaixo.

Certificate number

KEMA 09ATEX0146X

Notified body: KEMA Quality B.V. No 0344, Utrechtseweg 310, 6812 AR Arnhem, Netherlands.
Manufacturer: GRUNDFOS Management A/S, Poul Due Jensens Vej 7, DK-8850 Bjerringbro, Denmark.

(GR) Δήλωση Συμμόρφωσης

Εμείς, η Grundfos, δηλώνουμε με αποκλειστικά δική μας ευθύνη ότι τα προϊόντα SEG AUTO*ADAPT* στα οποία αναφέρεται η παρούσα δήλωση, συμμορφώνονται με τις εξής Οδηγίες του Συμβουλίου περί προσέγγισης των νομοθεσιών των κρατών μελών της ΕΕ:

– Οδηγία για μηχανήματα (2006/42/EC).
Πρότυπα που χρησιμοποιήθηκαν: EN 809: 1998 και EN 60204-1: 2006.
– Οδηγία χαμηλής τάσης (2006/95/EC).
Πρότυπα που χρησιμοποιήθηκαν: EN 60335-1: 2002 και EN 60335-2-41: 2003. Ισχύει για ονομαστική ισχύ μικρότερη από 2,2 kW.
– Οδηγία Ηλεκτρομαγνητικής Συμβατότητας (EMC) (2004/108/EC).
Πρότυπα που χρησιμοποιήθηκαν: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 και EN 55014-2: 1997.
– Οδηγία Παραγωγής Προϊόντων (89/106/EEC).
Πρότυπα που χρησιμοποιήθηκαν: EN 12050-1: 2001 και EN 12050-2: 2000.
– Οδηγία ATEX (94/9/EC).
Πρότυπα που χρησιμοποιήθηκαν: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 και EN 13463-6: 2005.
Ισχύει μόνο για προϊόντα που απευθύνονται για χρήση σε δυνητικά εκρηκτικά περιβάλλοντα, Ex II 2G, εφοδιασμένα με τη χωριστή πινακίδα έγκρισης ATEX και πιστοποιητικό εξέτασης τύπου EC.
Για περισσότερες πληροφορίες, βλέπε κατωτέρω.

(S) Försäkran om överensstämmelse

Vi, Grundfos, försäkrar under ansvar att produkterna SEG AUTO*ADAPT*, som omfattas av denna försäkran, är i överensstämmelse med rådets direktiv om inbördes närmande till EU-medlemsstaternas lagstiftning, avseende:

– Maskindirektivet (2006/42/EG).
Tillämpade standarder: EN 809: 1998 och EN 60204-1: 2006.
– Lågspänningsdirektivet (2006/95/EG).
Tillämpade standarder: EN 60335-1: 2002 och EN 60335-2-41: 2003. Kan användas när märkeffekten är lägre än 2,2 kW.
– EMC-direktivet (2004/108/EG).
Tillämpade standarder: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 och EN 55014-2: 1997.
– Byggproduktdirektivet (89/106/EEG).
Tillämpade standarder: EN 12050-1: 2001 och EN 12050-2: 2000.
– ATEX-direktivet (94/9/EG).
Tillämpade standarder: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 och EN 13463-6: 2005.
Gäller endast produkter avsedda att användas i exposionsfarlig miljö, Ex II 2G, utrustade med separat ATEX-godkännandeskylt och EG-typkontrollintyg. För ytterligare information, se nedan.

(DK) Overensstemmelseserklæring

Vi, Grundfos, erklærer under ansvar at produkterne SEG AUTO*ADAPT* som denne erklæring omhandler, er i overensstemmelse med disse af Rådets direktiver om indbyrdes tilnærmelse til EF-medlemsstaternes lovgivning:

– Maskindirektivet (2006/42/EF).
Anvendte standarder: EN 809: 1998 og EN 60204-1: 2006.
– Lavspændingsdirektivet (2006/95/EF).
Anvendte standarder: EN 60335-1: 2002 og EN 60335-2-41: 2003. Gælder når mærkeeffekten er lavere end 2,2 kW.
– EMC-direktivet (2004/108/EF).
Anvendte standarder: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 og EN 55014-2: 1997.
– Byggevaredirektivet (89/106/EØF).
Anvendte standarder: EN 12050-1: 2001 og EN 12050-2: 2000.
– ATEX-direktivet (94/9/EF).
Anvendte standarder: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 og EN 13463-6: 2005.
Gælder kun produkter til eksplosionsfarlige omgivelser, Ex II 2G, med et separat ATEX-godkendelsesskilt og EF-typeprøvnings-certifikat. Yderligere oplysninger, se nedenfor.

(NL) Overeenkomstigheidsverklaring

Wij, Grundfos, verklaren geheel onder eigen verantwoordelijkheid dat de producten SEG AUTO*ADAPT* waarop deze verklaring betrekking heeft, in overeenstemming zijn met de Richtlijnen van de Raad in zake de onderlinge aanpassing van de wetgeving van de EG Lidstaten betreffende:

– Machine Richtlijn (2006/42/EC).
Gebruikte normen: EN 809: 1998 en EN 60204-1: 2006.
– Laagspannings Richtlijn (2006/95/EC).
Gebruikte normen: EN 60335-1: 2002 en EN 60335-2-41: 2003. Van toepassing wanneer het opgenomen vermogen lager is dan 2,2 kW.
– EMC Richtlijn (2004/108/EC).
Gebruikte normen: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 en EN 55014-2: 1997.
– Bouwproducten Richtlijn (89/106/EEC).
Gebruikte normen: EN 12050-1: 2001 en EN 12050-2: 2000.
– ATEX Richtlijn (94/9/EC).
Gebruikte normen: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 en EN 13463-6: 2005.
Is alleen van toepassing op pompen welke gebruikt worden in een explosie gevaarlijke omgeving, Ex II 2G, met een afzonderlijke ATEX-goedkeurings plaatje en EG-type onderzoekscertificaat.
Voor verdere informatie, zie onderstaand.

(FIN) Vaatimustenmukaisuusvakuutus

Me, Grundfos, vakuutamme omalla vastuullamme, että tuotteet SEG AUTO*ADAPT*, joita tämä vakuutus koskee, ovat EY:n jäsenvaltioiden lainsäädännön yhdenmukaistamiseen tähtäävien Euroopan neuvoston direktiivien vaatimusten mukaisia seuraavasti:

– Konedirektiivi (2006/42/EY).
Sovellettavat standardit: EN 809: 1998 ja EN 60204-1: 2006.
– Pienjännitedirektiivi (2006/95/EY).
Sovellettavat standardit: EN 60335-1: 2002 ja EN 60335-2-41: 2003. Koskee alle 2,2 kW nimellistehoa.
– EMC-direktiivi (2004/108/EY).
Sovellettavat standardit: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 ja EN 55014-2: 1997.
– Rakennustuotedirektiivi (89/106/ETY).
Sovellettavat standardit: EN 12050-1: 2001 ja EN 12050-2: 2000.
– ATEX-direktiivi (94/9/EY).
Sovellettavat standardit: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 ja EN 13463-6: 2005.
Koskee vain tuotteita, jotka on tarkoitettu käytettäviksi mahdollisesti räjähdysvaarallisissa ympäristöissä, Ex II 2G, varustettuina erillisellä ATEX-hyväksyntäkilvellä ja EY-tyyppitarkastustodistuksella.
Katso lisätietoja jäljempänä.

(PL) Deklaracja zgodności

My, Grundfos, oświadczamy z pełną odpowiedzialnością, że nasze wyroby SEG AUTO*ADAPT*, których deklaracja niniejsza dotyczy, są zgodne z następującymi wytycznymi Rady d/s ujednolicenia przepisów prawnych krajów członkowskich WE:

– Dyrektywa Maszynowa (2006/42/WE).
Zastosowane normy: EN 809: 1998 oraz EN 60204-1: 2006.
– Dyrektywa Niskonapięciowa (LVD) (2006/95/WE).
Zastosowane normy: EN 60335-1: 2002 oraz EN 60335-2-41: 2003. Mają zastosowanie w przypadku, gdy moc znamionowa jest mniejsza niż 2,2 kW.
– Dyrektywa EMC (2004/108/WE).
Zastosowane normy: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 oraz EN 55014-2: 1997.
– Dyrektywa Wyrobów Budowlanych (89/106/WE).
Zastosowane normy: EN 12050-1: 2001 oraz EN 12050-2: 2000.
– Dyrektywa ATEX (94/9/WE).
Zastosowane normy: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 oraz EN 13463-6: 2005.
Dotyczy tylko produktów przeznaczonych do pracy w środowisku potencjalnie zagrożonym wybuchem, Ex II 2G, wyposażonych w odzielną tabliczkę znamionową ATEX i certyfikat typu EG (examination certyficate). Więcej informacji na ten temat, patrz poniżej.

Certificate number

KEMA 09ATEX0146X

Notified body: KEMA Quality B.V. No 0344, Utrechtseweg 310, 6812 AR Arnhem, Netherlands.
Manufacturer: GRUNDFOS Management A/S, Poul Due Jensens Vej 7, DK-8850 Bjerringbro, Denmark.

(RU) Декларация о соответствии

Мы, компания Grundfos, со всей ответственностью заявляем, что изделия SEG AUTO*ADAPT*, к которым относится настоящая декларация, соответствуют следующим Директивам Совета Евросоюза об унификации законодательных предписаний стран-членов ЕС:

– Механические устройства (2006/42/EC).
  Применявшиеся стандарты: EN 809: 1998 и EN 60204-1: 2006.
– Низковольтное оборудование (2006/95/EC).
  Применявшиеся стандарты: EN 60335-1: 2002 и EN 60335-2-41: 2003. Применимо, если номинальная мощность меньше 2,2 кВт.
– Электромагнитная совместимость (2004/108/EC).
  Применявшиеся стандарты: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 и EN 55014-2: 1997.
– Директива на строительные материалы и конструкции (89/106/ЕЭС).
  Применявшиеся стандарты: EN 12050-1: 2001 и EN 12050-2: 2000.
– Директива ATEX (94/9/EC).
  Применявшиеся стандарты: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 и EN 13463-6: 2005.
  Действительно только для изделий, разрешённых для использования в потенциально взрывоопасных условиях, Ex II 2G, с маркировкой ATEX на фирменной табличке и Сертификатом (свидетельством) типовой проверки ЕС.
  Подробная информация представлена ниже.

(H) Megfelelőségi nyilatkozat

Mi, a Grundfos, egyedüli felelősséggel kijelentjük, hogy a SEG AUTO*ADAPT* termékek, amelyekre jelen nyilatkozik vonatkozik, megfelelnek az Európai Unió tagállamainak jogi irányelveit összehangoló tanács alábbi előírásainak:

– Gépek (2006/42/EK).
  Alkalmazott szabványok: EN 809: 1998 és EN 60204-1: 2006.
– Kisfeszültségű Direktíva (2006/95/EK).
  Alkalmazott szabványok: EN 60335-1: 2002 és EN 60335-2-41: 2003. 2,2 kW alatti névleges teljesítmény alatt érvényes.
– EMC Direktíva (2004/108/EK).
  Alkalmazott szabványok: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 és EN 55014-2: 1997.
– Építőipari Termék Direktíva (89/106/EGK).
  Alkalmazott szabványok: EN 12050-1: 2001 és EN 12050-2: 2000.
– ATEX Direktíva (94/9/EK).
  Alkalmazott szabványok: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 és EN 13463-6: 2005.
  Azon szivattyú típusokra vonatkozik, melyek potenciánlisan robbanásveszélyes környezetben telepíthetok, Ex II 2G, és el vannak látva egy további ATEX jelzésu adattáblával, valamint rendelkeznek EK típusú vizsgálati bizonylattal is. További információkat lásd alul.

(SI) Izjava o skladnosti

V Grundfosu s polno odgovornostjo izjavljamo, da so naši izdelki SEG AUTO*ADAPT*, na katere se ta izjava nanaša, v skladu z naslednjimi direktivami Sveta o približevanju zakonodaje za izenačevanje pravnih predpisov držav članic ES:

– Direktiva o strojih (2006/42/ES).
  Uporabljeni normi: EN 809: 1998 in EN 60204-1: 2006.
– Direktiva o nizki napetosti (2006/95/ES).
  Uporabljeni normi: EN 60335-1: 2002 in EN 60335-2-41: 2003. Primerno, kadar je nominalna moč nižja od 2,2 kW.
– Direktiva o elektromagnetni združljivosti (EMC) (2004/108/ES).
  Uporabljeni normi: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 in EN 55014-2: 1997.
– Direktiva konstruiranja proizvoda (89/106/EGS).
  Uporabljeni normi: EN 12050-1: 2001 in EN 12050-2: 2000.
– ATEX direktiva (94/9/ES).
  Uporabljeni normi: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 in EN 13463-6: 2005.
  Velja samo za proizvode namenjene uporabi v potencialno eksplozivnih okoljih, Ex II 2G, opremljene z dodatno tipsko ploščico z ATEX odobritvijo in certifikatom EG o skladnosti tipa. Za več informacij glejte spodaj.

(HR) Izjava o usklađenosti

Mi, Grundfos, izjavljujemo pod vlastitom odgovornošću da je proizvod SEG AUTO*ADAPT*, na koji se ova izjava odnosi, u skladu s direktivama ovog Vijeća o usklađivanju zakona država članica EU:

– Direktiva za strojeve (2006/42/EZ).
  Korištene norme: EN 809: 1998 i EN 60204-1: 2006.
– Direktiva za niski napon (2006/95/EZ).
  Korištene norme: EN 60335-1: 2002 i EN 60335-2-41: 2003.
  Primjenjuje se kada je nazivna snaga niža od 2,2 kW.
– Direktiva za elektromagnetsku kompatibilnost (2004/108/EZ).
  Korištene norme: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 i EN 55014-2: 1997.
– Uredba o konstrukciji proizvoda (89/106/EEZ).
  Korištene norme: EN 12050-1: 2001 i EN 12050-2: 2000.
– ATEX uredba (94/9/EZ).
  Korištene norme: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 i EN 13463-6: 2005.
  Odnosi se samo na proizvode namijenjene uporabi u potencijalno eksplozivnom okružju, Ex II 2G, opremljene s dodatnom ATEX pločicom i certifikatom EZ o ispitivanju. Više informacija potražite niže u tekstu.

(SER) Deklaracija o konformitetu

Mi, Grundfos, izjavljujemo pod vlastitom odgovornošću da je proizvod SEG AUTO*ADAPT*, na koji se ova izjava odnosi, u skladu sa direktivama Saveta za usklađivanje zakona država članica EU:

– Direktiva za mašine (2006/42/EC).
  Korišćeni standardi: EN 809: 1998 i EN 60204-1: 2006.
– Direktiva niskog napona (2006/95/EC).
  Korišćeni standardi: EN 60335-1: 2002 i EN 60335-2-41: 2003.
  Primenljivo kada je nominalna snaga niža od 2,2 kW.
– EMC direktiva (2004/108/EC).
  Korišćeni standardi: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 i EN 55014-2: 1997.
– Direktiva o konstrukciji proizvoda (89/106/EEC).
  Korišćeni standardi: EN 12050-1: 2001 i EN 12050-2: 2000.
– ATEX direktiva (94/9/EC).
  Korišćeni standardi: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 i EN 13463-6: 2005.
  Primenjuje se samo na proizvode namenjene upotrebi u potencijalno eksplozivnim okolinama, Ex II 2G, opremljene sa dodatnom ATEX pločicom i EC-tip ispitnim sertifikatom. Više informacija potražite u tekstu dole.

(RO) Declarație de Conformitate

Noi, Grundfos, declarăm pe propria răspundere că produsele SEG AUTO*ADAPT*, la care se referă această declarație, sunt în conformitate cu aceste Directive de Consiliu asupra armonizării legilor Statelor Membre CE:

– Directiva Utilaje (2006/42/CE).
  Standarde utilizate: EN 809: 1998 şi EN 60204-1: 2006.
– Directiva Tensiune Joasă (2006/95/CE).
  Standarde utilizate: EN 60335-1: 2002 şi EN 60335-2-41: 2003.
  Aplicabil când puterea înregistrată este mai mică decât 2,2 kW.
– Directiva EMC (2004/108/CE).
  Standarde utilizate: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 şi EN 55014-2: 1997.
– Directiva referitoare la produsele pentru construcții (89/106/CEE).
  Standarde utilizate: EN 12050-1: 2001 şi EN 12050-2: 2000.
– Directiva ATEX (94/9/EC).
  Standarde utilizate: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 şi EN 13463-6: 2005.
  Se aplica doar produselor care se pot folosi în medii cu potential explozibil, Ex II 2G, si sunt contin placuta separata de certificare ATEX si certificat de examinare de tip CE. Mai multe informații, vezi mai jos.

Certificate number

KEMA 09ATEX0146X

Notified body: KEMA Quality B.V. No 0344, Utrechtseweg 310, 6812 AR Arnhem, Netherlands.
Manufacturer: GRUNDFOS Management A/S, Poul Due Jensens Vej 7, DK-8850 Bjerringbro, Denmark.

(BG) Декларация за съответствие

Ние, фирма Grundfos, заявяваме с пълна отговорност, че продуктите SEG AUTO*ADAPT*, за които се отнася настоящата декларация, отговарят на следните указания на Съвета за уеднаквяване на правните разпоредби на държавите членки на ЕС:

- Директива за машините (2006/42/ЕС).
  Приложени стандарти: EN 809: 1998 и EN 60204-1: 2006.
- Директива за нисковолтови системи (2006/95/ЕС).
  Приложени стандарти: EN 60335-1: 2002 и EN 60335-2-41: 2003.
  Приложим за помпи с номинална мощност по-ниска от 2,2 kW.
- Директива за електромагнитна съвместимост (2004/108/ЕС).
  Приложени стандарти: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 и EN 55014-2: 1997.
- Директива за строителни продукти (89/106/ЕЕС).
  Приложени стандарти: EN 12050-1: 2001 и EN 12050-2: 2000.
- ATEX директива (94/9/ЕС).
  Приложени стандарти: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 и EN 13463-6: 2005.
  Приложими само за продукти, предназначени за използване в потенциално взривоопасни среди, клас Ex II 2G, доставени с ATEX сертификат и ЕО Сертификат за изпитание. Сертификат за изпитание.

(CZ) Prohlášení o shodě

My firma Grundfos prohlašujeme na svou plnou odpovědnost, že výrobky SEG AUTO*ADAPT*, na něž se toto prohlášení vztahuje, jsou v souladu s ustanoveními směrnice Rady pro sblížení právních předpisů členských států Evropského společenství v oblastech:

- Směrnice pro strojní zařízení (2006/42/ES).
  Použité normy: EN 809: 1998 a EN 60204-1: 2006.
- Směrnice pro nízkonapěťové aplikace (2006/95/ES).
  Použité normy: EN 60335-1: 2002 a EN 60335-2-41: 2003.
  Je možno použít, pokud jmenovitý výkon je menší než 2,2 kW.
- Směrnice pro elektromagnetickou kompatibilitu (EMC) (2004/108/ES).
  Použité normy: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 a EN 55014-2: 1997.
- Směrnice o konstrukci výrobků (89/106/ES).
  Použité normy: EN 12050-1: 2001 a EN 12050-2: 2000.
- Směrnice pro ATEX (94/9/ES).
  Použité normy: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 a EN 13463-6: 2005.
  Platí pouze pro výrobky určené pro použití v potenciálně výbušném prostředí, Ex II 2G, opatřené samostatným typovým štítkem s označením ATEX a certifikátem o zkoušce typu ES. Další informace jsou uvedeny níže.

(SK) Prehlásenie o konformite

My firma Grundfos prehlasujeme na svoju plnú zodpovednosť, že výrobky SEG AUTO*ADAPT*, na ktoré sa toto prehlásenie vzťahuje, sú v súlade s ustanovením smernice Rady pre zblíženie právnych predpisov členských štátov Európskeho spoločenstva v oblastiach:

- Smernica pre strojové zariadenie (2006/42/EC).
  Použité normy: EN 809: 1998 a EN 60204-1: 2006.
- Smernica pre nízkonapäťové aplikácie (2006/95/EC).
  Použité normy: EN 60335-1: 2002 a EN 60335-2-41: 2003.
  Je možné použiť', pokiaľ je menovitý výkon menší než 2,2 kW.
- Smernica pre elektromagnetickú kompatibilitu (2004/108/EC).
  Použité normy: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 a EN 55014-2: 1997.
- Smernica o konštrukcií výrobkov (89/106/EEC).
  Použité normy: EN 12050-1: 2001 a EN 12050-2: 2000.
- Smernica pre ATEX (94/9/EC).
  Použité normy: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 a EN 13463-6: 2005.
  Platí iba pre výrobky určené pre použitie v potenciálne výbušnom prostredí, Ex II 2G, vybavené samostatným typovým štítkom s označením ATEX a certifikátom o skúške typu EC. Ďalšie informácie sú uvedené nižšie.

(TR) Uygunluk Bildirgesi

Grundfos olarak bu beyannameye konu olan SEG AUTO*ADAPT* ürünlerinin, AB Üyesi Ülkelerin kanunlarını birbirine yaklaştırma üzerine Konsey Direktifleriyle uyumlu olduğunun yalnızca bizim sorumluluğumuz altında olduğunu beyan ederiz:

- Makineler Yönetmeliği (2006/42/EC).
  Kullanılan standartlar: EN 809: 1998 ve EN 60204-1: 2006.
- Düşük Voltaj Yönetmeliği (2006/95/EC).
  Kullanılan standartlar: EN 60335-1: 2002 ve EN 60335-2-41: 2003.
  Nominal güç 2,2 kW'tan daha düşük olduğunda uygulanabilir.
- EMC Diretifi (2004/108/EC).
  Kullanılan standartlar: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 ve EN 55014-2: 1997.
- Yapı Ürünleri Yönergesi (89/106/EEC).
  Kullanılan standartlar: EN 12050-1: 2001 ve EN 12050-2: 2000.
- ATEX Yönergesi (94/9/EC).
  Kullanılan standartlar: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 ve EN 13463-6: 2005.
  Potansiyel patlayıcı ortamlarda kullanılan, Örn. Ex II 2G, uzere parcalı olarak ATEX onay etiketi ve EC tip muayene sertifikası verilebilmektedir. Ayrıntılı bilgi için, bkz. aşağıda.

(EE) Vastavusdeklaratsioon

Meie, Grundfos, deklareerime enda ainuvastutusel, et tooted SEG AUTO*ADAPT*, mille kohta käesolev juhend käib, on vastavuses EÜ Nõukogu direktiividega EMÜ liikmesriikide seaduste ühitamise kohta, mis käsitlevad:

- Masinate ohutus (2006/42/EC).
  Kasutatud standardid: EN 809: 1998 ja EN 60204-1: 2006.
- Madalpinge direktiiv (2006/95/EC).
  Kasutatud standardid: EN 60335-1: 2002 ja EN 60335-2-41: 2003.
  Kehtib, kui nominaalvõimsus on alla 2,2 kW.
- Elektromagnetiline ühilduvus (EMC direktiiv) (2004/108/EC).
  Kasutatud standardid: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 ja EN 55014-2: 1997.
- Ehitustoodete direktiiv (89/106/EEC).
  Kasutatud standardid: EN 12050-1: 2001 ja EN 12050-2: 2000.
- ATEX direktiiv (94/9/EC).
  Kasutatud standardid: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 ja EN 13463-6: 2005.
  Kehtib ainult toodetele, mis on mõeldud kasutamiseks potentsiaalselt plahvatusohtlikus keskkonnas, Ex II 2G, varustatud eraldi ATEX tunnustuse andmesildiga ja EC-tüüpi kontrollsertifikaadiga. Täiendav info, vaata alla.

(LT) Atitikties deklaracija

Mes, Grundfos, su visa atsakomybe pareiškiame, kad gaminiai SEG AUTO*ADAPT*, kuriems skirta ši deklaracija, atitinka šias Tarybos Direktyvas dėl Europos Ekonominės Bendrijos šalių narių įstatymų suderinimo:

- Mašinų direktyva (2006/42/EB).
  Taikomi standartai: EN 809: 1998 ir EN 60204-1: 2006.
- Žemų įtampų direktyva (2006/95/EB).
  Taikomi standartai: EN 60335-1: 2002 ir EN 60335-2-41: 2003.
  Galioja, kai nominali galia yra mažesnė kaip 2,2 kW.
- EMS direktyva (2004/108/EB).
  Taikomi standartai: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 ir EN 55014-2: 1997.
- Statybos produktų direktyva (89/106/EEB).
  Taikomi standartai: EN 12050-1: 2001 ir EN 12050-2: 2000.
- ATEX direktyva (94/9/EB).
  Taikomi standartai: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 ir EN 13463-6: 2005.
  Galioja tik produktams, skirtiems naudoti potencialiai sprogioje aplinkoje, Ex II 2G, ir turintiems atskirą ATEX atitikties lentelę ir EB tipo patikrinimo sertifikatą. Daugiau informacijos pateikiama žemiau.

Certificate number
KEMA 09ATEX0146X

Notified body: KEMA Quality B.V. No 0344, Utrechtseweg 310, 6812 AR Arnhem, Netherlands.
Manufacturer: GRUNDFOS Management A/S, Poul Due Jensens Vej 7, DK-8850 Bjerringbro, Denmark.

(LV) Paziņojums par atbilstību prasībām

Sabiedrība GRUNDFOS ar pilnu atbildību dara zināmu, ka produkti SEG AUTO*ADAPT*, uz kuriem attiecas šis paziņojums, atbilst šādām Padomes direktīvām par tuvināšanos EK dalībvalstu likumdošanas normām:

– Mašīnbūves direktīva (2006/42/EK).
  Piemērotie standarti: EN 809: 1998 un EN 60204-1: 2006.
– Zema sprieguma direktīva (2006/95/EK).
  Piemērotie standarti: EN 60335-1: 2002 un EN 60335-2-41: 2003.
  Piemērojams, kad nominālā jauda ir mazāka par 2,2 kW.
– Elektromagnētiskās saderības direktīva (2004/108/EK).
  Piemērotie standarti: EN 61000-3-2: 2006, EN 61000-3-3: 1995, EN 55014-1: 2006 un EN 55014-2: 1997.
– Būvmateriālu direktīva (89/106/EEK).
  Piemērotie standarti: EN 12050-1: 2001 un EN 12050-2: 2000.
– ATEX direktīva (94/9/EK).
  Piemērotie standarti: EN 60079-0: 2006, EN 60079-1: 2007, EN 13463-1: 2009, EN 13463-5: 2003 un EN 13463-6: 2005.
  Attiecas tikai uz tādiem izstrādājumiem, kas ir paredzēti lietošanai potenciāli sprādzienbīstamās vidēs, Ex II 2G, ir aprīkoti ar atsevišķu ATEX apstiprinājuma plāksnīti un EK pārbaudes sertifikātu. Papildus informāciju skatīt zemāk.

Bjerringbro, 1st September 2009

Jan Strandgaard
Technical Director

Certificate number

KEMA 09ATEX0146X

Notified body: KEMA Quality B.V. No 0344, Utrechtseweg 310, 6812 AR Arnhem, Netherlands.
Manufacturer: GRUNDFOS Management A/S, Poul Due Jensens Vej 7, DK-8850 Bjerringbro, Denmark.

SEG AUTO*ADAPT*

Original installation and operating instructions.

GB

CONTENTS

Warning

Prior to installation, read these installation and operating instructions. Installation and operation must comply with local regulations and accepted codes of good practice.

1. Symbols used in this document

Warning

If these safety instructions are not observed, it may result in personal injury!

Warning

If these instructions are not observed, it may lead to electric shock with consequent risk of serious personal injury or death.

Warning

These instructions must be observed for explosion-proof pumps. It is advisable also to follow these instructions for standard pumps.

Caution ***If these safety instructions are not observed, it may result in malfunction or damage to the equipment!***

Note ***Notes or instructions that make the job easier and ensure safe operation.***

2. General description

The electronic Grundfos SEG pumps incorporate a controller and motor-protective functions. They only need to be connected to the mains supply.

The controller offers the following benefits:

- Built-in level and dry-running sensors.
- Built-in motor protection.
- Pump alternation.
  If several pumps are installed in the same tank, the control logic incorporated in the pump will ensure that the load is distributed evenly among the pumps over time.
- Alarm relay output.
  The pump incorporates an alarm relay output. NC and NO are available and can be used as required, for example for acoustic or visual alarms.
- Anti-seizing system.
  The anti-seizing system starts the pump at programmed intervals to prevent the impeller from seizing up.
- Random start delay.
  This function ensures an even mains load when several pumps are started at the same time after an unintentional power cut.

The SEG pumps are designed with a grinder system which grinds solids into small pieces so that they can be led away through pipes of a relatively small diameter.

SEG pumps are used in pressurised systems, e.g. in hilly areas, and for similar applications.

Warning

Special conditions for safe use of SEG explosion-proof pumps:

- ***Bolts used for replacement must be class A2-70 or better according to EN/ISO 3506-1.***
- ***The thermal switch in the stator windings with a nominal switch temperature of 150 °C shall guarantee the disconnection of the supply; the resetting of the supply shall be manually.***

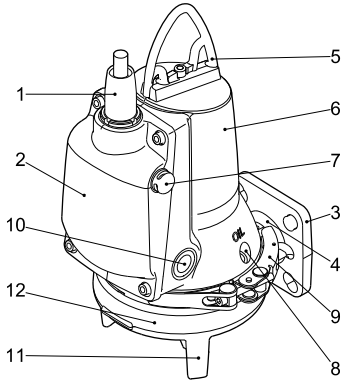


Fig. 1 SEG pump

Pos.	Description
1	Cable plug
2	Electronic unit
3	Discharge flange DN 40/DN 50
4	Discharge port
5	Lifting bracket
6	Stator housing
7	Level sensor
8	Oil screw
9	Clamp
10	Dry-running sensors
11	Pump foot
12	Pump housing

2.1 Applications

SEG pumps are designed for pumping

- domestic wastewater with discharge from toilets
- sewage from restaurants, hotels, camping sites, etc.

The compact design makes the pumps suitable for both temporary and permanent installation.
The pumps can be installed on an auto-coupling system or stand freely on the bottom of the tank.

2.1.1 Potentially explosive environments

Use explosion-proof pumps for applications in potentially explosive environments.

Warning

The explosion protection classification of the pump is CE Ex II 2 G, Ex bcd IIB T4 Gb.
The classification of the installation site must in each individual case be approved by the local fire-fighting authorities.

Warning

The pumps must under no circumstances pump combustible liquids.

3. Operating conditions

The pumps are designed for intermittent operation (S3). When completely submerged, the pumps can also operate continuously (S1). See section *11.2 Operating modes*.

3.1 Installation depth

Maximum 10 metres below liquid level.

3.2 Operating pressure

Maximum 6 bar.

3.3 Operation

Maximum number of starts per hour, see WebCAPS on www.grundfos.com.

3.4 pH value

Pumps in permanent installations can be used for pumping liquids with a pH value between 4 and 10.

3.5 Liquid temperature

0 °C to +40 °C.

For short periods (maximum 10 minutes) a temperature of up to +60 °C is allowed (standard versions only).

Warning

Explosion-proof pumps must never pump liquids with a temperature higher than 40 °C.

3.6 Density of pumped liquid

Maximum 1000 kg/m^3.

In the case of higher values, see WebCAPS on www.grundfos.com, or contact Grundfos.

4. Approvals

The standard versions of the SEG pumps have been tested by VDE.

The explosion-proof versions have been approved by KEMA according to the ATEX directive.

4.1 Approval standards

All versions have been approved by LGA (notified body under the Construction Products directive) according to EN 12050-1 and EN 12050-2.

4.2 Explanation to Ex approval

The explosion protection classification of the pump is Europe CE 0344 Ⓔx II 2 G Ex bcd IIB T4 Gb.

Directive/ standard	Code		Description
ATEX	CE 0344	=	CE mark of conformity according to the ATEX directive 94/9/EC, Annex X. 0344 is the number of the notified body which has certified the quality system for ATEX.
	Ⓔx	=	Explosion protection mark.
	II	=	Equipment group according to the ATEX directive, Annex II, point 2.2, defining the requirements applicable to the equipment in this group.
	2	=	Equipment category according to the ATEX directive, Annex II, point 2.2, defining the requirements applicable to the equipment in this category.
	G	=	Explosive atmospheres caused by gases, vapours or mists.
Harmonised European standard	Ex	=	The equipment conforms to the harmonised European standard.
	b		Control of ignition sources according to EN 13463-6: 2005.
	c		Constructional safety according to EN 13463-5: 2003 and EN 13463-1: 2009.
	d	=	Flame-proof enclosure according to EN 60079-1: 2007.
	II	=	Suitable for use in explosive atmospheres (not mines).
	B	=	Classification of gases according to EN 60079-0: 2006, Annex A. Gas group B includes gas group A.
	T4	=	Maximum surface temperature is 135 °C according to EN 60079-0: 2006.
	Gb		Equipment protection level (IEC).
	X	=	The equipment is subject to special conditions for safe use. The conditions are mentioned in the certificate and these installation and operating instructions.

IEC countries (Australia and others) Ex d IIB T4 Gb.

Directive/ standard	Code		Description
IEC 60079-0 and IEC 60079-1	Ex	=	The equipment conforms to the harmonised European standard.
	d	=	Flame-proof enclosure according to IEC 60079-1: 2007.
	II	=	Suitable for use in explosive atmospheres (not mines).
	B	=	Classification of gases according to IEC 60079-0: 2006, Annex A. Gas group B includes gas group A.
	T4	=	Maximum surface temperature is 135 °C according to IEC 60079-0: 2006.
	IP68	=	Enclosure class according to IEC 60529.
	X		The equipment is subject to special conditions for safe use. The conditions are mentioned in the certificate and these installation and operating instructions.

5. Identification

5.1 Nameplate

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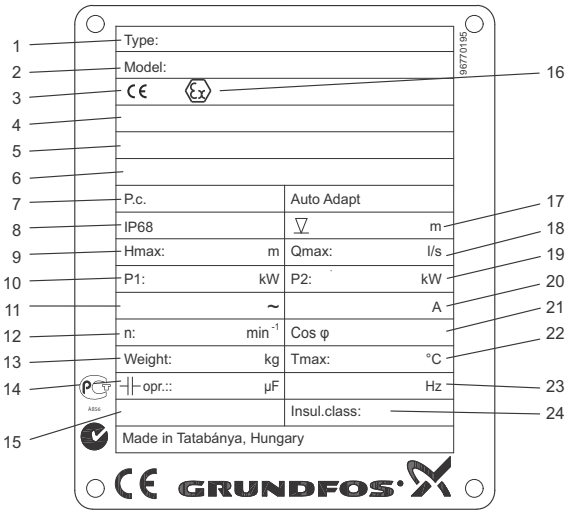
The nameplate states the operating data and approvals applying to the pump. The nameplate is fixed to the side of the stator housing opposite the electronic unit.

The additional nameplate supplied with the pump can be fixed close to the tank.



TM04 4459 1309

Fig. 2 Nameplate

Pos.	Description	Pos.	Description	Pos.	Description
1	Version	10	Number of phases	19	Maximum liquid temperature
2	Type designation	11	Rated input power	20	Output power
3	Product number	12	Rated speed	21	Power factor
4	Ex mark	13	Rated voltage	22	Rated current
5	ATEX certificate	14	Weight (without cable)	23	Operating capacitor
6	IEC Ex mark	15	Pump approval	24	Frequency
7	IEC Ex certificate	16	Enclosure class	25	Insulation class
8	Production code	17	Maximum installation depth	26	Country of origin
9	Maximum head	18	Maximum flow		

5.2 Type key

Example SEG.40.11.E.Ex.2.1.502 **SE G .40 .11 .E .Ex .2 .1 .5 02**

Type range
Grundfos sewage pumps

Impeller type
G = Grinder system in the pump inlet

Material
Standard, cast iron

Maximum spherical impeller clearance [mm]
Not relevant for SEG pumps

Pump discharge
Nominal diameter of pump discharge port [mm]

Output power, P2
P2 = Code from type designation/10 kW

Equipment in pump
E = Electronic version

Installation type
Blank = Submerged without cooling jacket

Pump version
Blank = Standard version of submersible wastewater pumps
Ex = The pump is designed according to the ATEX standard stated or Australian standard, AS 2430.1.

Number of poles
2 poles, n = 3000 min^{-1}, 50 Hz

Number of phases
1 = Single-phase motor
Blank = Three-phase motor

Mains frequency
5 = 50 Hz

Voltage and starting method
02 = 230 V, direct-on-line starting
0B = 400-415 V, direct-on-line starting

Generation
Blank = 1st generation
A = 2nd generation
B = 3rd generation, etc.
The pumps belonging to the individual generations differ in design, but are similar in terms of power rating.

Material in pump
Blank = Standard material in pump

GB

6. Safety

Warning

The use of this product requires experience with and knowledge of the product.
Persons with reduced physical, sensory or mental capabilities must not use this product, unless they are under supervision or have been instructed in the use of the product by a person responsible for their safety.
Children must not use or play with this product.

Warning

Pump installation in tanks must be carried out by specially trained persons.
Work in or near wastewater collecting tanks must be carried out according to local regulations.

Warning

It must be possible to lock the mains switch in position 0. Type and requirements as specified in EN 60204-1, 5.3.2.

Warning

Persons must not enter the installation area when the atmosphere is explosive.

For safety reasons, all work in tanks must be supervised by a person outside the pump tank.

Note ***It is advisable to carry out all maintenance and service work when the pump is placed outside the tank.***

Tanks for submersible wastewater pumps contain wastewater with toxic and/or disease-causing substances. Therefore, all persons involved must wear appropriate personal protective equipment and clothing and all work on and near the pump must be carried out under strict observance of the hygiene regulations in force.

Warning

Make sure that the lifting bracket is tightened before attempting to lift the pump. Tighten if necessary. Carelessness during lifting or transportation may cause injury to personnel or damage to the pump.

7. Transportation and storage

The pump may be transported and stored in a vertical or horizontal position. Make sure that the pump cannot roll or fall over.

Check that the protective cap for the level sensor has not been damaged during transportation. See fig. 1 (pos. 7). If the protective cap is defective, contact your nearest Grundfos company.

All lifting equipment must be rated for the purpose and checked for damage before any attempts to lift the pump. The lifting equipment rating must under no circumstances be exceeded. The pump weight is stated on the pump nameplate.

Warning

Always lift the pump by its lifting bracket or by means of a fork-lift truck if the pump is fixed to a pallet. Never lift the pump by means of the motor cable or the hose/pipe.

The polyurethane-embedded plug prevents water from penetrating into the motor via the motor cable.

For long periods of storage, the pump must be protected against moisture and heat.

After a long period of storage, the pump should be inspected before it is put into operation. Make sure that the impeller can rotate freely. Pay special attention to the shaft seal, cable entry and sensors.

8. Installation

Warning

Before beginning the installation, switch off the power supply, and lock the mains switch in position 0.

Any external voltage connected to the pump must be switched off before working on the pump.

Warning

Before installation and the first start-up of the pump, check the cable for visible defects to avoid short-circuits.

Caution ***Before beginning the installation, make sure the tank floor is even.***

The additional nameplate supplied with the pump can be fixed close to the tank.

All safety regulations must be observed at the installation site, for instance the use of blowers for fresh-air supply to the tank.

Prior to installation, check the oil level in the oil chamber. See section *12. Maintenance and service*.

The pumps are suitable for different installation types which are described in sections *8.1* and *8.2*.

All pump housings have a cast DN 40, PN 10 discharge flange which can also be connected to a DN 50, PN 10 flange.

Warning

Do not put your hands or any tool into the pump suction or discharge port after the pump has been connected to the power supply, unless the pump has been switched off by removing the fuses or switching off the mains switch. It must be ensured that the power supply cannot be accidentally switched on.

Warning

Only use the lifting bracket for lifting the pump. Do not use it to hold the pump when in operation.

Note ***We recommend always to use Grundfos accessories to avoid malfunction due to incorrect installation.***

Note ***The pumps are designed for intermittent operation.***
When completely submerged in the pumped liquid, the pumps can also operate continuously.
See section 11.2 Operating modes.

8.1 Installation on auto coupling

Pumps for permanent installation can be mounted on a stationary auto-coupling guide rail system or a "hookup" auto-coupling system.

Both auto-coupling systems facilitate maintenance and service as the pump can easily be lifted out of the tank.

Warning

Before beginning installation procedures, make sure that the atmosphere in the tank is not potentially explosive.

Caution ***Make sure that the pipework is installed without the use of undue force. No loads from the pipework weight must be carried by the pump. We recommend the use of loose flanges to ease the installation and to avoid pipe tension at flanges and bolts.***

Caution ***Do not use elastic elements or bellows in the pipework. Never use these elements as a means to align the pipework.***

Auto-coupling guide rail system, see fig. A on page 570.

Proceed as follows:

1. Drill mounting holes for the guide rail bracket on the inside of the tank, and fasten the guide rail bracket provisionally with two screws.
2. Place the auto-coupling base unit on the bottom of the tank. Use a plumb line to establish the correct positioning. Fasten the auto coupling with heavy-duty expansion bolts. If the bottom of the tank is uneven, the auto-coupling base unit must be supported so that it is level when being fastened.
3. Assemble the discharge line in accordance with the generally accepted procedures and without exposing the line to distortion or tension.
4. Insert the guide rails in the auto-coupling base unit, and adjust the length of the rails accurately to the guide rail bracket.
5. Unscrew the provisionally fastened guide rail bracket, fit it on top of the guide rails, and finally fasten it firmly to the tank wall.

Note ***The guide rails must not have any axial play as this would cause noise during pump operation.***

6. Clean out debris from the tank before lowering the pump into the tank.
7. Fit the guide claw to the discharge port of the pump. Then slide the guide claw down the guide rails, and lower the pump into the tank by means of a chain secured to the pump lifting bracket. When the pump reaches the auto-coupling base unit, the pump will automatically connect tightly.

8. Hang up the end of the chain on a suitable hook at the top of the tank and in such a way that the chain cannot come into contact with the pump housing.
9. Adjust the length of the motor cable by coiling it up on a relief fitting to ensure that the cable is not damaged during operation. Fasten the relief fitting to a suitable hook at the top of the tank. Make sure that the cables are not sharply bent or pinched.
10. Connect the motor cable and the monitoring cable, if any.

Hookup auto-coupling system, see fig. B on page 571.

Proceed as follows:

1. Fit the crossbar in the tank.
2. Fit the adapted piece of pipe for the movable part of the hookup auto coupling to the pump discharge port.
3. Fasten a shackle and a chain to the movable part of the hookup auto coupling.
4. Clean out debris from the tank before lowering the pump.
5. Lower the pump into the tank by means of the chain secured to the pump lifting bracket.
6. Hang up the end of the chain on a suitable hook at the top of the tank and in such a way that the chain cannot come into contact with the pump housing.
7. Adjust the length of the motor cable by coiling it up on a relief fitting to ensure that the cable is not damaged during operation. Fasten the relief fitting to a suitable hook at the top of the tank. Make sure that the cables are not sharply bent or pinched.
8. Connect the motor cable and the monitoring cable, if any.

8.2 Free-standing submerged installation

Pumps for free-standing submerged installation can stand freely on the bottom of the tank or similar location. See fig. C on page 572.

The pump must be mounted on separate feet (accessory).

In order to facilitate service on the pump, fit a flexible union or coupling to the discharge line for easy separation.

If a hose is used, make sure that the hose does not buckle and that the inside diameter of the hose matches that of the discharge port.

If a rigid pipe is used, the union or coupling, non-return valve and isolating valve should be fitted in the order mentioned, when viewed from the pump.

If the pump is installed in muddy conditions or on uneven ground, it is recommended to support the pump on bricks or a similar support.

Proceed as follows:

1. Fit a 90 ° elbow to the pump discharge port, and connect the discharge pipe or hose.
2. Lower the pump into the liquid by means of a chain secured to the lifting bracket of the pump. It is recommended to place the pump on a plane, solid foundation. Make sure that the pump is hanging from the chain and **not** the cable.
3. Hang up the end of the chain on a suitable hook at the top of the tank and in such a way that the chain cannot come into contact with the pump housing.
4. Adjust the length of the motor cable by coiling it up on a relief fitting to ensure that the cable is not damaged during operation. Fasten the relief fitting to a suitable hook. Make sure that the cables are not sharply bent or pinched.
5. Connect the motor cable and the monitoring cable, if any.

Note ***If several pumps are installed in the same tank, the pumps must be installed at the same level in order to allow optimum pump alternation.***

9. Electrical connection

Caution ***The pump must not be used with a frequency converter.***

The electrical connection should be carried out in accordance with local regulations.

Warning

The pump must be connected to an electrical panel in accordance with local regulations. The electrical panel typically includes fuses, main switch and earth leakage circuit breaker with a contact separation according to EN 60204-1, 5.3.2.

It must be possible to lock the mains switch in position 0. Type and requirements as specified in EN 60204-1, 5.3.2.

The pump incorporates a motor-protective circuit breaker and all control logic.

Warning

If the pump has an Ex mark on the nameplate, make sure that the pump is connected in accordance with the instructions given in this booklet.

Warning

The explosion protection classification of the pump is CE Ex II 2 G, Ex bcd IIB T4 Gb. See section 4.2.
The classification of the installation site must in each individual case be approved by the local authorities.

The CIU unit, if used, (see section 9.1) must not be installed in potentially explosive environments.

Warning

On explosion-proof pumps, make sure that an external earth conductor is connected to the external earth terminal on the pump using a conductor with a secure cable clamp. Clean the surface for external earth connection, and fit the cable clamp.

The cross section of the earth conductor must be at least 4 mm^2, e.g. type H07 V2-K (PVT 90 °) yellow/green.

Make sure that the earth connection is protected from corrosion.

Warning

Before installation and the first start-up of the pump, check the cable for visible defects to avoid short-circuits.

Warning

The pump must not run dry.

The supply voltage and frequency are marked on the pump nameplate. For voltage tolerance, see section *14.1 Supply voltage*. Make sure that the motor is suitable for the power supply available at the installation site.

All pumps are supplied with 10 metres of cable and a free cable end.

Caution ***A possible replacement of the cable must be carried out by Grundfos or an authorised service workshop.***

9.1 CIU unit (communication interface)

The Grundfos CIU unit (CIU = Communication Interface Unit) is used as a communication interface between an SEG pump and a main network.

The CIU unit is optional. See separate installation and operating instructions supplied with the unit.

9.2 Electrical connection – single-phase pumps

The pump has a patented start function which eliminates the need of a starting capacitor.
The operating capacitor is incorporated in the pump.

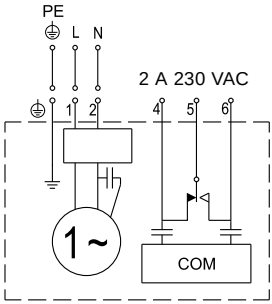


Fig. 3 Wiring diagram for single-phase pumps

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9.3 Electrical connection – three-phase pumps

The pump motor is designed so that the phase sequence in the electrical panel is clockwise (can be determined with a phase sequence detector).
The pump does not start unless the phase sequence is correct.

If the dry-running sensors are covered by liquid, and the pump does not start, the cause may be a wrong phase sequence. Interchange L1 and L2.

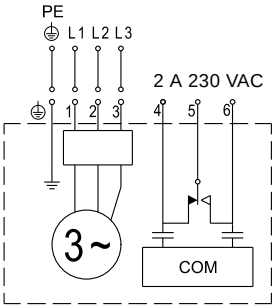

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Fig. 4 Wiring diagram for three-phase pumps

9.4 Alarm relay/communication connection

The pump incorporates an alarm relay output.
NC and NO are available and can be used as required, for example for acoustic or visual alarms.

Alternatively, the wires 4 and 6 can be used for external communication via a CIU unit (communication interface).

Note ***If a CIU unit is connected, the relay must not be used. The CIU unit incorporates a relay which takes over the alarm function.***

See example of wiring diagram in the documentation supplied with the CIU unit.

10. Configuration

10.1 Default settings

The pump is supplied from the factory with the following default settings.

Parameter	0.9 - 1.5 kW	2.6 kW	3.1 - 4.0 kW
Start delay (random)	Off	–	–
Start level	25 cm	–	–
High-level alarm	+ 10 cm	–	–
Anti-seizing:			
Interval	3 days	–	–
Duration	2 sec.	–	–

If one or more of the above parameters are to be changed, use the optional CIU unit together with an R100 remote control.

The CIU unit can be connected temporarily for configuration.
For further information, see installation and operating instructions for the CIU unit.

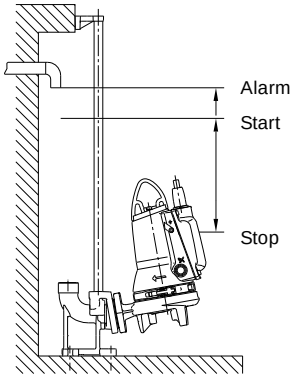

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Fig. 5 Start and stop levels

10.2 Pump alternation

If several pumps (up to four) are installed in the same tank, the control logic incorporated in the pump will ensure that the load is distributed evenly among the pumps over time.

Alternation is carried out according to a patented method based on measurement of the liquid level in the tank.

Note ***The barometric pressure may affect the alternating sequence.***

10.3 Start level set

The pump start level may be affected by the barometric pressure. In the case of long intervals between start and stop, the start level may differ from the set level. See examples below.

Example 1: Constant barometric pressure

The pump will start when the liquid level in the tank has reached the set start level. Then the pump will run until the liquid level reaches the stop level. When it stops, the pump will calibrate itself in relation to the actual barometric pressure. See fig. 6.

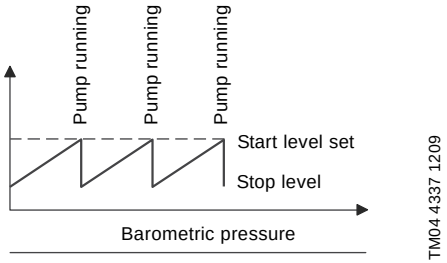

Fig. 6 Example 1: Constant barometric pressure

Example 2: Rising barometric pressure

If the barometric pressure rises after the pump has stopped, the pump will register this rise as a rise in liquid level. The result may be that the pump starts before the set start level is reached. See fig. 7.

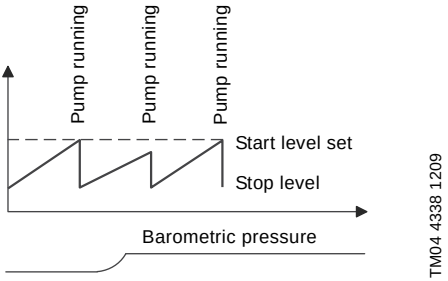

Fig. 7 Example 2: Rising barometric pressure

Example 3: Falling barometric pressure

If the barometric pressure falls after the pump has stopped, the pump will register this fall as a fall in liquid level. The result may be that the pump starts after the set start level was reached. See fig. 8.

Therefore, the distance between the pump stop level and the inlet to the tank should be at least 50 cm. See fig. 5.

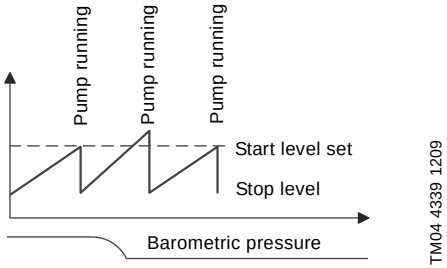

Fig. 8 Example 3: Falling barometric pressure

Warning

The pump incorporates dry-running protection based on two dry-running sensors placed on either side of the electronic unit. If a dry-running sensor detects water shortage, the pump will stop immediately and cannot restart until the sensors are fully submerged again.

The sensors must be cleaned at regular intervals, depending on the deposits of sludge on the sensors in the tank.

10.4 Thermal switches

All pumps have two sets of thermal switches incorporated in the stator windings.

When a thermal switch is activated, the pump will stop immediately and will not restart until the motor windings have cooled sufficiently.

Note

If the pump does not restart automatically, the pump must be reset and restarted manually. See section 11.4 Resetting the pump.

If the pump has to be restarted manually repeatedly, contact Grundfos or an authorised service workshop.

11. Start-up

Warning

Before starting work on the pump, make sure that the fuses have been removed or the mains switch has been switched off. It must be ensured that the power supply cannot be accidentally switched on.

Make sure that all protective equipment has been connected correctly.

The pump must not run dry.

Warning

Opening the clamp when the pump is started can lead to personal injury or death.

Warning

The pump must not be started if a potentially explosive atmosphere is present in the tank.

Caution ***In case of abnormal noise or vibrations from the pump or other pump or supply failure, stop the pump immediately. Do not attempt to restart the pump until the cause of the fault has been found and the fault corrected.***

After one week of operation after replacement of the the shaft seal, the condition of the oil in the oil chamber should be checked. See section *12. Maintenance and service* for procedure.

11.1 Before start-up

Proceed as follows:

1. Remove the fuses. Check that the impeller can rotate freely. Turn the grinder head by hand.
2. Check the condition of the oil in the oil chamber. See also section *12.8 Oil change*.
3. Check that the level sensor is clean, and that the protective cap is intact.
4. Check that the dry-running sensors are clean.
5. Open the isolating valves, if fitted.
6. Lower the pump into the liquid, and insert the fuses.
7. Check that the system has been filled with liquid and vented. The pump is self-venting.
8. Switch on the power supply to the pump.

When powered, the pump will start and pump down to the dry-running level. This function can be used to check the pump.

Note ***If the dry-running sensors are not covered by liquid, the pump cannot start.***

11.2 Operating modes

The pumps are designed for intermittent operation (S3). When completely submerged, the pumps can also operate continuously (S1).

- **S3, intermittent operation:**
  The electronics of the pump will in due time stop the pump automatically. The operating mode S3 means that within 10 minutes the pump must run for 4 minutes and be stopped for 6 minutes. See fig. 9.
  In this operating mode, the pump is partly submerged in the pumped liquid, i.e. the liquid level reaches at minimum the middle of the motor.

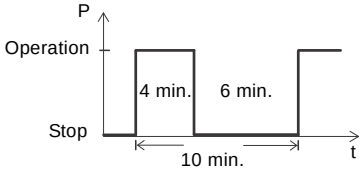

Fig. 9 S3 operation

- **S1, continuous operation:**
  In this operating mode, the pump can operate continuously without having to be stopped for cooling. See fig. 10. Being completely submerged, the pump is sufficiently cooled by the surrounding liquid.

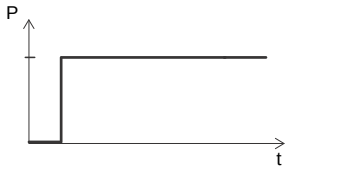

Fig. 10 S1 operation

11.3 Direction of rotation

All **single-phase** pumps are factory-wired for the correct direction of rotation.

The electronics incorporated in **three-phase** pumps ensures that the pump does not start with a wrong phase sequence, and consequently wrong direction of rotation.

If the pump does not run, and the liquid level is above the dry-running sensors, interchange L1 and L2.

Note

The pump rotates clockwise when viewed from above. When started, the pump will jerk in the opposite direction of the direction of rotation.

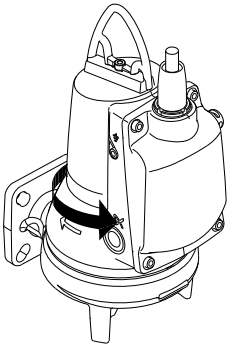

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Fig. 11 Jerk direction

11.4 Resetting the pump

To reset the pump, switch off the power supply to the pump for 1 minute, and switch it on again.

12. Maintenance and service

Warning

Before starting work on the pump, make sure that the fuses have been removed or the mains switch has been switched off. It must be ensured that the power supply cannot be accidentally switched on.

All rotating parts must have stopped moving.

Warning

Except for service on the hydraulic part, all other service work must be carried out by Grundfos or an authorised service workshop approved for servicing Ex products.

Before carrying out maintenance and service, it must be ensured that the pump has been thoroughly flushed with clean water. Rinse the pump parts in water after dismantling.

Warning

When slackening the screws of the oil chamber, note that pressure may have built up in the chamber. Do not remove the screws until the pressure has been fully relieved.

Note

The cleaning intervals in section 12.1 are stated as guidelines and should be matched to the specific tank.

For explosion-proof pumps, the cleaning intervals in section 12.2 must be observed.

Note

During long periods of inactivity, it is recommended to check the function of the pump.

12.1 Recommended cleaning intervals for sensors in standard pumps

For cleaning of sensors, see section *12.6*.

Wastewater containing grease	Wastewater containing dry solid matter or fibres	Wastewater without grease, dry solid matter or fibres
3 months	6 months	12 months

12.2 Required cleaning intervals for sensors in explosion-proof pumps

For cleaning of sensors, see section *12.6*.

Wastewater containing grease	Wastewater containing dry solid matter or fibres	Wastewater without grease, dry solid matter or fibres
3 months	6 months	6 months

12.3 Inspection intervals

Warning

Except for service on the hydraulic part, all other service work must be carried out by Grundfos or an authorised service workshop approved for servicing Ex products.

Pumps running normal operation should be inspected every 3000 operating hours or at least once a year. If the dry-solid content of the pumped liquid is very high or sandy, check the pump at shorter intervals.

Check the following points:

- **Power consumption**
  See pump nameplate.
- **Oil level and oil condition**
  When the pump is new or after replacement of the shaft seal, check the oil level after one week of operation.
  If the oil contains more than 20 % water, the shaft seal may be defective. The oil should be changed every 3000 operating hours or at least once a year.
  Use Shell Ondina 917 oil or similar type.
  See sections *12.8 Oil change* and *12.9 Service kits*.
- For cleaning of sensors, see section *12.6*.

Note ***Used oil must be disposed of in accordance with local regulations.***

The table states how much oil the pumps must have in the oil chamber:

Pump type	Quantity of oil in oil chamber [l]
SEG up to 1.5 kW	0.17
SEG 2.2 to 4.0 kW	0.42

- **Cable entry**
  Make sure that the cable entry is watertight and that the cables are not sharply bent and/or pinched.
  See section *12.9 Service kits*.
- **Pump parts**
  Check the impeller, pump housing, etc. for possible wear. Replace defective parts.
  See section *12.9 Service kits*.
- **Ball bearings**
  Check the shaft for noisy or heavy operation (turn the shaft by hand). Replace defective ball bearings.
  A general overhaul of the pump is usually required in case of defective ball bearings or poor motor function. This work must be carried out by Grundfos or an authorised service workshop.
- **Grinder system/parts**
  In case of frequent choke-ups, check the grinder system for visible wear. When worn, the edges of the grinding parts are round and worn. Compare with a new grinder system.

12.4 Replacing the grinder system

Warning

Before starting work on the pump, make sure that the fuses have been removed or the mains switch has been switched off. It must be ensured that the power supply cannot be accidentally switched on.

All rotating parts must have stopped moving.

For position numbers, see page 588.

Removing the grinder system:

1. Slacken the screw (pos. 188a) in one of the pump feet.
2. Loosen the grinder ring (pos. 44), and open the bayonet socket by knocking the grinder ring clockwise.

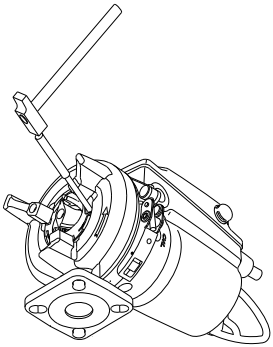

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Fig. 12 Removal of grinder ring

3. Remove the grinder ring (pos. 44).
4. Remove the screw from the shaft end.
5. Remove the grinder head (pos. 45).

For adjustment of impeller clearance, see fig. 13.

a) Gently tighten the nut (pos. 68) (spanner size 24) until the impeller (pos. 49) cannot rotate any more.

b) Slacken the nut by 1/4 turn.

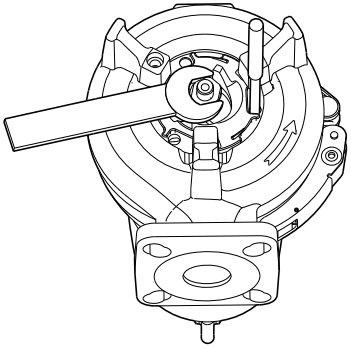

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Fig. 13 Adjustment of impeller clearance

Fitting the grinder system:

1. When fitting the grinder head (pos. 45), the projections on the back of the grinder head must engage with the holes in the impeller (pos. 49).
2. Tighten the screw (pos. 188a) for the grinder head to 20 Nm.
3. Engage the bayonet socket for the grinder ring (pos. 44).
4. Knock the bayonet socket counter-clockwise until the grinder ring (pos. 44) is fastened.
5. Tighten the screw (pos. 188a).
6. Turn the grinder head to make sure that it is fitted correctly, i.e. it turns freely.

12.5 Cleaning the pump housing

For position numbers, see page 588.

To clean the pump housing, proceed as follows:

Dismantling

1. Loosen and remove the clamp (pos. 92) holding the pump housing and motor together.
2. Lift the motor part out of the pump housing (pos. 50). The impeller and grinder head are removed together with the motor part.
3. Clean the pump housing and the impeller.

Assembly

1. Place the motor part with impeller and grinder head in the pump housing.
2. Fit and tighten the clamp.

See also section *12.7 Checking/replacing the shaft seal*.

12.6 Cleaning the sensors

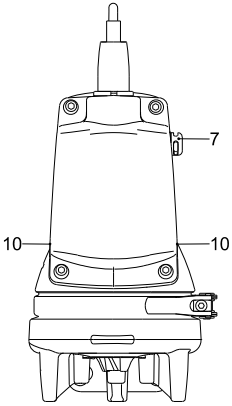

Fig. 14 Position of level and dry-running sensors

Proceed as follows:

See fig. 14.

1. **Level sensor (pos. 7):**
   Flush the sensor with clean water.
   Dry-running sensors (pos. 10):
   Flush the dry-running sensors with clean water and clean using a soft brush.
2. Switch on the power supply to the pump.
3. Check that the pump starts and pumps down to the dry-running level.

Caution ***To avoid damaging the sensors, do not use other cleaning aid than those mentioned above.***

Note ***If the dry-running sensors are not covered by liquid, the pump cannot start.***

12.7 Checking/replacing the shaft seal

To make sure that the shaft seal is intact, the oil should be checked.

If the oil contains more than 20 % water, the shaft seal may be defective and must be replaced. If the shaft seal is nevertheless used, the motor will be damaged.

If the oil is clean, it can be reused. See also section *12. Maintenance and service*.

For position numbers, see page 588.

To check the shaft seal, proceed as follows:

1. Remove the grinder ring (pos. 44).
   See section *12.4 Replacing the grinder system*.
2. Remove the screw (pos. 188a) from the shaft end.
3. Loosen and remove the clamp (pos. 92) holding the pump housing and motor together.
4. Lift the motor part out of the pump housing (pos. 50). The impeller and grinder head are removed together with the motor part.
5. Remove the grinder head (pos. 45).
6. Remove the impeller (pos. 49) from the shaft.
7. Drain the oil from the oil chamber.
   See section *12.8 Oil change*.

Note ***Used oil must be disposed of in accordance with local regulations.***

Warning

When slackening the screws of the oil chamber, note that pressure may have built up in the chamber. Do not remove the screws until the pressure has been fully relieved.

The shaft seal is a complete unit for all pumps.

8. Remove the screws (pos. 188a) securing the shaft seal (pos. 105).
9. Lift the shaft seal (pos. 105) out of the oil chamber according to the lever principle using the two dismounting holes in the shaft seal carrier (pos. 58) and two screwdrivers.
10. Check the condition of the shaft where the secondary seal of the shaft seal touches the shaft. The bush (pos. 103) fitted to the shaft must be intact. If it is worn and must be replaced, the pump must be checked by Grundfos or an authorised service workshop.

If the shaft is intact, proceed as follows:

1. Check/clean the oil chamber.
2. Lubricate the faces in contact with the shaft seal with oil (pos. 105a) (O-rings and shaft).
3. Insert the new shaft seal (pos. 105) using the plastic bush included in the kit.
4. Tighten the screws (pos. 188a) securing the shaft seal to 16 Nm.
5. Fit the impeller. Make sure that the key (pos. 9a) is fitted correctly.
6. Fit the pump housing (pos. 50).
7. Fit and tighten the clamp (pos. 92).
8. Fill the oil chamber with oil. See section *12.8 Oil change*.

For adjustment of impeller clearance, see section *12.4 Replacing the grinder system*.

12.8 Oil change

Every 3000 operating hours or at least once a year, change the oil in the oil chamber as described below.

If the shaft seal has been changed, the oil must be changed as well. See section *12.7 Checking/ replacing the shaft seal*.

Draining of oil:

Warning

When slackening the screws of the oil chamber, note that pressure may have built up in the chamber. Do not remove the screws until the pressure has been fully relieved.

1. Slacken and remove both oil screws to allow all the oil to drain from the chamber.
2. Check the oil for water and impurities. If the shaft seal has been removed, the oil will give a good indication of the condition of the shaft seal.

Note ***Used oil must be disposed of in accordance with local regulations.***

Oil filling, pump lying down:

See fig. 15.

1. Place the pump in such a position that it is lying on the stator housing and the discharge flange and that the oil screws are pointing upwards.
2. Fill oil into the oil chamber through the upper hole until it starts running out of the lower hole. The oil level is now correct.
   For oil quantity, see section *12.3 Inspection intervals*.
3. Fit both oil screws using the packing material included in the kit.
   See section *12.9 Service kits*.

Oil filling, pump in upright position:

1. Place the pump on a plane, horizontal surface.
2. Fill oil into the oil chamber through one of the holes until it starts running out of the other hole.
   For oil quantity, see section *12.3 Inspection intervals*.
3. Fit both oil screws using the packing material included in the kit.
   See section *12.9 Service kits*.

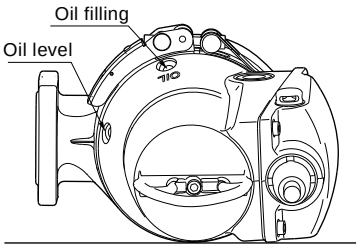

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Fig. 15 Oil filling holes

12.9 Service kits

GB

Warning

Before starting work on the pump, make sure that the fuses have been removed or the mains switch has been switched off. It must be ensured that the power supply cannot be accidentally switched on.

All rotating parts must have stopped moving.

The service kits in the table below are available for all pumps.
The kits can be ordered as required.

Service kit	Contents	Pump type	Material	Product number
Shaft seal kit	Shaft seal complete	SEG.40.09 - 15	BQQP	96076122
			BQQV	96645160
		SEG.40.26 - 40	BQQP	96076123
			BQQV	96645275
O-ring kit	O-rings and gaskets for oil screws	SEG.40.09 - 15	NBR	96076124
			FKM	96646061
		SEG.40.26 - 40	NBR	96076125
			FKM	96646062
Grinder system	Grinder head, grinder ring, shaft screw and locking screw	All types		96076121
Impeller	Impeller complete with adjusting nut, shaft screw and key	SEG.40.09		96076115
		SEG.40.12		96076116
		SEG.40.15		96076117
		SEG.40.26		96076118
		SEG.40.31		96076119
		SEG.40.40		96076120
Oil	1 litre of oil, type Shell Ondina 917. See section *12. Maintenance and service* for required quantity in oil chamber.	All types		96076171
Lifting bracket	Lifting bracket and screw	0.9 - 1.5 kW		96984147
		2.6 - 4.0 kW		96984148
Power plug	Plug for power supply and O-rings for cover	All types		96984144
Protective cap for level sensor	Protective cap and O-rings for cover and sensor	All types		96898081
Level sensor	Level sensor, protective cap and O-rings for cover and sensor	Standard pumps		96898082
		Ex pumps		96984130
Dry-running sensor	Dry-running sensor and O-rings for cover and sensor	Standard pumps		96898083
		Ex pumps		96984131
Electronic unit Single-phase	Cover with electronics and O-rings for cover	Single-phase pumps		96898085
		Single-phase Ex pumps		96984145
Electronic unit Three-phase	Cover with electronics and O-rings for cover	Three-phase pumps		96898086
		Three-phase Ex pumps		96984146
Pt1000 sensor	Pt1000 sensor and bracket	All types		96984143

Service kit	Contents	Pump type	Material	Product number
Operating capacitor	Operating capacitor, Pt1000 sensor, bracket and O-rings for cover	All single-phase pumps		96984142

Caution ***A possible replacement of the cable must be carried out by Grundfos or an authorised service workshop.***

12.10 Built-in protection

The motor incorporates an electronic unit which protects the motor in various situations.

In case of overload, the built-in overload protection will stop the pump for 5 minutes. After that period, the pump is ready to restart if the start conditions are fulfilled.

To reset the pump, switch off the power supply for 1 minute.

The motor is protected in case of:

- Dry running.
- Voltage surges (up to 6000 V) in areas with high lightning intensity. External lightning protection is required.
- Overvoltage.
- Undervoltage.
- Overload.
- Overtemperature.

12.11 Contaminated pumps

Warning

If a pump has been used for a liquid which is injurious to health or toxic, the pump will be classified as contaminated.

If Grundfos is requested to service the pump, Grundfos must be contacted with details about the pumped liquid, etc. *before* the pump is returned for service. Otherwise Grundfos can refuse to accept the pump for service.

Possible costs of returning the pump are paid by the customer.

However, any application for service (no matter to whom it may be made) must include details about the pumped liquid if the pump has been used for liquids which are injurious to health or toxic.

Before a pump is returned, it must be cleaned in the best possible way.

13. Fault finding chart

GB

Warning

Before attempting to diagnose any fault, make sure that the fuses have been removed or the mains switch has been switched off. It must be ensured that the power supply cannot be accidentally switched on.

All rotating parts must have stopped moving.

Warning

All regulations applying to pumps installed in potentially explosive environments must be observed.

It must be ensured that no work is carried out in potentially explosive atmosphere.

Fault	Cause	Remedy
1. The pump does not run.	a) The dry-running sensors are not covered by liquid.	**After power-on:** Allow the liquid level to rise until the dry-running sensors are covered with liquid.
	b) **Three-phase pumps only:** The pump is connected to the power supply with a wrong phase sequence.	Interchange L1 and L2.
	c) Fuses in electric installation blown.	Replace blown fuses. If the new ones blow too, check the electric installation and the submersible drop cable.
	d) Supply failure; short-circuit; fault in cable or motor winding.	Have the cable and motor checked and repaired by a qualified electrician.
	e) Fault in motor electronics.	Have the motor checked and repaired by a Grundfos service engineer.
	f) Deposits on level or dry-running sensors.	Clean the sensor(s).
2. The pump operates, but the motor stops after a short while.	a) Impeller blocked by impurities. Increased current consumption in all three phases.	Clean the impeller.
	b) Increased current consumption due to large voltage drop.	Check that the supply voltage is within the range.
	c) Too high liquid temperature.	Reduce the liquid temperature.
	d) Too high liquid viscosity.	Dilute the liquid.
3. The pump operates at below-standard performance and power consumption.	a) Discharge pipe partly blocked by impurities.	Clean the discharge port.
	b) Valves in the discharge pipe partly closed or blocked.	Check and clean or replace the valves, if necessary.
4. The pump operates, but delivers no liquid.	a) Discharge valve closed or blocked.	Check the discharge valve, and possibly open and/or clean it.
	b) Non-return valve blocked.	Clean the non-return valve.
	c) Air in pump.	Vent the pump.
5. The pump is choked up.	a) Grinder system is worn.	Replace the grinder system.

13.1 Megging

Megging of SEG pumps is not allowed, as the built-in electronics may be damaged.

14. Technical data

14.1 Supply voltage

- 1 x 230 V – 10 %/+ 6 %, 50 Hz.
- 3 x 400 V – 10 %/+ 10 %, 50 Hz.

14.2 Enclosure class

IP68. According to IEC 60529.

14.3 Ex protection

CE Ⓔx II 2 G, Ex bcd IIB T4 Gb according to EN 60079-0: 2006 and Ex d IIB T4 Gb according to IEC 60079-0: 2006.

14.4 Insulation class

F (155 °C).

14.5 Pump curves

Pump curves are available via internet **www.grundfos.com**.

The curves are to be considered as a guide. They must not be used as guarantee curves.

Test curves for the supplied pump are available on request.

14.6 Sound pressure level

The sound pressure level of the pumps is lower than the limiting values stated in the EC Council Directive 98/37/EC relating to machinery.

15. Disposal

This product or parts of it must be disposed of in an environmentally sound way:

1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service workshop.

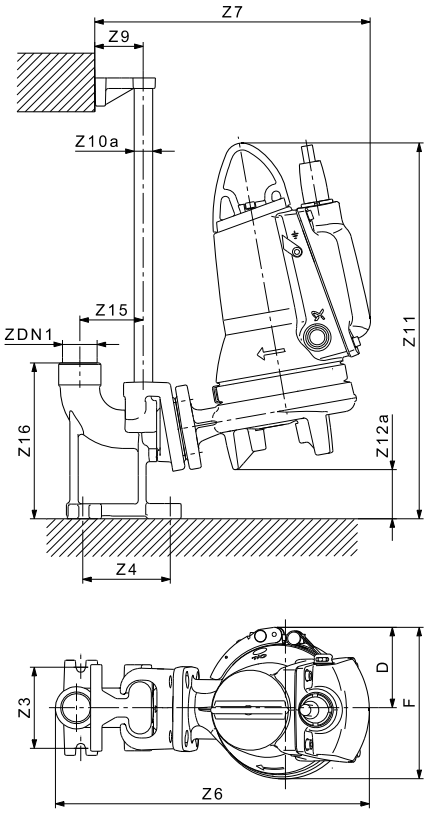

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Fig. A One-pump installation on auto-coupling

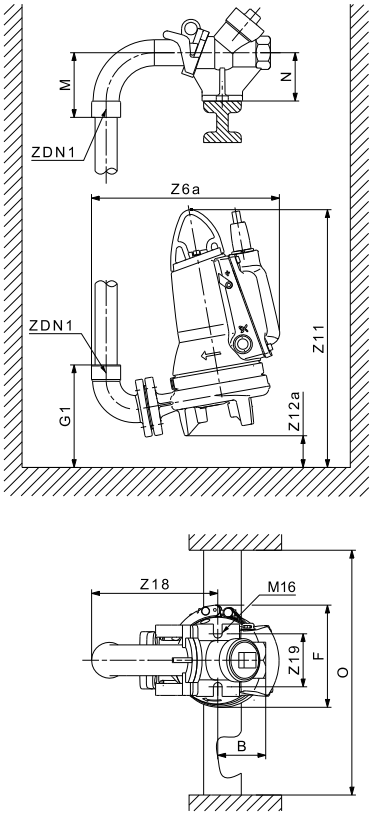

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Fig. B One-pump installation on hookup auto-coupling

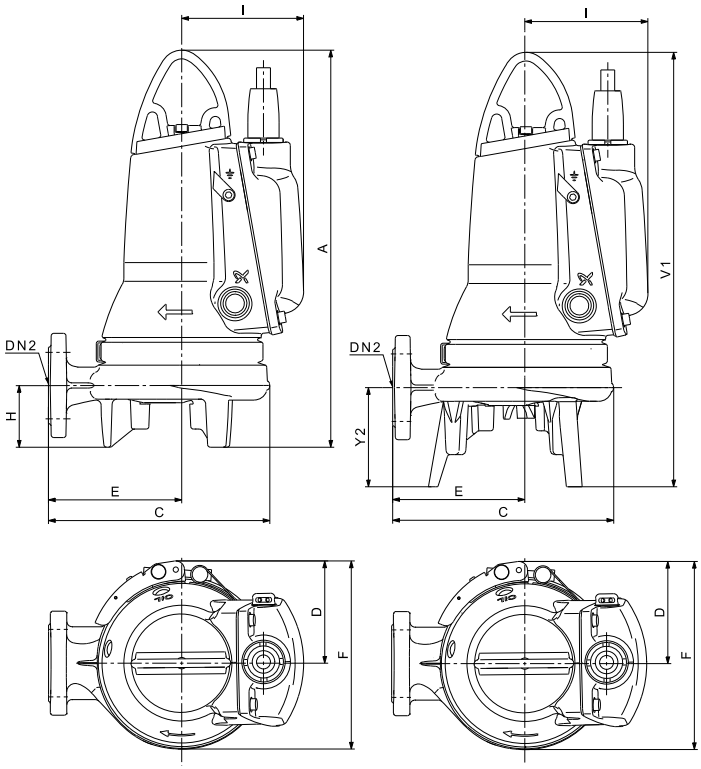

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Fig. C Free-standing Installation

Power [kW]	A	B	C	D	E	F	G	H	I	J	K	M	N	U	O	S	T	V	X	Y
0.9, 1.2 and 1.5	456	100	271	71	255	154	216	99	388	214	140	134	100	536		116	500	68	397	495
2.6	527	100	271	60	292	173	256	119	423	215	166	134	100	619	min. 600	115	582	80	433	531
3.1 and 4.0	567	100	271	60	292	173	256	119	423	214	166	134	100	657		115	622	79	433	531

Pos.	Description (GB)	Beschreibung (D)	Description (F)	Descrizione (I)
6a	Pin	Stift	Broche	Perno
7a	Rivet	Niet	Rivet	Rivetto
9a	Key	Passfeder	Clavette	Chiavetta
37a	O-ring	O-Ring	Joint torique	O-ring
44	Grinder ring	Schneidring	Anneau broyeur	Anello trituratore
45	Grinder head	Schneidkopf	Tête de broyeur	Trituratore
48	Stator	Stator	Stator	Statore
48a	Terminal board	Klemmbrett	Bornier	Morsettiera
49	Impeller	Laufrad	Roue	Girante
50	Pump housing	Pumpengehäuse	Corps de pompe	Corpo pompa
55	Stator housing	Statorgehäuse	Logement de stator	Cassa statore
58	Shaft seal carrier	Gleitringdichtungs-träger	Support de garniture mécanique	Supporto tenuta meccanica
66	Locking ring	Sicherungsring	Anneau de serrage	Anello di arresto
68	Adjusting nut	Justiermutter	Ecrou de réglage	Dado di regolazione
76	Nameplate	Leistungsschild	Plaque signalétique	Targhetta di identificazione
90a	Electronic unit	Elektronikeinheit	Unité électronique	Unità elettronica
90b	O-ring	O-Ring	Joint torique	O-ring
92	Clamp	Spannband	Collier de serrage	Fascetta
102	O-ring	O-Ring	Joint torique	O-ring
103	Bush	Buchse	Douille	Bussola
104	Seal ring	Dichtungsring	Anneau d'étanchéité	Anello di tenuta
105 105a	Shaft seal	Gleitringdichtung	Garniture mécanique	Tenuta meccanica
107	O-rings	O-Ringe	Joints toriques	O-ring
112a	Locking ring	Sicherungsring	Anneau de serrage	Anello di arresto
153	Bearing	Lager	Roulement	Cuscinetto
154	Bearing	Lager	Roulement	Cuscinetto
155	Oil chamber	Ölsperrkammer	Chambre à huile	Camera dell'olio
158	Corrugated spring	Gewellte Feder	Ressort ondulé	Molla ondulata
159	O-ring	O-Ring	Joint torique	O-ring
161	Operating capacitor*	Betriebskondensator*	Condensateur*	Condensatore di marcia*
161b	Nut	Mutter	Ecrou	Dado
161c	Bracket	Halter	Support	Staffa
161d	Washer	Unterlegscheibe	Rondelle	Rondella
161e	Washer	Unterlegscheibe	Rondelle	Rondella
161f	Screw	Schraube	Vis	Vite
172	Rotor/shaft	Rotor/Welle	Rotor/arbre	Gruppo rotore/albero
173	Screw	Schraube	Vis	Vite
173a	Washer	Unterlegscheibe	Rondelle	Rondella
174	Earth screw	Erdungsschraube	Vis terre	Vite di messa a terra

Pos.	Description (GB)	Beschreibung (D)	Description (F)	Descrizione (I)
174a	Washer	Unterlegscheibe	Rondelle	Rondella
176	Inner plug part	Kabelanschluß, innerer Teil	Partie intérieure de la fiche	Parte interna del connettore
181	Outer plug part	Kabelanschluß, äußerer Teil	Partie extérieure de la fiche	Parte esterna del connettore
188a	Screw	Schraube	Vis	Vite
190	Lifting bracket	Tragbügel	Poignée de levage	Maniglia
193	Oil screw	Ölschraube	Bouchon d'huile	Tappo dell'olio
193a	Oil	Öl	Huile	Olio
194	Gasket	Dichtung	Joint d'étanchéité	Guarnizione
198	O-ring	O-Ring	Joint torique	O-ring
285	Dry-running sensor**	Trockenlaufsensor**	Capteur de marche à sec**	Sensore di marcia a secco**
285a	O-ring	O-Ring	Joint torique	O-ring
285b	Set screw	Einstellschraube	Jeu de vis	Vite di fermo
287	Level sensor	Niveausensor	Capteur de niveau	Sensore di livello
287a	Protection cap	Schutzkappe	Bouchon de protection	Tappo di protezione
287b	O-ring	O-Ring	Joint torique	O-ring
287c	Set screw	Einstellschraube	Jeu de vis	Vite di fermo
288	Pt1000 sensor	Pt1000-Sensor	Capteur Pt1000	Sensore Pt1000

* Single-phase pumps only.

** Standard pumps have only one dry-running sensor.

Pos.	Descripción (E)	Descrição (P)	Περιγραφή (GR)	Omschrijving (NL)
6a	Pasador	Pino	Πείρος	Paspen
7a	Remache	Rebite	Πριτσίνι	Klinknagel
9a	Chaveta	Chaveta	Κλειδί	Spie
37a	Junta tórica	O-ring	Δακτύλιος-Ο	O-ring
44	Anillo de corte	Anilha da trituradora	Δακτύλιος άλεσης	Snijring
45	Cabezal de corte	Cabeça da trituradora	Κεφαλή άλεσης	Snijkop
48	Estator	Estator	Στάτης	Stator
48a	Caja de conexiones	Caixa terminal	Κλέμες σύνδεσης	Aansluitblok
49	Impulsor	Impulsor	Πτερωτή	Waaier
50	Cuerpo de bomba	Voluta da bomba	Περίβλημα αντλίας	Pomphuis
55	Alojamiento de estator	Carcaça do estator	Περίβλημα στάτη	Motorhuis
58	Soporte de cierre	Suporte do empanque	Φορέας στυπιοθλίπτη άξονα	Dichtingsplaat
66	Anillo de cierre	Anilha de fixação	Ασφαλιστικός δακτύλιος	Borgring
68	Tuerca de ajuste	Porca de ajuste	Ρυθμιστικό περικόχλιο	Afstelmoer
76	Placa de identificación	Placa de característi-cas	Πινακίδα	Typeplaat
90a	Unidad electrónica	Unidade electrónica	Ηλεκτρονική μονάδα	Elektronische unit
90b	Junta tórica	O-ring	Δακτύλιος-Ο	O-ring
92	Abrazadera	Gancho	Σφιγκτήρας	Span ring
102	Junta tórica	O-ring	Δακτύλιος-Ο	O-ring
103	Casquillo	Anilha	Αντιτριβικός δακτύλιος	Bus
104	Anillo de cierre	Anilha de empanque	Στεγανοποιητικός δακτύλιος	Oliekeerring
105 105a	Cierre	Empanque	Στυπιοθλίπτης άξονα	As afdichting
107	Juntas tóricas	O-rings	Δακτύλιοι-Ο	O-ringen
112a	Anillo de cierre	Anilha de fixação	Ασφαλιστικός δακτύλιος	Borgring
153	Cojinete	Rolamento	Έδρανο	Kogellager
154	Cojinete	Rolamento	Έδρανο	Kogellager
155	Cámara de aceite	Compartimento do óleo	Θάλαμος λαδιού	Oliekamer
158	Muelle ondulado	Mola	Αυλακωτό ελατήριο	Drukring
159	Juntas tóricas	O-rings	Δακτύλιοι-Ο	O-ring
161	Condensador operativo*	Condensador de funcionamento*	Πυκνωτής λειτουργίας*	Bedrijfscondensator*
161b	Tuerca	Porca	Παξιμάδι	Moer
161c	Soporte	Suporte	Βραχίονας στήριξης	Beugel
161d	Arandela	Anilha	Ροδέλα	Ring
161e	Arandela	Anilha	Ροδέλα	Ring
161f	Tornillo	Parafuso	Βίδα	Schroef
172	Rotor/eje	Rotor/veio	Ρότορας/άξονας	Rotor/as
173	Tornillo	Parafuso	Βίδα	Schroef

Pos.	Descripción (E)	Descrição (P)	Περιγραφή (GR)	Omschrijving (NL)
173a	Arandela	Anilha	Ροδέλα	Ring
174	Tornillo de tierra	Parafuso de terra	Βίδα γείωσης	Aardschroef
174a	Arandela	Anilha	Ροδέλα	Ring
176	Parte de clavija interior	Parte interna do bujão	Εσωτερικό τμήμα φις	Kabelconnector inwendig
181	Parte de clavija exterior	Parte externa do bujão	Εξωτερικό τμήμα φις	Kabelconnector uitwendig
188a	Tornillo	Parafuso	Βίδα	Inbusbout
190	Asa	Suporte de elevação	Χειρολαβή	Ophangbeugel
193	Tornillo de aceite	Parafuso do óleo	Βίδα λαδιού	Inbusbout
193a	Aceite	Óleo	Λάδι	Olie
194	Junta	Junta	Τσιμούχα	Pakkingring
198	Junta tórica	O-ring	Δακτύλιος-Ο	O-ring
285	Sensor de marcha en seco**	Sensor de funcionamento em seco**	Αισθητήρας ξηρής λειτουργίας**	Droogloopsensor**
285a	Junta tórica	O-ring	Δακτύλιος-Ο	O-ring
285b	Tornillo ajuste	Conjunto de parafusos	Βίδα ρύθμισης	Stelbout
287	Sensor de nivel	Sensor de nível	Αισθητήρας στάθμης	Niveausensor
287a	Tapón de protección	Tampa de protecção	Προστατευτικό καπάκι	Beschermkap
287b	Junta tórica	O-ring	Δακτύλιος-Ο	O-ring
287c	Tornillo ajuste	Conjunto de parafusos	Βίδα ρύθμισης	Stelbout
288	Sensor Pt1000	Sensor Pt1000	Αισθητήρας Pt1000	Pt1000 sensor

* Single-phase pumps only.

** Standard pumps have only one dry-running sensor.

Pos.	Beskrivning (S)	Kuvaus (FIN)	Beskrivelse (DK)	Opis (PL)
6a	Stift	Tappi	Stift	Kołek
7a	Nit	Niitti	Nitte	Nit
9a	Kil	Kiila	Feder	Klin
37a	O-ring	O-rengas	O-ring	Pierścień O-ring
44	Skärring	Repijärengas	Snittering	Pierścień tnący
45	Skärhuvud	Repijä	Snittehoved	Głowica tnąca
48	Stator	Staattori	Stator	Stator
48a	Kopplingsplint	Kytkentälevy	Klembræt	Listwa przyłączeniowa
49	Pumphjul	Juoksupyörä	Løber	Wirnik
50	Pumphus	Pumppupesä	Pumpehus	Korpus pompy
55	Statorhus	Staattoripesä	Statorhus	Obudowa statora
58	Axeltätningshållare	Akselitiivistekannatin	Akseltætningsholder	Mocowanie uszczelnienia wału
66	Låsring	Lukkorengas	Låsering	Pierścień mocujący
68	Justermutter	Säätömutteri	Justermøtrik	Nakrętka dopasowująca
76	Typskylt	Arvokilpi	Typeskilt	Tabliczka znamionowa
90a	Elektronikenhet	Elektroniikkayksikkö	Elektronikenhed	Skrzynka z układami elektronicznymi
90b	O-ring	O-rengas	O-ring	Pierścień O-ring
92	Spännband	Kiinnityspanta	Spændebånd	Zacisk
102	O-ring	O-rengas	O-ring	Pierścień O-ring
103	Bussning	Holkki	Bøsning	Tulejka
104	Simmerring	Tiivisterengas	Simmerring	Pierścień uszczelniający
105 105a	Axeltätning	Akselitiiviste	Akseltætning	Uszczelnienie wału
107	O-ringar	O-renkaat	O-ringe	Pierścień O-ring
112a	Låsring	Lukkorengas	Låsering	Pierścień mocujący
153	Lager	Laakeri	Leje	Łożysko
154	Lager	Laakeri	Leje	Łożysko
155	Oljekammare	Öljytila	Oliekammer	Komorze olejowej
158	Fjäder	Aaltojousi	Bølgefjeder	Sprężyna falista
159	O-ring	O-rengas	O-ring	Pierścień O-ring
161	Driftskondensator*	Käyntikondensaattori*	Driftskondensator*	Kondensator roboczy*
161b	Mutter	Mutteri	Møtrik	Nakrętka
161c	Konsol	Sanka	Beslag	Uchwyt
161d	Bricka	Aluslevy	Skive	Podkładka
161e	Bricka	Aluslevy	Skive	Podkładka
161f	Skruv	Ruuvi	Skrue	Śruba
172	Rotor/axel	Roottori/akseli	Rotor/aksel	Rotor/wał
173	Skruv	Ruuvi	Skrue	Śruba
173a	Bricka	Aluslevy	Skive	Podkładka

Pos.	Beskrivning (S)	Kuvaus (FIN)	Beskrivelse (DK)	Opis (PL)
174	Jordskruv	Maadoitusruuvi	Jordskrue	Zacisk uziemiający
174a	Bricka	Aluslevy	Skive	Podkładka
176	Kontakt, inre del	Sisäpuolinen tulppaosa	Indvendig stikdel	Część zewn. wtyczki
181	Kontakt, yttre del	Ulkopuolinen tulppaosa	Udvendig stikdel	Część wewn. wtyczki
188a	Skruv	Ruuvi	Skrue	Śruba
190	Lyftbygel	Nostosanka	Løftebøjle	Uchwyt
193	Oljeskruv	Öljytulppa	Olieskrue	Śruba olejowa
193a	Olja	Öljy	Olie	Olej
194	Packning	Tiiviste	Pakning	Uszczelka
198	O-ring	O-rengas	O-ring	Pierścień O-ring
285	Torrkörningsgivare**	Kuivakäyntianturi**	Tørløbssensor**	Czujnik suchobiegu**
285a	O-ring	O-rengas	O-ring	Pierścień O-ring
285b	Justerskruv	Asetusruuvi	Pinolskrue	Zestaw śrub
287	Nivågivare	Pinta-anturi	Niveausensor	Czujnik poziomu
287a	Skyddskåpa	Suojakansi	Beskyttelseshætte	Osłona ochronna
287b	O-ring	O-rengas	O-ring	Pierścień O-ring
287c	Justerskruv	Asetusruuvi	Pinolskrue	Zestaw śrub
288	Pt1000-givare	Pt1000-anturi	Pt1000-sensor	Czujnik Pt1000

* Single-phase pumps only.

** Standard pumps have only one dry-running sensor.

Pos.	Наименование (RU)	Megnevezés (H)	Opis (SI)
6a	Штифт	Csap	Zatič
7a	Заклепка	Szegecs	Zakovica
9a	Шпонка	Rögzítőék	Ključ
37a	Уплотнительное кольцо круглого сечения	O-gyűrűk	O-obroči
44	Кольцо режущего механизма	Őrlőgyűrű	Drobilni obroč
45	Головка режущего механизма	Őrlőfej	Drobilna glava
48	Статор	Állórész	Stator
48a	Выходной щит	Kapcsoló tábla	Priključna letvica
49	Рабочее колесо	Járókerék	Tekalno kolo
50	Корпус насоса	Szivattyúház	Ohišje črpalke
55	Корпус статора	Állórészház	Ohišje statorja
58	Корпус уплотнения вала	Tengelytömítés-keret	Nosilec tesnila osi
66	Стопорная шайба	Rögzítőgyűrű	Zaklepni obroček
68	Регулировочная гайка	Beállítóanya	Prilagoditvena matica
76	Фирменная табличка с номинальными техническими данными	Adattábla	Tipska ploščica
90a	Электронный блок	Elektromos egység	Elektronska enota
90b	Уплотнительное кольцо круглого сечения	O-gyűrűk	O-obroči
92	Стяжная скоба	Bilincs	Sponka
102	Уплотнительное кольцо круглого сечения	O-gyűrű	O-obroč
103	Втулка	Tömítőgyűrű	Podloga ležaja
104	Уплотнительное кольцо	Tömítőgyűrű	Tesnilni obroč
105 105a	Уплотнение вала	Tengelytömítés	Tesnilo osi
107	Уплотнительное кольцо круглого сечения	O-gyűrűk	O-obroči
112a	Стопорная шайба	Rögzítőgyűrű	Zaklepni obroček
153	Подшипник	Csapágy	Ležaj
154	Подшипник	Csapágy	Ležaj
155	Масляной камере	Olajkamra	Oljni komori
158	Упорное нажимное кольцо	Hullámrugó	Vzmet
159	Уплотнительное кольцо круглого сечения	O-gyűrűk	O-obroči
161	Рабочий конденсатор*	Üzemi kondenzátor*	Delovni kondenzator*
161b	Гайка	Anya	Matica
161c	Кронштейн	Bilincs	Nosilec
161d	Шайба	Alátét	Tesnilni obroč
161e	Шайба	Alátét	Tesnilni obroč
161f	Винт	Csavar	Vijak
172	Ротор/вал	Forgórész/tengely	Rotor/os

Pos.	Наименование (RU)	Megnevezés (H)	Opis (SI)
173	Винт	Csavar	Vijak
173a	Шайба	Alátét	Tesnilni obroč
174	Винт заземления	Földelő csavar	Ozemljitveni vijak
174a	Шайба	Alátét	Tesnilni obroč
176	Внутренние детали электросоединителя	Belső kábelbevezetés	Notranji vtični del
181	Наружные детали электросоединителя	Külső kábelbevezetés	Zunanji vtični del
188a	Винт	Csavar	Vijak
190	Ручка	Emelőfül	Ročaj
193	Резьбовая пробка	Olajtöltőnyílás zárócsavarja	Oljni vijak
193a	Масло	Olaj	Olje
194	Прокладка	Tömítés	Tesnilni obroč
198	Уплотнительное кольцо круглого сечения	O-gyűrű	O-obroč
285	Датчик сухого хода**	Szárazonfutás szenzor**	Senzor zaščite proti suhemu teku**
285a	Уплотнительное кольцо круглого сечения	O-gyűrű	O-obroč
285b	Установочный винт	Beállítócsavar	Nastavitveni vijak
287	Датчик контроля уровня	Szinttávadó	Senzor nivoja
287a	Защитная крышка	Védősapka	Zaščitna kapica
287b	Уплотнительное кольцо круглого сечения	O-gyűrű	O-obroč
287c	Установочный винт	Beállítócsavar	Nastavitveni vijak
288	Датчик Pt1000	Pt1000 érzékelő	Senzor Pt1000

* Single-phase pumps only.

** Standard pumps have only one dry-running sensor.

Pos.	Opis (HR)	Naziv (SER)	Instalație fixă (RO)	Описание (BG)
6a	nožica	Klin	Pin	Щифт
7a	zarezani čavao	Zakovica	Nit	Нит
9a	opruga	Klin	Cheie	Фиксатор
37a	O-prsten	O-prsten	Inel tip O	О-пръстени
44	prsten za rezanje	Prsten seckalice	Inel tocător	Пръстен
45	glava za rezanje	Glava seckalice	Cap tocător	Режеща глава
48	stator	Stator	Stator	Статор
48a	priključna letvica	Priključna letva	Înveliş stator	Клеморед
49	rotor	Propeler	Rotor	Работно колело
50	kućište crpke	Kućište pumpe	Carcasă pompa	Помпен корпус
55	kućište statora	Stator kućišta	Carcasă stator	Корпус на статора
58	držač brtve	Nosač zaptivanja osovine	Etanşare	Носач на уплътнението при вала
66	sigurnosni prsten	Prsten pričvršćivanja	Inel închidere	Фиксиращ пръстен
68	matica za justiranje	Matica za podešavanje	Cap reglaj	Регулираща гайка
76	natpisna pločica	Pločica za obeležavanje	Etichetă	Табела
90a	elektronička jedinica	Električna jedinica	Unitate electronică	Електронен блок
90b	O-prsten	O-prsten	Inel tip O	О-пръстени
92	zatezna traka	Obujmica spajanja	Şurub	Скоба
102	O-prsten	O-prsten	Inel tip O	О-пръстени
103	brtvenica	Čaura	Bucşă	Втулка
104	brtveni prsten	Zaptivni prsten	Inel etanşare	Уплътняващ пръстен
105 105a	brtva vratila	Zaptivka osovine	Etanşare	Уплътнение при вала
107	O-prsten	O-prsten	Inel tip O	О-пръстени
112a	sigurnosni prsten	Prsten pričvršćivanja	Inel închidere	Фиксиращ пръстен
153	ležaj	Kuglični ležaj	Rulment	Лагер
154	ležaj	Kuglični ležaj	Rulment	Лагер
155	komora za ulje	Uljnoj komori	Camera de ulei	Маслото в камерата
158	valovita opruga	Sigurnosni prste	Arc canelat	Гофрирана пружина
159	O-prsten	O-prsten	Inel tip O	О-пръстени
161	radni kondenzator*	Radni kondezator*	Condensator*	Работен кондензатор*
161b	matica	Navrtka	Piuliţă	Гайка
161c	nosač	Držač	Consolă	Скоба
161d	podložna pločica	Prsten podloške	Spălător	Шайба
161e	podložna pločica	Prsten podloške	Spălător	Шайба
161f	vijak	Zavrtanj	Filet	Винт
172	rotor/vratilo	Rotor/osovina	Rotor/ax	Ротор/вал
173	vijak	Zavrtanj	Filet	Винт
173a	podložna pločica	Prsten podloške	Spălător	Шайба

Pos.	Opis (HR)	Naziv (SER)	Instalație fixă (RO)	Описание (BG)
174	vijak za uzemljenje	Zavrtanj uzemljenja	Şurub de legare la pământ	Винт за заземяване
174a	podložna pločica	Prsten podloške	Spălător	Шайба
176	kabel. priključak, nutarnji dio	Unutrašnji deo konektora	Cablu conector intrare	Вътрешна част на щепсела
181	kabel. priključak, vanjski dio	Spoljni deo konektora	Cablu conector ieşire	Външна част на щепсела
188a	vijak	Zavrtanj	Filet	Винт
190	transportni stremen	Ručica	Mâner	Ръкохватка
193	vijak za ulje	Zavrtanj za ulje	Şurub ulei	Винт при камерата за масло
193a	ulje	Ulje	Ulei	Масло
194	brtva	Podloška	Spălător	Гарнитура
198	O-prsten	O-prsten	Inel tip O	О-пръстен
285	senzor rada na suho**	Senzor rada na suvo**	Senzor pentru mers în gol**	Сензор за "суха" работа**
285a	O-prsten	O-prsten	Inel tip O	О-пръстен
285b	set vijaka	Set zavrtanja	Şurub de reglare	Фиксиращ винт
287	senzor razine	Senzor nivoa	Senzor de nivel	Сензор за ниво
287a	zaštitna kapa	Zaštitna kapa	Capac de protecție	Защитна капачка
287b	O-prsten	O-prsten	Inel tip O	О-пръстен
287c	set vijaka	Set zavrtanja	Şurub de reglare	Фиксиращ винт
288	Pt1000 senzor	Pt1000 senzor	Senzor Pt1000	Pt1000 сензор

* Single-phase pumps only.

** Standard pumps have only one dry-running sensor.

Pos.	Popis (CZ)	Popis (SK)	Tanım (TR)
6a	Kolík	Kolík	Pim
7a	Nýt	Nýt	Perçin
9a	Pero	Pero	Anahtar
37a	O-kroužek	O-krúžok	O-ring
44	Řezací kolo	Rezacie koleso	Parçalayıcı halka
45	Hlava mělnicího zařízení	Hlava rezacieho zariadenia	Parçalayıcı başlık
48	Stator	Stator	Stator
48a	Svorkovnice	Svorkovnica	Klemens bağlantısı
49	Oběžné kolo	Obežné koleso	Çark
50	Těleso čerpadla	Teleso čerpadla	Pompa gövdesi
55	Těleso statoru	Teleso statora	Stator muhafazası
58	Unašeč ucpávky	Unášač upchávky	Salmastra taşıyıcı
66	Pojistný kroužek	Poistný krúžok	Kilitleme halkası
68	Stavěcí matice	Stavacie matice	Ayar somunu
76	Typový štítek	Typový štítok	Bilgi etiketi
90a	Elektronická jednotka	Elektronická jednotka	Elektronik ünite
90b	O-kroužek	O-krúžok	O-ring
92	Fixační objímka	Fixačná objímka	Kelepçe
102	O-kroužek	O-krúžok	O-ring
103	Pouzdro	Púzdro	Burç
104	Těsnicí kroužek	Tesniaci krúžok	Sızdırmazlık halkası
105 105a	Hřídelová ucpávka	Hriadeľová upchávka	Salmastra
107	O-kroužky	O-krúžky	O-ringler
112a	Pojistný kroužek	Poistný krúžok	Kilitleme halkası
153	Ložisko	Ložisko	Rulman
154	Ložisko	Ložisko	Rulman
155	Olejové komoře	Olejovej komore	Yağ miktarı
158	Tlačná pružina	Tlačná pružina	Oluklu yay
159	O-kroužek	O-krúžok	O-ring
161	Provozní kondenzátor*	Prevádzkový kondenzátor*	Çalıştırma kondansatörü*
161b	Matice	Matica	Somun
161c	Držák	Konzola	Eleman
161d	Podložka	Podložka	Pul
161e	Podložka	Podložka	Pul
161f	Šroub	Skrutka	Vida
172	Rotor/hřídel	Rotor/hriadeľ	Rotor/mil
173	Šroub	Skrutka	Vida
173a	Podložka	Podložka	Pul
174	Zemnicí šroub	Uzemňovacia skrutka	Toprak civatası
174a	Podložka	Podložka	Pul

Pos.	Popis (CZ)	Popis (SK)	Tanım (TR)
176	Vnitřní část kabelové průchodky	Vnútorná časť káblovej priechodky	İç fiş kısmı
181	Vnější část kabelové průchodk	Vonkajšia časť káblovej priechodky	Dış fiş kısmı
188a	Šroub	Skrutka	Vida
190	Zvedací rukojeť	Dvíhacia rukoväť	Kaldırma kolu
193	Olejová zátka	Olejová zátka	Yağ vidası
193a	Olej	Olej	Yağ
194	Těsnicí kroužek	Tesniaci krúžok	Conta
198	O-kroužek	O-krúžok	O-ring
285	Snímač provozu nasucho**	Snímač prevádzky nasucho**	Kuru çalıştırma sensörü**
285a	O-kroužek	O-krúžok	O-ring
285b	Stavěcí šroub	Regulačná skrutka	Ayar vidası
287	Hladinový snímač	Hladinový snímač	Seviye sensörü
287a	Ochranná čepička	Ochranné viečko	Koruma başlığı
287b	O-kroužek	O-krúžok	O-ring
287c	Stavěcí šroub	Regulačná skrutka	Ayar vidası
288	Snímač Pt1000	Snímač Pt1000	Pt1000 sensörü

* Single-phase pumps only.

** Standard pumps have only one dry-running sensor.

Pos.	Seletus (EE)	Aprašymas (LT)	Apraksts (LV)
6a	Tihvt	Vielokaištis	Tapa
7a	Neet	Kniedė	Kniede
9a	Kiil	Kaištis	Atslēga
37a	O-ring	O žiedas	Apaļa šķērsgriezuma blīvgredzens
44	Purusti plaat	Smulkintuvo žiedas	Griezējgredzens
45	Purusti pea	Smulkintuvo galvutė	Griezējgalva
48	Staator	Statorius	Stators
48a	Klemmliist	Kontaktų plokštė	Spaiļu plate
49	Tööratas	Darbaratis	Darbrats
50	Pumbapesa	Siurblio korpusas	Sūkņa korpuss
55	Staatori korpus	Statoriaus korpusas	Statora korpuss
58	Võllitihendi alusplaat	Veleno sandariklio lizdas	Vārpstas blīvējuma turētājs
66	Lukustusrõngas	Fiksavimo žiedas	Sprostgredzens
68	Seademutter	Reguliavimo veržlė	Regulēšanas uzgrieznis
76	Andmeplaat	Vardinė plokštelė	Pases datu plāksnīte
90a	Elektroonikaplokk	Elektronikos blokas	Elektroniskā ierīce
90b	O-ring	O žiedas	Apaļa šķērsgriezuma blīvgredzens
92	Klamber	Apkaba	Apskava
102	O-ring	O žiedas	Apaļa šķērsgriezuma blīvgredzens
103	Puks	Įvorė	Ieliktnis
104	Tihend	Sandarinimo žiedas	Blīvējošais gredzens
105 105a	Võllitihend	Veleno sandariklis	Vārpstas blīvējums
107	O-ringid	O žiedai	Apaļa šķērsgriezuma blīvgredzeni
112a	Lukustusrõngas	Fiksavimo žiedas	Sprostgredzens
153	Laager	Guolis	Gultnis
154	Laager	Guolis	Gultnis
155	Õlikamber	Alyvos kamera	Eļļas kamera
158	Vedruseib	Rifliuota spyruoklė	Viļņotā atspere
159	O-ring	O žiedas	Apaļa šķērsgriezuma blīvgredzens
161	Töökondensaator*	Darbinis kondensatorius*	Darba kondensators*
161b	Mutter	Veržlė	Uzgrieznis
161c	Kronstein	Rankena	Skava
161d	Seib	Poveržlė	Paplāksne
161e	Seib	Poveržlė	Paplāksne
161f	Polt	Varžtas	Skrūve
172	Rootor/võll	Rotorius/velenas	Rotors/vārpsta
173	Polt	Varžtas	Skrūve

Pos.	Seletus (EE)	Aprašymas (LT)	Apraksts (LV)
173a	Seib	Poveržlė	Paplāksne
174	Maanduspolt	Įžeminimo varžtas	Zemēšanas skrūve
174a	Seib	Poveržlė	Paplāksne
176	Pistiku sisemine pool	Vidinė kištuko dalis	Spraudņa iekšējā daļa
181	Pistiku välimine pool	Išorinė kištuko dalis	Spraudņa ārējā daļa
188a	Polt	Varžtas	Skrūve
190	Tõsteaas	Kėlimo rankena	Rokturis
193	Õlikambri kork	Alyvos varžtas	Eļļas aizgrieznis
193a	Õli	Alyva	Eļļa
194	Tihend	Tarpiklis	Blīvslēgs
198	O-ring	O žiedas	Apaļa šķērsgriezuma blīvgredzens
285	Kuivkäiguandur**	Sausosios eigos jutiklis**	Bezšķidruma darbības indikācijas sensors**
285a	O-ring	O žiedas	Apaļa šķērsgriezuma blīvgredzens
285b	Seadepolt	Reguliavimo varžtas	Iestatīšanas skrūve
287	Nivooandur	Lygio jutiklis	Līmeņa sensors
287a	Kaitsekork	Apsauginis dangtelis	Aizsargvāciņš
287b	O-ring	O žiedas	Apaļa šķērsgriezuma blīvgredzens
287c	Seadepolt	Reguliavimo varžtas	Iestatīšanas skrūve
288	Pt1000 andur	Pt1000 jutiklis	Pt1000 sensors

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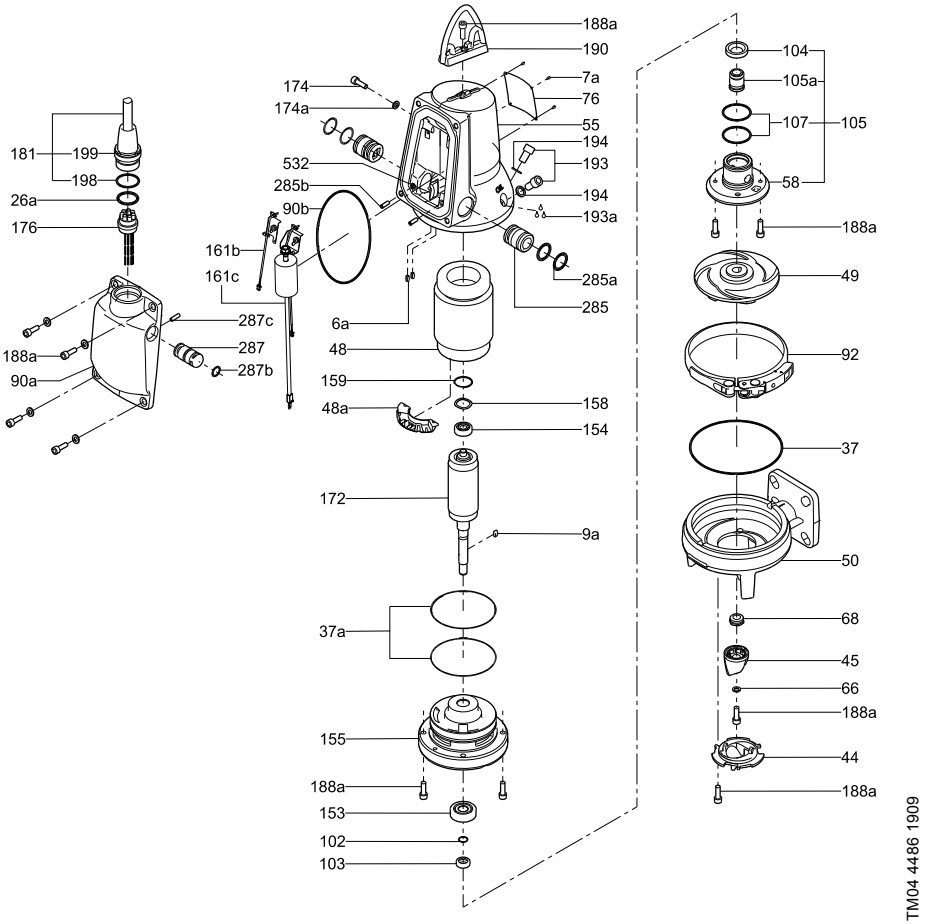

Fig. D SEG, 0.9 - 1.5 kW

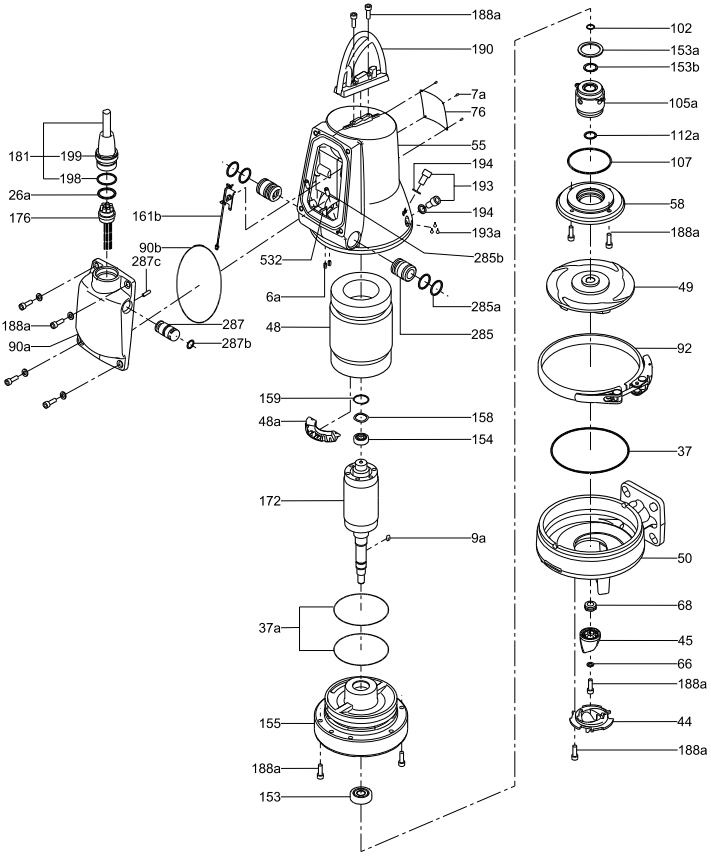

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Fig. E SEG, 2.6 - 4 kW

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