
Unilift KP 150, KP 250, KP 350

Installation and operating instructions

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



(GB) Declaration of Conformity

We **Grundfos** declare under our sole responsibility that the products **Unilift KP 150, KP 250 and KP 350**, to which this declaration relates, are in conformity with the Council Directives on the approximation of the laws of the EC Member States relating to

- Machinery (98/37/EC).
Standard used: EN ISO 12100.
- Electromagnetic compatibility (89/336/EEC).
Standards used: EN 61000-6-2 and EN 61000-6-3.
- Electrical equipment designed for use within certain voltage limits (73/23/EEC) [95].
Standards used: EN 60335-1: 1994 and EN 60335-2-41: 1996.
- Construction products (89/106/EEC).
Standard used: EN 12050-2.

(F) Déclaration de Conformité

Nous **Grundfos** déclarons sous notre seule responsabilité que les produits **Unilift KP 150, KP 250 et KP 350** auxquels se réfère cette déclaration sont conformes aux Directives du Conseil concernant le rapprochement des législations des Etats membres CE relatives à

- Machines (98/37/CE).
Standard utilisé: EN ISO 12100.
- Compatibilité électromagnétique (89/336/CEE).
Standards utilisés: EN 61000-6-2 et EN 61000-6-3.
- Matériel électrique destiné à employer dans certaines limites de tension (73/23/CEE) [95].
Standards utilisés: EN 60335-1: 1994 et EN 60335-2-41: 1996.
- Produits de construction (89/106/CEE).
Standard utilisé: EN 12050-2.

(E) Declaración de Conformidad

Nosotros **Grundfos** declaramos bajo nuestra única responsabilidad que los productos **Unilift KP 150, KP 250 y KP 350** a los cuales se refiere esta declaración son conformes con las Directivas del Consejo relativas a la aproximación de las legislaciones de los Estados Miembros de la CE sobre

- Máquinas (98/37/CE).
Norma aplicada: EN ISO 12100.
- Compatibilidad electromagnética (89/336/CEE).
Normas aplicadas: EN 61000-6-2 y EN 61000-6-3.
- Material eléctrico destinado a utilizarse con determinadas límites de tensión (73/23/CEE) [95].
Normas aplicadas: EN 60335-1: 1994 y EN 60335-2-41: 1996.
- Productos de construcción (89/106/CEE).
Norma aplicada: EN 12050-2.

(GR) Δήλωση Συμμόρφωσης

Εμείς η **Grundfos** δηλώνουμε με αποκλειστικά δική μας ευθύνη ότι τα προϊόντα **Unilift KP 150, KP 250 και KP 350** συμμορφώνονται με την Οδηγία του Συμβουλίου επί της σύγκλισης των νόμων των Κρατών Μελών της Ευρωπαϊκής Ένωσης σε σχέση με τα

- Μηχανήματα (98/37/ΕC).
Πρότυπο που χρησιμοποιήθηκε: EN ISO 12100.
- Ηλεκτρομαγνητική συμβατότητα (89/336/ΕΕC).
Πρότυπα που χρησιμοποιήθηκαν: EN 61000-6-2 και EN 61000-6-3.
- Ηλεκτρικές συσκευές σχεδιασμένες για χρήση εντός ορισμένων ορίων ηλεκτρικής τάσης (73/23/ΕΕC) [95].
Πρότυπα που χρησιμοποιήθηκαν: EN 60335-1: 1994 και EN 60335-2-41: 1996.
- Προϊόντα κατασκευών (89/106/ΕΕC).
Πρότυπο που χρησιμοποιήθηκε: EN 12050-2.

(S) Försäkran om överensstämmelse

Vi **Grundfos** försäkrar under ansvar, att produkterna **Unilift KP 150, KP 250 och KP 350**, som omfattas av denna försäkran, är i överensstämmelse med Rådets Direktiv om inbördes närmande till EU-medlemsstaternas lagstiftning, avseende

- Maskinell utrustning (98/37/EC).
Använd standard: EN ISO 12100.
- Elektromagnetisk kompatibilitet (89/336/EC).
Använda standarder: EN 61000-6-2 och EN 61000-6-3.
- Elektrisk material avsedd för användning inom vissa spänningsgränser (73/23/EC) [95].
Använda standarder: EN 60335-1: 1994 och EN 60335-2-41: 1996.
- Produkter för bygg och anläggning (89/106/EC).
Använd standard: EN 12050-2.

(D) Konformitätserklärung

Wir **Grundfos** erklären in alleiniger Verantwortung, dass die Produkte **Unilift KP 150, KP 250 und KP 350**, auf die sich diese Erklärung bezieht, mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EG-Mitgliedstaaten übereinstimmen

- Maschinen (98/37/EC).
Norm, die verwendet wurde: EN ISO 12100.
- Elektromagnetische Verträglichkeit (89/336/EWG).
Normen, die verwendet wurden: EN 61000-6-2 und EN 61000-6-3.
- Elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen (73/23/EWG) [95].
Normen, die verwendet wurden: EN 60335-1: 1994 und EN 60335-2-41: 1996.
- Bauprodukte (89/106/EWG).
Norm, die verwendet wurde: EN 12050-2.

(I) Dichiarazione di Conformità

Noi **Grundfos** dichiariamo sotto la nostra esclusiva responsabilità che i prodotti **Unilift KP 150, KP 250 e KP 350** ai quali questa dichiarazione se riferisce sono conformi alle Direttive del Consiglio concernente il ravvicinamento delle legislazioni degli Stati membri CE relative a

- Macchine (98/37/CE).
Standard usato: EN ISO 12100.
- Compatibilità elettromagnetica (89/336/CEE).
Standard usati: EN 61000-6-2 e EN 61000-6-3.
- Materiale elettrico destinato ad essere utilizzato entro certi limiti di tensione (73/23/CEE) [95].
Standard usati: EN 60335-1: 1994 e EN 60335-2-41: 1996.
- Prodotti da costruzione (89/106/CEE).
Standard usato: EN 12050-2.

(P) Declaração de Conformidade

Nós **Grundfos** declaramos sob nossa única responsabilidade que os produtos **Unilift KP 150, KP 250 e KP 350** aos quais se refere esta declaração estão em conformidade com as Directivas do Conselho das Comunidades Europeias relativas à aproximação das legislações dos Estados Membros respeitantes à

- Máquinas (98/37/CE).
Norma utilizada: EN ISO 12100.
- Compatibilidade electromagnética (89/336/CEE).
Normas utilizadas: EN 61000-6-2 e EN 61000-6-3.
- Material eléctrico destinado a ser utilizado dentro de certos limites de tensão (73/23/CEE) [95].
Normas utilizadas: EN 60335-1: 1994 e EN 60335-2-41: 1996.
- Produtos de construção (89/106/CEE).
Norma utilizada: EN 12050-2.

(NL) Overeenkomstigheidsverklaring

Wij **Grundfos** verklaren geheel onder eigen verantwoordelijkheid dat de producten **Unilift KP 150, KP 250 en KP 350** waarop deze verklaring betrekking heeft in overeenstemming zijn met de Richtlijnen van de Raad inzake de onderlinge aanpassing van de wetgevingen van de Lid-Staten betreffende

- Machines (98/37/EG).
Norm: EN ISO 12100.
- Elektromagnetische compatibiliteit (89/336/EEG).
Normen: EN 61000-6-2 en EN 61000-6-3.
- Elektrisch materiaal bestemd voor gebruik binnen bepaalde spanningsgrenzen (73/23/EEG) [95].
Normen: EN 60335-1: 1994 en EN 60335-2-41: 1996.
- Bouwproducten (89/106/EEG).
Norm: EN 12050-2.

(FIN) Vastaavuusvakuutus

Me **Grundfos** vakuutamme yksin vastuullisesti, että tuotteet **Unilift KP 150, KP 250 ja KP 350**, jota tämä vakuutus koskee, noudattavat direktiiviejä jotka käsittelevät EY:n jäsenvaltioiden koneellisia laitteita koskevien lakien yhdenmukaisuutta seur.:

- Koneet (98/37/EY).
Käytetty standardi: EN ISO 12100.
- Elektromagneettinen vastaavuus (89/336/EY).
Käytetyt standardit: EN 61000-6-2 ja EN 61000-6-3.
- Määrätyt jänniterajotusten puitteissa käytettävät sähköiset laitteet (73/23/EY) [95].
Käytetty standardi: EN 60335-1: 1994 ja EN 60335-2-41: 1996.
- Rakennustuotteet (89/106/EY).
Käytetty standardi: EN 12050-2.

(DK) Overensstemmelseserklæring

Vi **Grundfos** erklærer under ansvar, at produkterne **Unilift KP 150, KP 250 og KP 350**, som denne erklæring omhandler, er i overensstemmelse med Rådets direktiver om indbyrdes tilnærmelse til EF medlemsstaternes lovgivning om

- Maskiner (98/37/EF).
- Anvendt standard: EN ISO 12100.
- Elektromagnetisk kompatibilitet (89/336/EØF).
- Anvendte standarder: EN 61000-6-2 og EN 61000-6-3.
- Elektrisk materiel bestemt til anvendelse inden for visse spændingsgrænser (73/23/EØF) [95].
- Anvendte standarder: EN 60335-1: 1994 og EN 60335-2-41: 1996.
- Byggevarer (89/106/EØF).
- Anvendt standard: EN 12050-2.

(RU) Свидетельство о соответствии требованиям

Мы, фирма **Grundfos**, со всей ответственностью заявляем, что изделия **Unilift KP 150, KP 250 и KP 350**, к которым и относится данное свидетельство, отвечают требованиям следующих указаний Совета ЕС об унификации законодательных предписаний стран-членов ЕС:

- Машиностроение (98/37/ЕС).
- Применявшиеся стандарты: Евростандарт EN ISO 12100.
- Электромагнитная совместимость (89/336/ЕЭС).
- Применявшиеся стандарты: Евростандарт EN 61000-6-2 и EN 61000-6-3.
- Электрические машины для эксплуатации в пределах определенного диапазона значений напряжения (73/23/ЕЭС) [95].
- Применявшиеся стандарты: Евростандарт EN 60335-1: 1994 и EN 60335-2-41: 1996.
- Строительные изделия (89/106/ЕЭС).
- Применявшиеся стандарты: Евростандарт EN 12050-2.

(SI) Izjava o ustreznosti

Mi, **Grundfos**, pod polno odgovornostjo izjavljamo, da so izdelki **Unilift KP 150, KP 250 in KP 350**, na katere se ta izjava nanaša, v skladu z naslednjimi smernicami Sveta za uskladitev pravnih predpisov držav članic Evropske skupnosti:

- Stroji (98/37/EG).
- Uporabljena norma: EN ISO 12100.
- Elektromagnetna kompatibilnost (89/336/EWG).
- Uporabljeni normi: EN 61000-6-2 in EN 61000-6-3.
- Električna pogonska sredstva za uporabo v določenih napetostnih mejah (73/23/EWG) [95].
- Uporabljeni normi: EN 60335-1: 1994 in EN 60335-2-41: 1996.
- Izdelek gradnje (89/106/EEC).
- Uporabljeni standard: EN 12050-2.

(YU) Izjava o konformitetu

Mi, **Grundfos**, izjavljujemo pod potpunom odgovornošću da su proizvodi **Unilift KP 150, KP 250 i KP 350** na koje se odnosi ova izjava u saglasnosti sa smernicama i uputstvima Saveta za usaglašavanje pravnih propisa članica Evropske unije:

- mašine (98/37/EG).
- korišćen standard: EN ISO 12100.
- elektromagnetna usagašenost (89/336/EWG).
- korišćeni standardi: EN 61000-6-2 i EN 61000-6-3.
- električna oprema razvijena za korišćenje unutar određenih naponskih granica (73/23/EWG) [95].
- korišćeni standardi: EN 60335-1: 1994 i EN 60335-2-41: 1996.
- Konstruktivni proizvodi (89/106/EEC)
- korišćen standard: EN 12050-2.

(BG) Декларация за съответствие

Ние, фирма **Grundfos** заявяваме с пълна отговорност, че продуктите **Unilift KP 150, KP 250 и KP 350**, за които се отнася настоящата декларация, отговарят на следните указания на Съвета за уеднаквяване на правните разпоредби на държавите членки на ЕО:

- Машини (98/37/ЕО).
- Приложена норма: EN ISO 12100.
- Електромагнетична поносимост (89/336/ЕИО).
- Приложени норми: EN 61000-6-2 и EN 61000-6-3.
- Електрически машини и съоръжения за употреба в рамките на определени граници на напрежение на електрическия ток (73/23/ЕИО) [95].
- Приложени норми: EN 60335-1: 1994 и EN 60335-2-41: 1996.
- Конструктивни продукти (89/106/ЕИО)
- Приложени норми: EN 12050-2.

(PL) Deklaracja zgodności

My, **Grundfos**, oświadczamy z pełną odpowiedzialnością, że nasze wyroby **Unilift KP 150, KP 250 i KP 350**, których deklaracja niniejsza dotyczy, są zgodne z następującymi wytycznymi Rady d/s ujednolicenia przepisów prawnych krajów członkowskich EG:

- maszyny (98/37/EG),
- zastosowana norma: EN ISO 12100.
- zgodność elektromagnetyczna (89/336/EWG),
- zastosowane normy: EN 61000-6-2 i EN 61000-6-3.
- wyposażenie elektryczne do stosowania w określonym zakresie napięć (73/23/EWG) [95],
- zastosowane normy: EN 60335-1: 1994 i EN 60335-2-41: 1996.
- Budowa wyrobu (89/106/EEC)
- Zastosowana norma: EN 12050-2.

(H) Konformitási nyilatkozat

Mi, a **Grundfos**, egydéli felelősséggel kijelentjük, hogy az **Unilift KP 150, KP 250 és KP 350** termékek, amelyekre jelen nyilatkozat vonatkozik, megfelelnek az Európai Unió tagállamainak jogi irányelveit összehangoló tanács alábbi irányelveinek:

- Gépek (98/37/EK).
- Alkalmazott szabvány: EN ISO 12100.
- Elektromágneses összeférhetőség (89/336/EGK).
- Alkalmazott szabványok: EN 61000-6-2 és EN 61000-6-3.
- Meghatározott feszültség határon belül használt elektromos eszközök (73/23/EGK) [95].
- Alkalmazott szabványok: EN 60335-1: 1994 és EN 60335-2-41: 1996.
- Összeépített berendezések (89/106/EEC)
- Alkalmazott szabvány: EN 12050-2.

(HR) Izjava o usklađenosti

Mi, **Grundfos**, izjavljujemo uz punu odgovornost, da su proizvodi **Unilift KP 150, KP 250 i KP 350**, na koje se ova izjava odnosi, skladni smjernicama Savjeta za prilagodbu propisa država-članica EZ:

- Strojevi (98/37/EZ).
- Korištena norma: EN ISO 12100.
- Elektromagnetska kompatibilnost (89/336/EEZ).
- Korištena norme: EN 61000-6-2 i EN 61000-6-3.
- Električni pogonski uređaji za korištenje unutar određenih granica napona (73/23/EEZ) [95].
- Korištena norme: EN 60335-1: 1994 i EN 60335-2-41: 1996.
- Građevni proizvodi (89/106/EEZ).
- Korištena norma: EN 12050-2.

(RO) Declarație de conformitate

Noi, **Grundfos**, declarăm asumându-ne întreaga responsabilitate că produsele **Unilift KP 150, KP 250 și KP 350** la care se referă această declarație sunt în conformitate cu Directivele Consiliului în ceea ce privește alinierea legislațiilor Statelor Membre ale CE, referitoare la:

- Utilaje (98/37/CE).
- Standard aplicat: EN ISO 12100.
- Compatibilitate electromagnetică (89/336/CEE).
- Standarde aplicate: EN 61000-6-2 și EN 61000-6-3.
- Echipamente electrice destinate utilizării între limite exacte de tensiune (73/23/CEE) [95].
- Standarde aplicate: EN 60335-1: 1994 și EN 60335-2-41: 1996.
- Construcția produselor (89/106/EEC).
- Standard folosit: EN 12050-2.

(CZ) Prohlášení o konformitě

My firma **Grundfos** prohlašujeme na svou plnou odpovědnost, že výrobky **Unilift KP 150, KP 250 a KP 350** na něž se toto prohlášení vztahuje, jsou v souladu s ustanoveními směrnice Rady pro sblížení právních předpisů členských států Evropského společenství v oblastech:

- strojírenství (98/37/EG),
- použitá norma: EN ISO 12100.
- elektromagnetická kompatibilita (89/336/EWG),
- použité normy: EN 61000-6-2 a EN 61000-6-3.
- provozování spotřebičů v toleranci napětí (73/23/EWG) [95],
- použité normy: EN 60335-1: 1994 a EN 60335-2-41: 1996.
- Konstruktivní výrobky (89/106/EEC).
- Použitá norma: EN 12050-2.

(SK) Prehľadzenie o konformite

My firma **Grundfos**, na svoju plnú zodpovednosť prehlasujeme, že výrobky **Unilift KP 150, KP 250 a KP 350**, na ktoré sa toto prehlásenie vzťahuje, sú v súlade s nasledovnými smernicami Rady pro zblíženie právnych predpisov členských zemí Európskej únie:

- Stroje (98/37/EG),
Použitá norma: EN ISO 12100.
- Elektromagnetická kompatibilita (89/336/EWG),
Použitá normy: EN 61000-6-2 a EN 61000-6-3.
- Elektrické prevádzkové prostriedky, použité v určitom napätovom rozsahu (73/23/EWG) [95],
Použitá normy: EN 60335-1: 1994 a EN 60335-2-41: 1996.
- Konštrukčné výrobky (89/106/EEC)
Použitá norma: EN 12050-2.

(TR) Uygunluk Bildirgesi

Biz **Grundfos** olarak, bu beyanda belirtilen **Unilift KP 150, KP 250 ve KP 350** ürünlerinin,

- Makina (98/37/EC),
Kullanılan standart: EN ISO 12100.
- Elektromanyetik uyumluluk (89/336/EEC),
Kullanılan standartlar: EN 61000-6-2 ve EN 61000-6-3.
- Belli voltaj sınırlarında kullanılmak üzere üretilmiş elektrik donanımı (73/23/EEC) [95].
Kullanılan standartlar: EN 60335-1: 1994 ve EN 60335-2-41: 1996.
- Yapı ürünleri (89/106/EEC)
Kullanılan standart: EN 12050-2.

ile ilgili olarak Avrupa topluluğu'na Üye Devletlerin yasalarında yer alan Belediye Yönetmeliklerine uygun olduğunu, tüm sorumluluğu bize ait olmak üzere beyan ederiz.

(EE) Vastavuse deklaratsioon

Meie **Grundfos** deklareerime enda ainuvastutuse, et toode **Unilift KP 150, KP 250 ja KP 350**, mille kohta käesolev juhend käib, on vastavuses EL nõukogu Direktiividega EMÜ liikmesriikide seaduste ühitamise kohta, mis käsitlevad:

- Masinad (98/37/EC),
Kasutatud standardit: EN ISO 12100.
- Elektromagnetilist ühilduvust (89/336/EEC),
Kasutatud standardit: EN 61000-6-2 ja EN 61000-6-3.
- Madalapinge-elektriseadmed (73/23/EEC) [95].
Kasutatud standardit: EN 60335-1: 1994 ja EN 60335-2-41: 1996.
- Ehituslikud tooted (89/106/EEC),
Kasutatud standardit: EN 12050-2.

(LT) Atitikties deklaracija

Mes, **Grundfos**, su visa atsakomybe pareiškiame, kad gaminiai **Unilift KP 150, KP 250 ir KP 350**, kuriems skirta ši deklaracija, atitinka Tarybos Direktyvas dėl Europos Ekonominės Bendrijos šalių narių įstatymų suderinimo šiose srityse:

- Mašinų (98/37/EC),
Naudojamas standartas: EN ISO 12100.
- Elektromagnetinis suderinamumas (89/336/EEC),
Naudojami standartai: EN 61000-6-2 ir EN 61000-6-3.
- Elektriniai prietaisai, skirti naudoti tam tikrose įtampų ribose (73/23/EEC) [95].
Naudojami standartai: EN 60335-1: 1994 ir EN 60335-2-41: 1996.
- Statybinės medžiagos (89/106/EEC),
Naudojamas standartas: EN 12050-2.

Bjerringbro, 1st February 2006



Svend Aage Kaas
Technical Director

Unilift KP 150, KP 250, KP 350

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Before beginning installation procedures, these installation and operating instructions should be studied carefully. The installation and operation should also be in accordance with local regulations and accepted codes of good practice.

1. General description

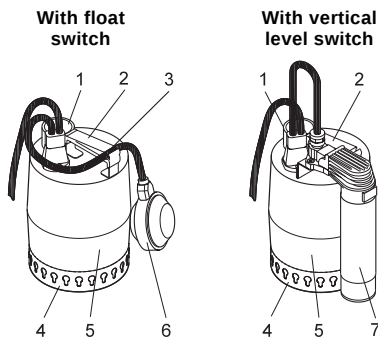


Fig. 1

1. Discharge port Rp 1½.
2. Handle.
3. Clamp.
4. Suction strainer.
5. Outer casing.
6. Float switch.
7. Vertical level switch.

1.1 Applications

The Grundfos Unilift KP 150, KP 250 and KP 350 pumps are single-stage submersible pumps designed for pumping grey wastewater.

Pumps with float switch:

The pump is capable of pumping water which contains a limited quantity of solids up to 10 mm in diameter without being blocked or damaged.

The pump is suitable for automatic as well as manual operation and can be installed in a permanent installation or used as a portable pump.

The pump is suitable for:

- pumping of wastewater from washing machines, baths, sinks, etc. from low-lying parts of buildings up to sewer level.
- drainage of cellars or buildings prone to flooding.
- pumping in draining wells.
- pumping in wells for surface water with inlets from roof gutters, pits, tunnels, etc.
- emptying swimming pools, ponds or fountains.

Pumps with vertical level switch:

The pump must only be used for the pumping of clean ground water and drain water.

General:



The pump must not be used in or at swimming pools, garden ponds, etc. when there are persons in the water.

The pump is *not* suitable for pumping:

- liquids containing long fibres,
- inflammable liquids (oil, petrol, etc.),
- aggressive liquids.

Note: The pump contains approx. 70 ml of non-poisonous motor liquid that may pollute the pumped liquid if the pump should leak.

1.2 Operating conditions

Liquid temperature:

Minimum 0°C. The maximum liquid temperature depends on the rated voltage of the pump, see the table below.

Voltage	Maximum liquid temperature
1 x 100 V, 50 Hz	+35°C
1 x 110 V, 50 Hz	+40°C
1 x 100-110 V, 50 Hz*	+40°C
1 x 220-230 V, 50 Hz	+50°C
1 x 220-240 V, 50 Hz*	+50°C
1 x 230-240 V, 50 Hz	+50°C
1 x 100 V, 60 Hz	+35°C
1 x 115 V, 60 Hz	+50°C (+45°C KP 350)
1 x 220 V, 60 Hz	+40°C
3 x 200 V, 50 Hz	+35°C
3 x 380-400 V, 50 Hz*	+50°C
3 x 380-415 V, 50 Hz	+50°C
3 x 200 V, 60 Hz	+35°C

At intervals of at least 30 minutes, the pump is allowed, however, to run at maximum +70°C for periods not exceeding 2 minutes.

* Voltage variant for Unilift KP 350

Installation depth: Maximum 10 metres below liquid level.

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

Note: Depending on local regulations, a pump with 10 metres of mains cable must be used if the pump is used as a portable pump for different applications.

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

The operating voltage and frequency are marked on the nameplate. Please make sure that the motor is suitable for the electricity supply on which it will be used.



As a precaution, the pump must be connected to a socket with earth connection. It is recommended to fit the permanent installation with an earth leakage circuit breaker (ELCB) with a tripping current $< 30 \text{ mA}$.

The pump must be connected to an external mains switch with a minimum contact gap of 3 mm in all poles.

The pump incorporates thermal overload protection and requires no additional motor protection.

Motors for Unilift KP 350, 3 x 200 V, 50 and 60 Hz, must be connected to a motor starter.

If the motor is overloaded, it will stop automatically.



When cooled to normal temperature, the motor restarts automatically.

Three-phase pumps which are to be used with a float switch/vertical level switch must be connected to the mains supply via a contactor, see fig. 2.

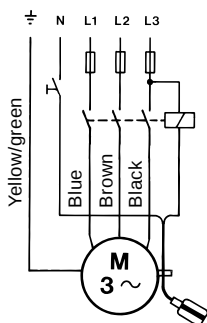


Fig. 2

(Three-phase pumps only)

The direction of rotation should be checked every time the pump is connected to a new installation.

Check the direction of rotation as follows:

1. Position the pump on a plane surface.
2. Start and stop the pump.
3. Observe the movement of the pump (jerk). If the pump moves as shown in fig. 3 (clockwise), the direction of rotation is correct (counter-clockwise). If not, two of the supply phases to the motor should be interchanged.

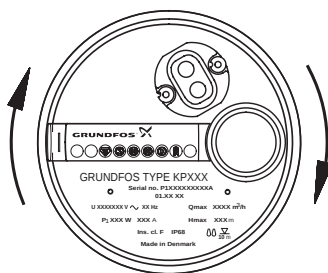


Fig. 3

If the pump is connected to a piping system, the direction of rotation can be checked as follows:

1. Start the pump and check the quantity of water.
2. Stop the pump and interchange two of the phases to the motor.
3. Start the pump and check the quantity of water.
4. Stop the pump.
5. Compare the results taken under points 1 and 3, and the connection which gives the larger quantity of water is the correct direction of rotation.

3. Installation

3.1 Connection

The discharge pipe/hose is fitted to the Rp 1¼ discharge port. Steel pipes can be screwed directly into the pump discharge port.

For permanent installation a union fitted to the discharge pipe at a convenient point is recommended to facilitate ease of removal for cleaning and servicing. If a hose is fitted, use a screwed hose coupling.

The pipe threads or hose coupling should be sealed using teflon sealing tape or similar material.

Note: The pump must not be installed hanging from the discharge pipe.

When the pump is installed in a permanent installation **with** float switch/vertical level switch, a non-return valve must be fitted in the discharge pipe/hose. If the pump is installed in a well and with a minimum free cable length according to figure 9, the minimum dimensions of the well should be as shown in figure 4 to ensure free movability of the float switch. Figure 5 shows a pump with a vertical level switch.

Furthermore, the well should be sized according to the relation between the water flow to the well and the pump capacity.

With float switch

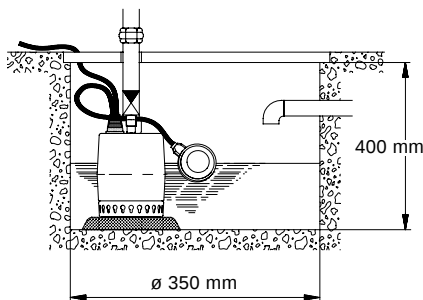


Fig. 4

TM00 1547 1697

With vertical level switch

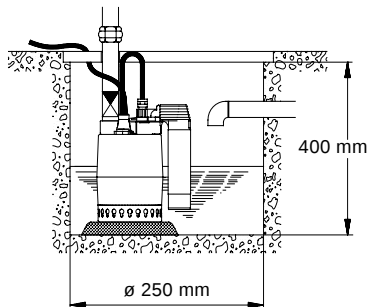


Fig. 5

TM01 1109 1098

3.2 Pump location

Pumps without or with float switch can be used in vertical position with the discharge port uppermost or in horizontal or tilted position with the discharge port as the highest point of the pump, see fig. 6.

Note: Pumps with vertical level switch must be used in vertical position.

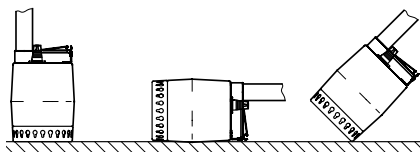


Fig. 6

TM00 1548 0493

When the pipe/hose has been connected, the pump is ready for use.

Note: Do not lift the pump by means of the electric cable. Lift the pump by means of the discharge pipe/hose or a wire secured to the handle of the pump.

Before positioning the pump, make sure that the suction strainer will not be blocked or partly blocked by silt, mud or similar materials.

This can be avoided by positioning the pump on bricks, an iron plate, etc., see fig. 7.

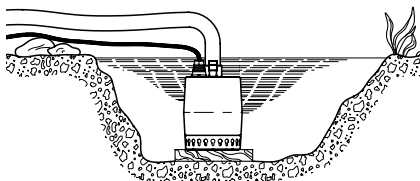


Fig. 7

TM00 1549 0493

3.3 Adjustment of float switch

The difference in level between start and stop can be adjusted by changing the free cable length between the handle of the pump and the float switch.

Large difference in level: long free cable. This cable length must not exceed 150 mm, see fig. 8.

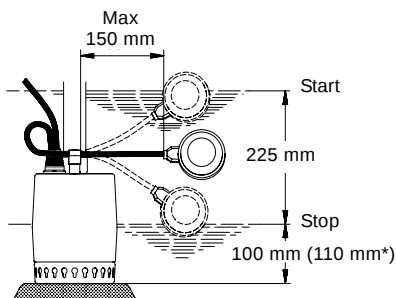


Fig. 8

TM00 1552 1697

* For Unlift KP 350 the distance between the bottom of the suction strainer and the lowest level of the float is 110 mm.

Small difference in level: short free cable. This cable length must at least be 70 mm, see fig. 9.

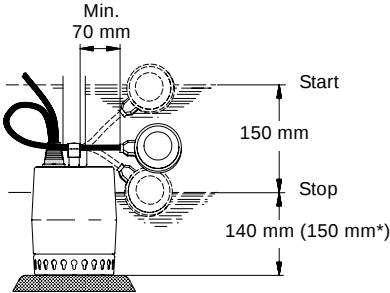


Fig. 9

* For Unilift KP 350 the distance between the bottom of the suction strainer and the lowest level of the float is 150 mm.

3.4 Vertical level switch

For pumps with vertical level switch, the difference in level between start and stop is not adjustable. The start/stop levels are shown in fig. 10.

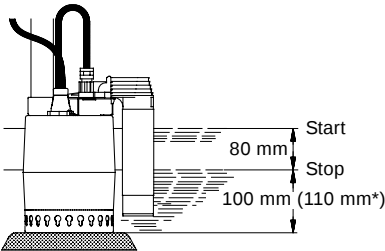


Fig. 10

* For Unilift KP 350 the distance between the bottom of the suction strainer and the lowest level of the level switch is 110 mm.

4. Operation and maintenance

Under normal operating conditions, the pump is maintenance-free.

If the pump has been used for liquids other than clean water, it should be flushed through with clean water immediately after use.

As a precaution, the suction strainer must always be fitted to the pump during operation.

Never dismantle the pump unless the electricity supply has been switched off.

During dismantling, caution should be exercised as there will be access to sharp edges, etc. which may cut.



4.1 Cleaning the pump

If the pump does not deliver a sufficient quantity of water because of sediment, dismantle and clean the pump.

The dismantling of the pump is carried out as follows:

1. Disconnect the electricity supply.
2. Allow the pump to drain.
3. Carefully loosen the suction strainer by inserting a screwdriver in the recess between the outer casing and the strainer and pressing it hard. Repeat the procedure until the strainer is free and can be removed, see fig. 11.

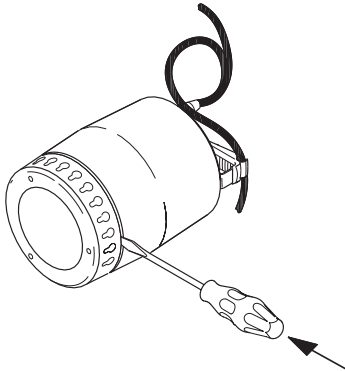


Fig. 11

4. Clean the suction strainer and refit it.

If the pump still does not deliver a sufficient quantity of water, dismantle the pump as follows:

1. Disconnect the electricity supply.
2. Turn the pump housing 90° counter-clockwise using a screwdriver, see the arrow on the pump housing. Pull off the housing, see fig. 12.

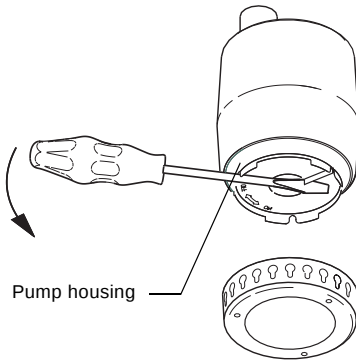
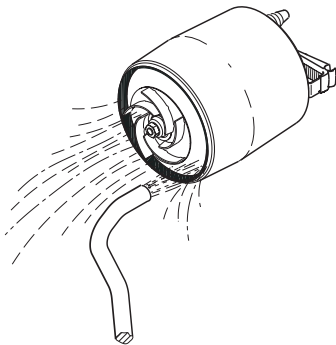


Fig. 12

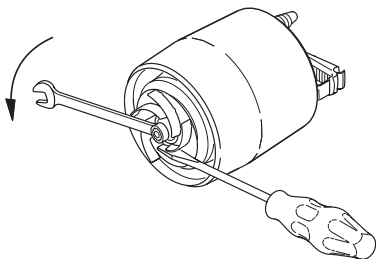
3. Clean and flush the pump with water to remove possible impurities between the motor and the outer casing. Clean the impeller, see fig. 13.



TM03 1169 1205

Fig. 13

4. Check that the impeller can rotate freely. If not, remove the impeller:
- Slacken and remove the nut on the motor shaft (13 mm). Prevent the impeller from rotating by means of a screwdriver, see fig. 14.
 - Clean the impeller and around the shaft.



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Fig. 14

5. Check the impeller, the pump housing and the sealing part. Replace possible defective parts.
6. Assemble the pump in reverse order of dismantling.

Note: Check before and when fitting the pump housing that the sealing part is positioned correctly, see fig. 15. Moisten the sealing part with water to facilitate the fitting.

4.2 Replacement of parts

The impeller, the pump housing and the sealing part can be replaced.

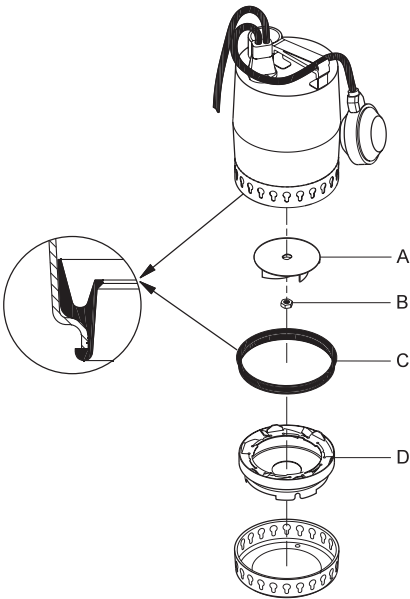
The part numbers and the components included in the service kits will appear from the tables below and fig. 15.

Pump type	Part number
Impeller kit	
KP 150, 50 Hz	015778
KP 250, 50 Hz	015779
KP 150, 60 Hz	015783
KP 250, 60 Hz	015784
KP 350, 50 Hz	015785
KP 350, 60 Hz	015786
Pump housing	
KP 150 and KP 250	015770
KP 350	015771

Service kit	Pos.	Description	Qty.
Impeller kit	A	Impeller	1
	B	Nut	1
	C	Sealing part	1
Pump housing	D	Pump housing	1

If pump components other than those mentioned above are damaged or defective, please contact your pump supplier.

Note: A possible replacement of the cable or the float switch/vertical level switch must be carried out by an authorised Grundfos service workshop.



TM03 1166 1205

Fig. 15

5. Fault finding chart

Fault	Cause
1. Motor does not start.	a) Supply failure. b) Pump switched off by float switch/vertical level switch. c) Fuses are blown. d) Thermal relay has cut out the electricity supply to the motor (see section 2. <i>Electrical connection</i>).
2. Thermal relay trips out after short time of operation.	a) Temperature of pumped liquid higher than that stated in section 1.2 <i>Operating conditions</i> . b) Pump partly blocked by impurities (see section 4. <i>Operation and maintenance</i>). c) Pump mechanically blocked (see section 4. <i>Operation and maintenance</i>).
3. Pump runs but gives insufficient water.	a) Pump partly blocked by impurities (see section 4. <i>Operation and maintenance</i>). b) Discharge pipe/hose partly blocked. Check the non-return valve, if fitted. c) Check the impeller, the pump housing and the sealing part (see section 4. <i>Operation and maintenance</i>). d) Three-phase pumps only: Incorrect direction of rotation (see section 2.1 <i>Checking of direction of rotation</i>).
4. Pump runs but gives no water.	a) Pump blocked by impurities (see section 4. <i>Operation and maintenance</i>). b) Non-return valve, if fitted, in discharge pipe/hose blocked in closed position. c) Liquid level is too low. During normal operation, the liquid level must be above the strainer. d) Pumps with float switch: The free cable of the float switch is too long (see section 3.3 <i>Adjustment of float switch</i>).

6. Disposal

Disposal of this product or parts of it must be carried out according to the following guidelines:

1. Use the local public or private waste collection service.
2. In case such waste collection service does not exist or cannot handle the materials used in the product, please deliver the product or any hazardous materials from it to your nearest Grundfos company or service workshop.

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