

EN Instruction Manual

US 62 E /4	US 73 E /12	US 75 E /0	US 151 E /0
US 62 D /4	US 73 D /12	US 75 D /0	US 151 D /0
US 102 E /0	US 73 HE /1	US 105 E /0	US 251 D /0
US 102 D /10	US 103 E /0	US 105 D /0	US 253 D /0
US 152 E /0	US 103 D /1	US 155 E /0	
US 152 D /0	US 103 HE /0	US 155 D /0	
	US 153 E /1		
	US 153 D /1		
US 62 ES /4	US 73 ES /12	US 75 ES /0	US 151 ES /0
US 62 DS /4	US 73 DS /12	US 75 DS /0	US 151 DS /0
US 102 ES /0	US 73 HES /1	US 105 ES /0	US 251 DS /0
US 102 DS /10	US 103 ES /0	US 105 DS /0	US 253 DS /0
US 152 ES /0	US 103 DS /1	US 155 ES /0	
US 152 DS /0	US 103 HES /0	US 155 DS /0	
	US 153 ES /2		
	US 153 DS /3		

EN Instruction Manual: Safety instructions • Areas of application • Electrical connection • Installation • Servicing • Technical data • Appendix

You have purchased a product made by JUNG PUMPEN and with it, therefore, also excellent quality and service. Secure this service by carrying out the installation works in accordance with the instructions, so that our product can perform its task to your complete satisfaction. Please remember that damage caused by incorrect installation or handling will adversely affect the guarantee.

Therefore please adhere to the instructions in this manual!

As with all electrical devices, this product can also fail to operate due to an interruption in the electricity supply or due to a technical defect. If this could result in damage, a mains-independent alarm system must be installed. Depending on the application, you may also wish to install an emergency power generator, or a second system as a back-up.

FR Instructions de service: Consignes de sécurité • Utilisation • Branchement électrique • Installation • Maintenance • Caractéristiques techniques • Annexe

Vous avez opté pour un produit JUNG PUMPEN, synonyme de qualité et de performance. Assurez-vous cette performance par une installation conforme aux directives: notre produit pourra ainsi remplir sa mission à votre entière satisfaction. N'oubliez pas que les dommages consécutifs à un maniement non conforme porteront préjudice au droit à la garantie.

Veillez donc respecter les consignes contenues dans ces instructions !

Comme tout autre appareil électrique, ce produit peut aussi tomber en panne suite à une absence de tension ou à un défaut technique. Si une telle panne peut être la source d'un dommage, il est impératif d'installer un système d'alarme indépendant du secteur. En fonction de l'application, à vous de juger de l'utilité de prévoir un groupe électrogène ou une deuxième installation.

NL Veiligheidsinformatie • Gebruik • Elektrische aansluiting • Installatie • Onderhoud • Technische gegevens

U hebt een product van JUNG PUMPEN gekocht en daarmee kwaliteit en vermogen aangeschaft. Zorg dat dit vermogen tot zijn recht komt door een installatie volgens de voorschriften, zodat ons product zijn taak tot volle tevredenheid kan uitvoeren.

Denk eraan dat schade als gevolg van oneigenlijk gebruik van invloed kan zijn op de garantie.

Neem daarom de instructies in de gebruikshandleiding in acht!

Net als elk ander elektrisch apparaat, kan ook dit product uitvallen door ontbrekende netspanning of een technisch mankement. Als u

daardoor schade kunt oplopen, dan moet een netonafhankelijke alarminstallatie worden ingebouwd. Afhankelijk van de toepassing moet u na metingen eventueel ook een noodstroom-aggregaat en een tweede installatie inplannen.

PL Instrukcja eksploatacji: Instrukcje bezpieczeństwa • Zastosowanie • Przyłącze elektryczne • Montaż • Serwisowanie • Dane techniczne • Załącznik

Zakupili Państwo produkt JUNG PUMPEN, przez co również jakość i wydajność. Prosimy zapewnić sobie efektywność działania poprzez przepisowe zainstalowanie produktu, aby jego użytkownik był z niego w pełni zadowolony. Prosimy mieć na względzie, że w wyniku niewłaściwego obchodzenia się z produktem może dojść do utraty uprawnień gwarancyjnych.

Prosimy zatem o przestrzeganie wskazówek z instrukcji obsługi.

Urządzenie to, tak jak każde urządzenie elektryczne może ulec uszkodzeniu na skutek podłączenia do niewłaściwego źródła prądu. Jeśli w wyniku tego może dojść do awarii, wtedy należy zainstalować alarm niezależny od zasilania sieciowego. W zależności od zastosowania powinni Państwo w miarę swych możliwości przewidzieć zasilanie awaryjne na przykład z agregatu prądowłórczego.

CZ Návod pro provoz: Bezpečnostní pokyny • Použití • Elektrické zapojení • Montáž • Údržba • Technické údaje • Příloha

Zakoupili jste výrobek od firmy JUNG PUMPEN a tak získali kvalitu a výkon. Zajistěte si tento výkon instalací podle předpisů, aby náš výrobek plnil svoji úlohu k vaší plné spokojenosti. Myslete na to, že škody vzniklé v důsledku neodborného zacházení mají vliv na záruku.

Dodržujte proto pokyny uvedené v Návodu pro provoz!

Jako každý jiný elektropřístroj, může také tento výrobek mít výpadek v důsledku chybějícího napájení ze sítě nebo technické závady. Jestliže vám tím může být způsobena škoda, musí být instalováno poplašné zařízení nezávislé na elektrické síti. V závislosti na způsobu použití musíte dle svého uvážení instalovat eventuelně nouzový agregát nebo druhé zařízení.

SK Návod na obsluhu: Bezpečnostné pokyny • Použitie • Elektrické pripojenie • Inštalácia • Údržba • Technické údaje • Príloha

Zakúpili ste si výrobok od spoločnosti JUNG PUMPEN, čím ste nadobudli kvalitu a výkon. Zabezpečte si tento výkon predpísanou inštaláciou, aby náš výrobok mohol plniť svoju úlohu k Vašej úplnej spokojnosti. Myslite na to, že škody vzniknuté v dôsledku neodborného používania čerpadla obmedzujú záruku.

Rešpektujte preto pokyny uvedené v tomto návode na obsluhu!

Ako u každého iného elektrického zariadenia môže aj u tohto výrobku dôjsť k výpadku v dôsledku chýbajúceho sieťového napätia alebo technickej chyby. Ak by Vám týmto mohla vzniknúť škoda, musíte nainštalovať nezávislý alarm. V závislosti od použitia musíte podľa vlastného uváženia naplánovať aj agregát núdzového prúdu alebo záložné čerpadlo.

HU Üzemeltetési útmutató: Biztonsági utasítások • Alkalmazási terület • Beépítés • Karbantartás • Műszaki adatok • Melléklet

Ön egy JUNG PUMPEN terméket és ezáltal minőséget és teljesítményt vásárolt. Kérjük, hogy ezen Üzemeltetési útmutató szerint telepítse a terméket, hogy az az Ön teljes megelegedésére üzemelhessen. Ne felejtse el, hogy a szakszerűtlen kezeléssel okozott károsokra nem terjed ki a garancia.

Ezért kérjük, tartsa be az Üzemeltetési útmutatóban leírtakat!

Bármely más villamos készülékhez hasonlóan előfordulhat, hogy ez a termék sem működik például áramszünet vagy meghibásodás miatt. Ha emiatt kár keletkezhet Önöknél, akkor egy hálózattól független riasztóberendezést kell beépíteni. Az adott alkalmazás alapján Önnek mérlegelnie kell, nem célszerű-e betervezni egy tartalék gépet vagy egy szűkség-áramfejlesztőt. Giat. Duipis euissi. Igna feugiamet, velese dui esto ercil enit velenibh ea feu facil ut velestrud digna cortie tat, quat. Iquissent vulla feu facilit exer sumsandre molore venim vent luptatum

RO Manual de utilizare: Instrucțiuni de siguranță • Utilizare • Conexiune electrică • Instalare • Întreținere • Date tehnice • Anexa

Ați cumpărat un produs de la JUNG PUMPEN obținând astfel calitate și performanță. Asigurați-vă această performanță printr-o instalare conform normelor, astfel încât produsul nostru să-și poată îndeplini funcția spre mulțumirea dumneavoastră deplină. Aveți în vedere faptul că defecțiunile apărute în urma manevrării necorespunzătoare influențează acordarea garanției.

De aceea respectați instrucțiunile din cadrul manualului de utilizare!

Ca orice alt aparat electric și acest produs poate să se oprească din cauza lipsei tensiunii de alimentare sau a unei defecțiuni tehnice. În cazul în care există riscul apariției unei pagube din această cauză, trebuie montată o instalație de alarmă independentă de rețea. În funcție de utilizare, trebuie să planificați eventual și un agregat pentru curent de rezervă sau o a doua instalație.

Safety instructions

This instruction manual contains essential information that must be observed during installation, operation and servicing. It is therefore important that the installer and the responsible technician/operator read this instruction manual before the equipment is installed and put into operation. The manual must always be available at the location where the pump or the plant is installed.

Failure to observe the safety instructions can lead to the loss of all indemnity.

Labelling of instructions

In this instruction manual, safety information is distinctly labelled with particular symbols. Disregarding this information can be dangerous.



General danger to people



Warning of electrical voltage

ATTENTION! Danger to equipment and operation

Qualification and training of personnel

All personnel involved with the operation, servicing, inspection and installation of the equipment must be suitably qualified for this work and must have studied the instruction manual in depth to ensure that they are sufficiently conversant with its contents. The supervision, competence and areas of responsibility of the personnel must be precisely regulated by the operator. If the personnel do not have the necessary skills, they must be instructed and trained accordingly.

Safety-conscious working

The safety instructions in this instruction manual, the existing national regulations regarding accident prevention, and any internal working, operating and safety regulations must be adhered to.

Safety instructions for the operator/user

All legal regulations, local directives and safety regulations must be adhered to.

The possibility of danger due to electrical energy must be prevented.

Leakages of dangerous (e.g. explosive, toxic, hot) substances must be discharged such that no danger to people or the environment occurs. Legal regulations must be observed.

Safety instructions for installation, inspection and maintenance works

As a basic principle, works may only be carried out to the equipment when it is shut down. Pumps or plant that convey harmful substances must be decontaminated.

All safety and protection components must be re-fitted and/or made operational immediately after the works have been completed. Their effectiveness must be checked before restarting, taking into account the current regulations and stipulations.

Unauthorised modifications, manufacture of spare parts

The equipment may only be modified or altered in agreement with the manufacturer. The use of original spare parts and accessories approved by the manufacturer is important for safety reasons. The use of other parts can result in liability for consequential damage being rescinded.

Unauthorised operating methods

The operational safety of the supplied equipment is only guaranteed if the equipment is used for its intended purpose. The limiting values given in the "Technical Data" section may not be exceeded under any circumstances.

Instructions regarding accident prevention

Before commencing servicing or maintenance works, cordon off the working area and check that the lifting gear is in perfect condition.

Never work alone. Always wear a hard hat, safety glasses and safety shoes and, if necessary, a suitable safety belt.

Before carrying out welding works or using electrical devices, check to ensure there is no danger of explosion.

People working in wastewater systems must be vaccinated against the pathogens that may be found there. For the sake of your health, be sure to pay meticulous attention to cleanliness wherever you are working.

Make sure that there are no toxic gases in the working area.

Observe the health and safety at work regulations and make sure that a first-aid kit is to hand.

In some cases, the pump and the pumping medium may be hot and could cause burns.

For installations in areas subject to explosion hazards, special regulations apply!

Application

Submersible pumps from the US series are suitable for pumping domestic waste water without stones.

When using the pumps, the relevant national laws, regulations and stipulations must be adhered to, for example:

- Domestic contaminated and waste water (e.g. DIN 1986 part 3 in Germany)
- Installation of low voltage systems (e.g., VDE 0100 in Germany)

For non-standard utilisation conditions, further regulations must be observed (e.g. VDE 0100 in Germany, part 701: bathrooms and shower rooms; part 702: swimming pools and fountains and part 737: outdoor use).

Modes of operation

with the pumped medium at a temperature of 104°F (40°C) or 194°F (90°C) in the case of HE and HES hot water pumps:

Motor submersed: continuous operation S1
 Motor at the surface: short duration operation S2; see "Technical Data"
 Motor at the surface; intermittent operation S3; see "Technical Data"

The submersible pump is frost-resistant down to -20°C when stored in dry conditions. When installed, however, it must not be allowed to freeze in the water.

Transport

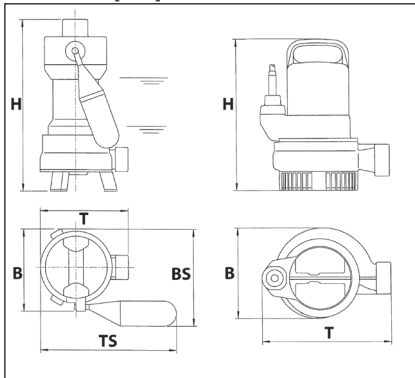


The pump must always be lifted by the handle and never by the power supply cable! The pump should only be lowered into deeper chambers or pits using a rope or chain.

Jung Pumpen GmbH • Industriestr. 4-6 • 33803 Steinhagen • Germany XX ¹
DIN EN 12050-2 Wastewater lifting plants for faecal-free wastewater DN 40 and 50 See Technical Data for pumping capacity Noise emission value < 70 dB(A) Corrosion protection – synthetic resin coating
¹ The first two digits of the pump number indicate the year of production

Where no explosion protection is stipulated for the pumping of foul wastewater at the installation location, US pumps may also be used.

Dimensions [mm]



	H	W	T	BS	TS
US 62	380	190	210	225	325
US 73	380	195	210	230	325
US 75	395	200	230	240	335
US 102	410	190	210	225	325
US 103	410	195	210	230	325
US 105	425	200	230	240	335
US 151	360	220	310		
US 152	435	190	210	225	325
US 153	435	190	210	225	325
US 155	450	200	230	240	335
US 251	360	220	310		
US 253	400	190	280		

Pumps with special float assembly, mat. no. 17424

	H	BS	TS
US 62, US 73	380	255	280
US 75	395	205	290
US 102, US 103	410	255	280
US 105	425	265	290
US 152, US 153	435	255	280
US 155	450	205	290

Switching points On - Off for an attached control

	●	○	●	○
US 62, US 73	240	125	155	105
US 75	255	140	170	120
US 102, US 103	270	155	185	135
US 105	285	170	200	150
US 152, US 153	295	180	210	160
US 155	310	195	225	175

Electrical connection



Only qualified electricians may carry out electrical works to the pump or the controls.

The relevant standards (such as EN standards), country-specific regulations (such as VDE in Germany), and the regulations of the local power supply companies must be observed.

Attention ! Never put the mains plug or a free lead end in water! If water gets into the plug, this can cause malfunctions and damage.

The pump is provided with a winding thermostat. In case of unacceptably high temperatures it switches off the pump to protect it against possible damage. Unacceptably high temperatures may result e.g. from dry running or mechanical or electrical overload.



The pump is switched on again automatically after cooling down - risk of injury! For this reason, always disconnect the device from the mains before remedying the fault! In order to do this, unplug the pump from the mains supply or remove the pre-fuses of the pump controls!

US 62 to US 105

Observe the operating voltage (see the type plate)! Only connect the pump to sockets that have been installed properly in accordance with the regulations and are fitted with a 16 A (delay) fuse.

Pumps without built-in level control can also be operated automatically through the use of our level controls. Our ready to connect level controls can be installed without specific electrotechnical skills.

US 151 to US 253

Observe the operating voltage (see the type plate)! Only connect the pump to sockets that have been installed properly in accordance with the regulations and are fitted with a 16 A (delay) fuse.

The pump must only be operated with the standard motor protection plug. Models without motor protection plug must only be operated using the level controls with integrated motor protection that are approved by JUNG PUMPEN. These pumps must be connected by a qualified electrician.

The overload protection (only for D and DS) must be set to the nominal current of the pump (see type plate) + 10%. If the motor protection plug or the level control require to be opened in order to reset or set the overload protection, this must only be done by a qualified electrician!



Disconnect the device or the pump from the power supply before opening!

If there is a blockage in the pump, the overload protection may be triggered. After rectifying the fault the "reset" button on the motor protection plug must be pressed to switch the pump on again. Pumps which are operated with a separate level control have the overload protection in the level control.

Rotational direction

The rotational direction must be checked before installation! If the rotational direction is correct, the start-up jolt should be in the opposite direction to the rotational direction arrow on the motor housing. The wrong rotational direction is also indicated if the pump performs inadequately when installed, or if loud noises can be heard during operation. If the rotational direction is wrong, 2 phases of the supply cable must be swapped over.



The start-up jolt can be very forceful.

Installation

The pump must be installed as shown in the examples. For installations in accordance with DIN EN 12056-4, the pressure pipe must be laid in a loop above the local backflow level and protected with a backflow prevention valve.

A correspondingly larger diameter pipe should be used for longer pressure pipelines to avoid pipe friction losses.

In contrast to pumps with built-in level control, the ON and OFF switching heights of pumps without built-in level control are variable by the use of a separate level control.

Permanent venting of the ring housing may be necessary if the pump runs dry from time to time (pressure outlet surfaced). This can occur for example if the residual water in the collecting chamber evaporates or if the pump runs in "snore" mode during the test run.

To vent the pump housing on pumps US 151, US 251 and US 253 the pressure pipe must be drilled above the pressure outlet to provide a 6 mm drill-hole. On all other pumps, the M8 hexagon socket screw under the (brass) oil screw must be removed.

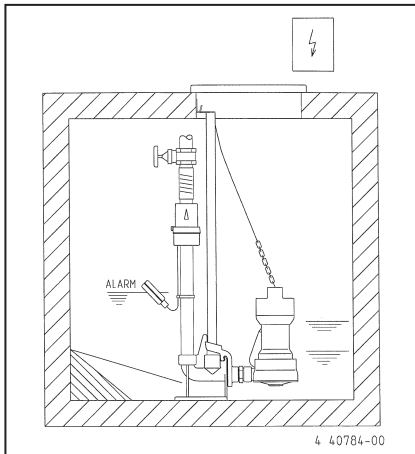
Attention! If the pump is malfunctioning, part of the contents of the oil reservoir could escape into the pumping medium.

Dimensions of sump

Single installation with pump base: 40 x 50 cm
Single installation with guide rail system: 40 x 70 cm

Duplex installation: 70 x 70 cm

Example of installation with guide rail system for pumping stations at a permanent location.

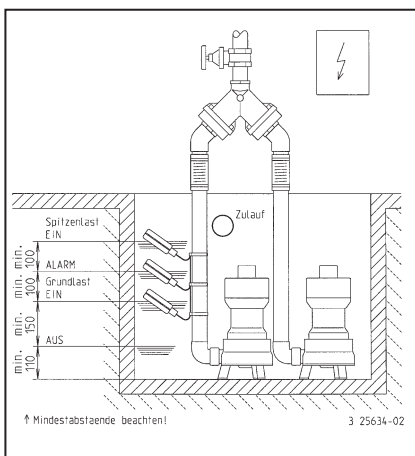


Installation: Fix the coupling base firmly to the floor of the collection chamber using wall plugs and then mount the guide rail. Next, install the pressure pipe including the necessary fittings, such as the non-return valve and shut-off valves.

Finally, fit the pump with the screwed-on coupling catch onto the guide rail and lower it into place using a chain fixed to the handle.

Pump	ON	OFF	ALARM
US 62 and 73	265	150	> 385
US 102 and 103	295	180	> 415
US 75	260	145	> 380
US 105	290	175	> 410
US 155	315	200	> 435
US 152 and 153	320	205	> 440
US 151 and 251	> 270	> 120	> 370
US 253	> 270	> 120	> 370

Example of installation with pump base



Attention! The floats of the level control and alarm system are installed so that they are freely movable but not under the inlet. Please observe the minimum distances. The controls must only be installed in a dry and well ventilated room!

Mobile operation

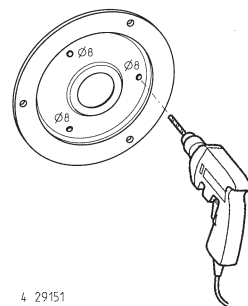
For safety reasons, mobile operation is only allowed with a foot strainer. In the case of pumps without a standard foot strainer, a separate foot strainer must be ordered (mat. no. 25135) and fitted under the pump in place of the three base feet.

If a hose is used as a pressure line, care must be taken to ensure that for every pumping operation the hose is completely empty before the pump is submersed. Any residual liquid would obstruct the ventilation of the pump housing and therefore also hinder the pumping operation. For the same reason, the pump would not operate if it was switched on before being submersed.

Flushing device

(not applicable for US 151 and US 251).

The pump can keep the intake section at the bottom of the chamber clear of deposits to a large extent if you carry out a small modification. This reduces the performance of the pump only insignificantly.



This modification is carried out as follows: Detach the foot strainer or the 3 base feet and remove the cover. Carefully drill a hole into the 3 markings with the ø 8 symbols. Deburr the drill-holes. Re-attach

the cover with the round sealing ring and the foot strainer or base feet.

Maintenance

We recommend that you service the equipment in accordance with EN 12056-4 and EN 60074-19.

To ensure continued reliability of service, we recommend that you take out a service contract.



Before carrying out any works: disconnect the pump and the controls from the mains and take steps to ensure that no one else can reconnect them to the power supply.



Check the rubber hose for mechanical or chemical damage. A damaged or kinked hose must be replaced.



When using a chain to lift the pump, please observe the relevant national regulations regarding accident pre-

vention. Lifting gear must be checked regularly by an expert in accordance with the legal regulations.

Oil check

The oil reservoir is sealed on the outside with a brass screw. In order to check the mechanical seal, the oil, including any residue, must be drained from the oil reservoir and collected in a clean measuring container.

- If the oil is contaminated with water (milky), an oil change must be carried out. Check again after a further 300 operating hours, but at the very latest after 6 months!
- However, if the oil is contaminated with both water and pollutants, then not only the oil must be replaced, but the mechanical seal as well.

For monitoring the oil reservoir, it is also possible to retrofit the electrode of our "DKG" seal leak control device in place of the brass screw on the oil reservoir.

Changing the oil

To ensure operational reliability, the first oil change should be carried out after 300 operating hours, with further oil changes carried out after every 1000 operating hours.

If the number of operating hours is very low, an oil change should still be carried out at least once a year.

If wastewater with strongly abrasive constituents is being pumped, the oil changes should be carried out at correspondingly shorter intervals.

Use HLP hydraulic mineral oil, viscosity class 22 to 46, e.g. Mobil DTE 22, DTE 24, DTE 25, to replace the oil in the oil reservoir.

The quantity of oil required is 700 cm³ for the US 253, 500 cm³ for the US 251 and US 251 and 300 cm³ for all other US pumps.

Attention! The oil reservoir must only be filled with the specified quantity of oil. Overfilling will result in the pump being rendered inoperable.

Cleaning

The foot strainer prevents coarse impurities from entering the pump. Regular cleaning of the float and the foot strainer ensures optimum performance and operation.

To clean the impeller in the event of an obstacle or blockage, the hexagon socket screws on the underside of the pump must be removed and the foot strainer or cover must be levered off. On pumps with a 10 mm free passage, the wear plate must be removed. The impeller can now be cleaned.



Worn impellers can have sharp edges.

Tightening torque M_A for A2 screw materials

for M 6 $M_A = 8 \text{ Nm}$

for M 8 $M_A = 20 \text{ Nm}$

for M 10 $M_A = 40 \text{ Nm}$

for M 12 $M_A = 70 \text{ Nm}$

Quick tips for remedying faults

No pump operation

- Check mains current (do not use a pin gauge)
- Fuse faulty = may be too weak (please refer to Electrical Connection)
- Mains supply cable damaged = repair to be carried out by manufacturer only

Pump runs but does not pump

- Empty the pressure pipe or hose to allow the non-return valve to open and the air to escape from the pump housing.


Impeller blocked


- Solids and fibrous matter have become lodged in the pump housing = clean


Decreased pumping performance


- Pump housing obstructed = clean
- Impeller worn = replace
- Wrong direction of rotation (for a three-phase current) = ask a qualified electrician to change 2 phases of the supply line

Technical data

		US 62 E / ES US 73 E / ES / H / HES	US 62 D / DS US 73 D / DS	US 102 E / ES US 103 E / ES / H / HES	US 102 D / DS US 103 D / DS
m	[kg]	12,6 / 12,7 12,4 / 12,5 / 12,4 / 12,5	12,8 / 12,9 12,6 / 12,7	14,3 / 14,4 14,0 / 14,1 / 14,0 / 14,1	14,3 / 14,4 14,6 / 14,7
 DN	[mm]	1 ½ "	1 ½ "	1 ½ "	1 ½ "
S2 / S3*		8 min / 10 %	8 min / 10 %	8 min / 10 %.	15 min / 15%
P1	[kW]	0,83	0,85	1,37	1,36
P2	[kW]	0,50	0,60	0,98	1,06
U	[V]	1/N/PE ~230	3/PE ~400	1/N/PE ~230	3/PE ~400
f	[Hz]	50	50	50	50
I	[A]	3,9	1,4	6,0	2,4

		US 75 E / ES	US 75 D / DS	US 105 E / ES	US 105 D / DS
m	[kg]	12,9 / 13,0	13,1 / 13,2	14,5 / 14,6	15,1 / 15,2
 DN	[mm]	2 "	2 "	2 "	2 "
S2 / S3* S2		8 min / 10 %	8 min / 10 %	8 min / 10 %.	15 min / 15%
P1	[kW]	0,83	0,85	1,37	1,36
P2	[kW]	0,50	0,60	0,98	1,06
U	[V]	1/N/PE ~230	3/PE ~400	1/N/PE ~230	3/PE ~400
f	[Hz]	50	50	50	50
I	[A]	3,9	1,4	6,0	2,4

		US 151 E / ES	US 151 D / DS	US 152 E / ES US 153 E / ES	US 152 D / DS US 153 D / DS
m	[kg]	12,6 / 12,7 12,4 / 12,5 / 12,4 / 12,5	12,8 / 12,9 12,6 / 12,7	14,3 / 14,4 14,0 / 14,1 / 14,0 / 14,1	14,3 / 14,4 14,6 / 14,7
 DN	[mm]	2 "	2 "	1 ½ "	1 ½ "
S2 / S3* S2		20 min / 25 %	25 min / 40 %	12 min / 10 %	15 min 10 %
P1	[kW]	1,68	1,60	1,60	1,70
P2	[kW]	1,19	1,30	1,21	1,41
U	[V]	1/N/PE ~230	3/N/PE ~400	1/N/PE ~230	3/N/PE ~400
f	[Hz]	50	50	50	50
I	[A]	7,6	3,0	7,5	3,1

		US 155 E / ES	US 155 D / DS	US 251 D / DS	US 253 D / DS
m	[kg]	16,0 / 16,3	16,5 / 17,2	27,5 / 29,5	26,5 / 28,0
	DN	2 "	2 "	2 "	2 "
	[mm]	50	50	10	40
S2 / S3*	S2	12 min / 10 %	15 min / 10 %	15 min / 25 %	15 min / 25 %
P1	[kW]	1,60	1,70	2,60	2,60
P2	[kW]	2,21	1,41	2,10	2,10
U	[V]	1/N/PE ~230	3/PE ~400	3/N/PE ~400	3/N/PE ~400
f	[Hz]	50	50	50	50
I	[A]	7,5	3,1	4,4	4,4

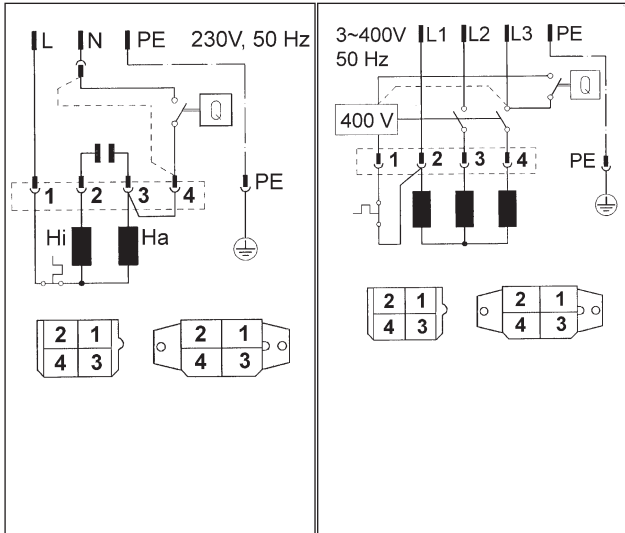
* Example for 40%: 4 min. operation and 6 min. rest (Cycle duration 10 min.)

UAK models are not explosion protected

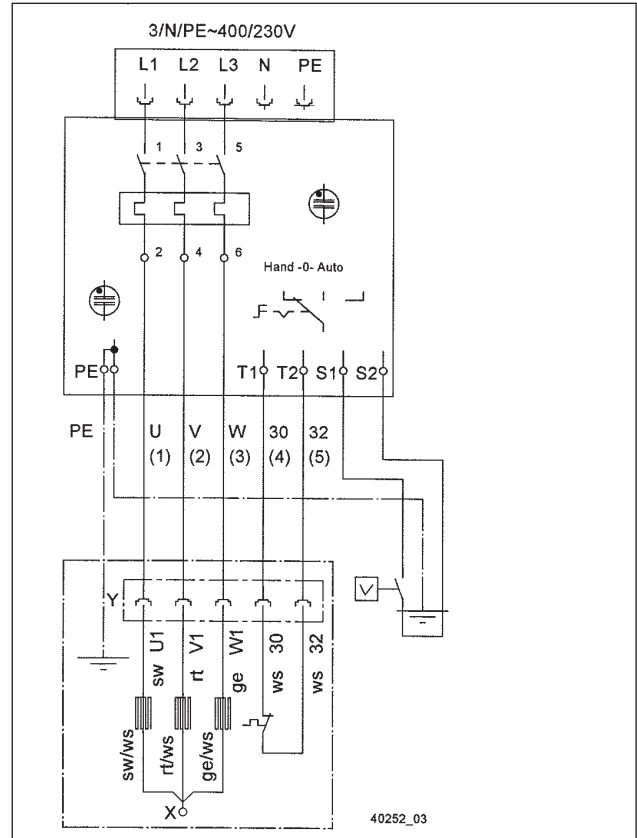
Performance

H [m]	1	2	3	4	5	6	7	8	9	10	11	12	14	16
	Q [m/h]													
US 62 E / ES	19	17	15	12	10	8	6	4	2					
US 62 D / DS	22	20	17	15	12	10	8	6	4					
US 102 E / ES	28	26	23	21	19	17	15	12	10	8	5	2		
US 102 D / DS	28	26	23	21	19	17	15	12	10	8	5	2		
US 152 E / ES	30	29	27	24	22	20	18	15	13	11	8	6		
US 152 D / DS	31	30	28	26	23	21	19	17	14	12	10	8		
US 73 E / ES	19	17	15	12	10	8	6	4	2					
US 73 HE / HES	19	17	15	12	10	8	6	4	2					
US 73 D / DS	22	20	17	15	12	10	8	6	4					
US 103 E / ES	28	26	23	21	19	17	15	12	10	8	5	2		
US 103 HE / HES	28	26	23	21	19	17	15	12	10	8	5	2		
US 103 D / DS	28	26	23	21	19	17	15	12	10	8	5	2		
US 153 E / ES	30	29	27	24	22	20	18	15	13	11	8	6		
US 153 D / DS	31	30	28	26	23	21	19	17	14	12	10	8		
US 75 E / ES		20	16	13	10	7	4							
US 75 D / DS		23	19	16	12	10	7	3						
US 105 E / ES			28	25	22	19	16	13	10	7	3			
US 105 D / DS			29	26	23	20	17	14	11	8	4			
US 155 E / ES				29	26	22	20	16	14	11	8	2		
US 155 D / DS				31	28	25	21	19	16	13	10	6		
US 151 E / ES	40	39	37	35	33	31	29	26	23	20	17	14		
US 151 D / DS	40	39	37	35	33	31	29	26	23	20	17	14		
US 251 D / DS	54	52	51	49	47	45	43	40	38	35	32	29	21	10
US 253 D / DS	40	38	36	34	32	30	28	25	23	20	17	14	7	

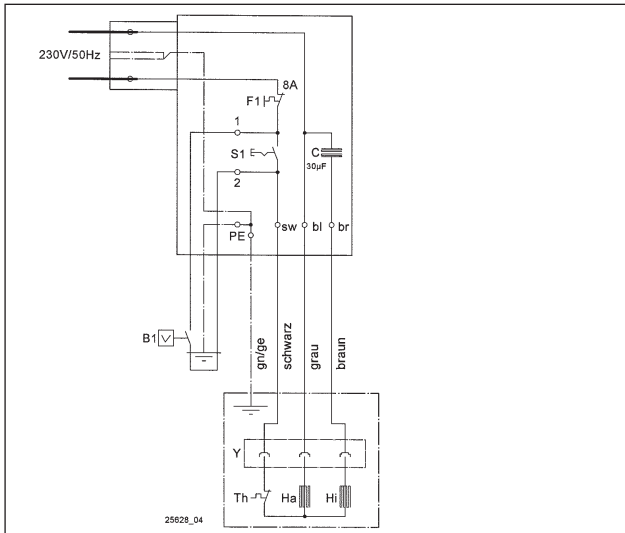
US 62 to US 105



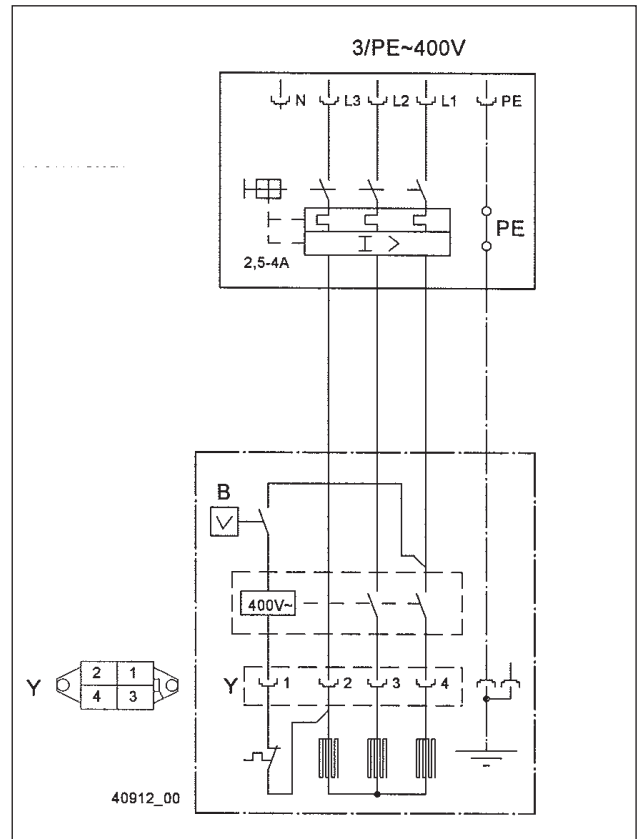
US 151, US 251 und US 253 D / DS



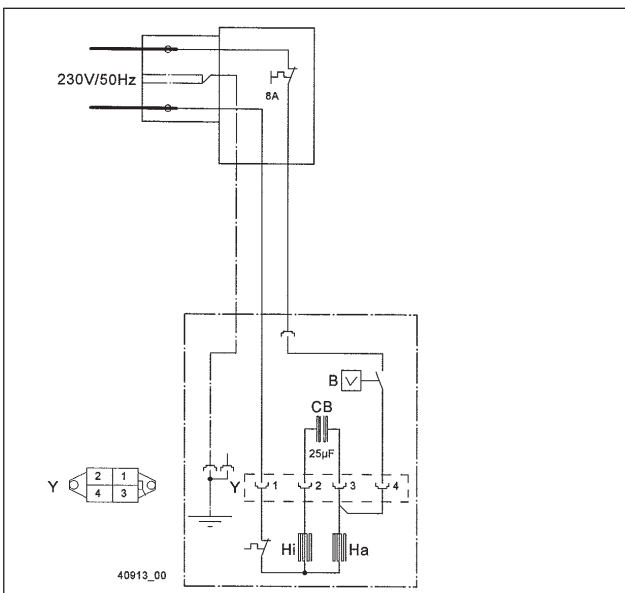
US 151 E / ES



US 152, US 153 und US 155 D / DS



US 152, US 153 und US 155 E / ES



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EN 12050-2
EN 55014-1, 55014-2, EN 61000-3-2, 61000-3-3

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US 62 E (JP 09812/4) **US 62 ES** (JP 09814/4)
US 62 D (JP 09813/4) **US 62 DS** (JP 09815/4)
US 102 E (JP 09278/0) **US 102 ES** (JP 09279/1)
US 102 D (JP 00214/10) **US 102 DS** (JP 00218/10)
US 152 E (JP 09435/0) **US 152 ES** (JP 09436/0)
US 152 D (JP 09437/0) **US 152 ES** (JP 09438/0)

US 151 E (JP 09310/0) **US 151 ES** (JP 09241/1)
US 151 D (JP 09300/0) **US 151 DS** (JP 09243/2)
US 251 D (JP 09301/0) **US 251 DS** (JP 09245/2)

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 US 73 D (JP 00677/12) US 73 DS (JP 00679/12)
 US 103 E (JP 09280/0) US 103 ES (JP 09281/1)
 US 103 D (JP 09258/1) US 103 DS (JP 09259/1)
 US 153 E (JP 09311/1) US 153 ES (JP 09247/2)
 US 153 D (JP 09302/1) US 153 ES (JP 09249/3)
 US 253 D (JP 09303/0) US 253 DS (JP 09251/2)

US 73 HE (JP 09267/1) US 73 HES (JP 09264/1)
 US 103 HE (JP 09307/0) US 103 HES (JP 09308/0)

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 US 75 D (JP 09404/0) US 75 DS (JP 09405/0)
 US 105 E (JP 09410/0) US 105 ES (JP 09411/0)
 US 105 D (JP 09408/0) US 105 DS (JP 09409/0)
 US 155 E (JP 09388/0) US 155 ES (JP 09389/0)
 US 155 D (JP 09390/0) US 155 DS (JP 09391/0)

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