gorenje

NAVODILA ZA UPORABO

INSTRUCTIONS FOR USE

SL

EN

TC 200-300 SPLIT

OPOZORILA

⚠ Aparat lahko uporabljajo otroci stari 8 let in starejši in osebe z zmanjšanimi fizičnimi, čutnimi ali mentalnimi sposobnostmi ali s pomanjkanjem izkušenj oz. znanjem če so pod nadzorom ali poučeni glede uporabe aparata na varen način in da razumejo možne nevarnosti.
⚠ Otroci se ne smejo igrati z aparatom.
⚠ Čiščenja in vzdrževanja aparata ne smejo izvajati otroci brez nadzora.
⚠ Agregat – zunanjo enoto toplotne črpalke prevažajte v navpičnem položaju, izjemoma pa lahko nagnete do 35° v vse smeri. Pazite, da med transportom ne poškodujete ohišja in vitalnih delov naprave.
⚠ Toplotna črpalka ni namenjena uporabi v prostorih, kjer so prisotne korozivne in eksplozivne snovi.
⚠ Priključitev toplotne črpalke na električno omrežje mora potekati v skladu s standardi za električne napeljave. Med toplotno črpalko in trajno inštalacijo mora biti vgrajena priprava za ločitev vseh polov od električnega omrežja v skladu z nacionalnimi inštalacijskimi predpisi.
⚠ Toplotna črpalka zaradi nevarnosti poškodbe agregata ne sme delovati brez vode v hranilniku!
⚠ Instalacija mora biti izvedena v skladu z veljavnimi predpisi po navodilih proizvajalca. Izvesti jo mora strokovno usposobljen monter.
⚠ Pri zaprtem, tlačnem sistemu priključitve morate na dotočno cev notranje enote - kotla obvezno vgraditi varnostni ventil z nazivnim tlakom 0,6 MPa (6 bar) ali 0,9 MPa (9 bar) (glejte napisno tablico), ki preprečuje zvišanje tlaka v kotlu za več kot 0,1 MPa (1 bar) nad nazivnim.
⚠ Voda lahko kaplja iz odtočne odprtine varnostnega ventila zato mora biti odtočna odprtina odprta na atmosferski tlak.
⚠ Izpust varnostnega ventila mora biti nameščen v smeri navzdol in v območju, kjer ne zamrzuje.
⚠ Za pravilno delovanje varnostnega ventila morate sami izvajati redne kontrole, po potrebi odstraniti vodni kamen in preveriti, da varnostni ventil ni blokiran.
⚠ Med toplotno črpalko in varnostni ventil ne smete vgraditi zapornega ventila, ker bi s tem delovanje varnostnega ventila onemogočili!
⚠ Elementi v elektronski krmilni enoti so pod napetostjo tudi po pritisku polja za izklop (9) toplotne črpalke.
⚠ Poškodovano priključno vrvico in povezovalni kabel za medsebojno povezavo notranje in zunanje enote lahko zamenja samo proizvajalec, njegov serviser ali pooblaščena oseba, da se s tem izognete nevarnosti.
⚠ Toplotna črpalka je zaščitena za primer odpovedi delovnega termostata z dodatno toplotno varovalko, vendar v takšnem primeru v skladu z varnostnimi standardi voda v toplotni črpalki lahko doseže temperaturo tudi do 130 °C. Pri izvedbi vodovodnih inštalacij je obvezno potrebno upoštevati možnost, da lahko pride do navedenih temperaturnih preobremenitev.
⚠ Če boste toplotno črpalko izključili iz omrežja, morate zaradi nevarnosti zamrznitve, vodo iz nje iztočiti.
⚠ Voda iz notranje enote se izprazni skozi dotočno cev kotla. V ta namen je priporočljivo med varnostni ventil in dotočno cev namestiti poseben člen ali izpustni ventil.
⚠ Prosimo Vas, da morebitnih okvar na toplotni črpalki ne popravljate sami, ampak o njih obvestite najbližjo pooblaščeno servisno službo.
⚠ Pri padcu temperature dodatnega vira ogrevanja in pri omogočeni cirkulaciji vode skozi prenosnik toplote, lahko pride do nenadzorovanega odvzema toplote iz hranilnika vode. Ob priključitvi na druge vire ogrevanja je potrebno poskrbeti za pravilno izvedbo temperaturne regulacije dodatnega vira.
⚠ V primeru priključitve sprejemnikov sončne energije kot zunanji vir toplote mora biti delovanje agregata toplotne črpalke izključeno. Sicer lahko kombinacija obeh virov privede do pregretja sanitarne vode in s tem posledično do previsokih tlakov.
⚠ Cirkulacijski vod privede do dodatnih toplotnih izgub v hranilniku vode.
⚠ Izdelek vsebuje fluorirane toplogredne pline. Hermetično zaprto.

Cenjeni kupec, zahvaljujemo se Vam za nakup našega izdelka.
PROSIMO, DA PRED VGRADNJO IN PRVO UPORABO HRANILNIKA TOPLE VODE S TOPLOTNO ČRPALKO SKRBNO PREBERETE NAVODILA.

Hranilnik tople vode s toplotno črpalko je izdelan v skladu z veljavnimi standardi, ki proizvajalcu dovoljujejo uporabo CE znaka. Njegove osnovne tehnične lastnosti so navedene na napisni tablici, nalepljeni na zadnji zgornji strani notranje enote - kotla ter na zunanji enoti - agregatu ob električni priključnici.

Hranilnik tople vode s toplotno črpalko sme priključiti le za to usposobljen strokovnjak. Posege v njegovo notranjost zaradi popravila, odstranitve vodnega kamna ter preverjanja ali zamenjave protikorozijske zaščitne anode lahko opravi samo pooblaščena servisna služba. Posebej skrbno upoštevajte napotke za ravnanje ob morebitnih napakah in varno uporabo toplotne črpalke.

To knjižico shranite, da jo boste lahko pogledali, kadar boste v dvomih glede delovanja ali vzdrževanja.
Navodila za namestitev in uporabo so prav tako na voljo na naših spletnih straneh **http://www.gorenje.com** ali na nacionalnih straneh v rubriki servis oziroma podpora.
Vedno lahko pokličete pooblaščene serviserje za občasno vzdrževanje. Na razpolago so Vam s svojimi izkušnjami.

Hranilnik tople vode s toplotno črpalko je izdelan tako, da lahko uporabimo tudi druge vire ogrevanja in sicer:
• kotel centralnega ogrevanja,
• sončno energijo,
• električno grelo.

PODROČJE UPORABE

Tovrstne izvedbe toplotnih črpalk so namenjene predvsem segrevanju potrošne vode v gospodinjstvih in pri drugih porabnikih, kjer dnevna potrošnja tople vode (50 °C) ne presega 400 do 700 l. Nastavitev temperature na aparatu naj bo takšna, da zadostuje dejanskim potrebam, priporočljive nastavitve so med 45 in 55°C. Višje nastavitve niso priporočene, saj se pri teh zmanjša učinkovitost (COP) in podaljšajo časi ogrevanj oz. poveča se št obratovalnih ur. Delovanje toplotne črpalke je popolnoma avtomatsko.

Aparat mora biti priključen na hišno napeljavo sanitarne tople vode, za svoje delovanje potrebuje električno napajanje. Zaradi lažje kontrole in menjave magnezijeve anode, vam priporočamo, da nad aparatom pustite zadosti prostora (sl. 1). Drugačna uporaba od navedene v navodilih za ta aparat ni dovoljena. Aparat ni namenjen uporabi v prostorih, kjer so prisotne korozivne in eksplozivne snovi. Proizvajalec ne odgovarja za poškodbe nastale zaradi neprimerne vgradnje in neustrezne uporabe, ki ni v skladu z navodili za montažo in uporabo.

Navodila za uporabo so sestavni in pomemben del izdelka in morajo biti izročena kupcu. Pazljivo preberite opozorila v navodilih, ker so v njih navedeni pomembni napotki glede varnosti pri instalaciji, uporabi in vzdrževanju.
Navodila shranite za morebitno kasnejšo uporabo.

Oznaka vaše notranje enote - kotla je navedena na napisni ploščici, ki je nameščena na zadnji zgornji strani notranje enote - kotla ter na zunanji enoti - agregatu ob električni priključnici.

Ko odstranite embalažo, preglejte vsebino. V primeru dvoma se obrnite na dobavitelja. Elementov embalaže (spone, plastične vrečke, ekspandiran polistirol itd.) ne puščajte na dosegu otrok, ker so to potencialni viri nevarnosti, niti jih ne odložite kamorkoli v okolje.

⚠ Toplotna črpalka ni namenjena uporabi v prostorih, kjer so prisotne korozivne in eksplozivne snovi.
⚠ Agregat - zunanjo enoto toplotne črpalke prevažajte v navpičnem položaju, izjemoma jo lahko nagnete do 35° v vse smeri. Pazite, da med transportom ne poškodujete ohišja in vitalnih delov naprave.

SKLADIŠČENJE IN TRANSPORT

Skladiščenje zunanje enote - agregata mora biti zagotovljeno v navpičnem položaju v suhem in čistem prostoru. Skladiščenje notranje enote - kotla mora biti zagotovljeno v suhem in čistem prostoru.

TEHNIČNE LASTNOSTI APARATA

KLJUČ TIPA NOTRANJE ENOTE

TC 301 SGNE

NE = Notranja enota
G = Vgrajeno grelo
Toplotna črpalka z ločenim agregatom in enim izmenjevalcem

Tipi		TC200SGNE	TC201SGNE	TC300SGNE	TC301SGNE	TC306SGNE	TC302SGNE
Profil rabe		L	L	XL	XL	XL	XL
Razred energijske učinkovitosti [1]		A	A	A	A	A	A
Energijska učinkovitost ogrevanja vode ηwh [1]	%	109,1	109,1	109,9	109,9	109,9	109,9
Letna poraba električne energije [1]	kWh	938	938	1525	1525	1525	1525
Dnevna poraba električne energije [1]	kWh	4,422	4,422	7,093	7,093	7,093	7,093
Nastavljena temperatura termostata	°C	55	55	55	55	55	55
Nivo zvokovne moči v notranjih prostorih [3]	dB (A)	15	15	15	15	15	15
Nivo zvokovne moči zunanje enote [3]	dB (A)	56	56	56	56	56	56
Vrednost smart		0	0	0	0	0	0
Prostornina	l	202	194	295	276	283	276
Mešana voda pri 40°C V40 [2]	l	259	252	395	370	381	370
Morebitni varnostni ukrepi (sestava, nameščanje, vzdrževanje)		Pri tlačni priključitvi obvezna uporaba varnostnega ventila					
Tehnične lastnosti							
Čas segrevanja A7 / W10-55 [4]	h:min	6:48	6:48	10:06	10:06	10:06	10:06
COP_{DHW} A7/W10-55 [4]		2,64	2,64	2,69	2,69	2,69	2,69
Moč v stanju pripravljenosti [4]	W	27	27	27	27	27	27
Hladilno sredstvo		R134a	R134a	R134a	R134a	R134a	R134a
Količina hladiva	kg	1,150	1,150	1,150	1,150	1,150	1,150
Potencial globalnega segrevanja		1430	1430	1430	1430	1430	1430
Ekvivalent ogljikovega dioksida	t	1,645	1,645	1,645	1,645	1,645	1,645
Območje delovanja	°C	-7 ÷ 35	-7 ÷ 35	-7 ÷ 35	-7 ÷ 35	-7 ÷ 35	-7 ÷ 35
Območje pretokov zraka	m^3/h	1800	1800	1800	1800	1800	1800
Električne karakteristike							
Nazivna električna moč kompresorja	W	510	510	510	510	510	510
Moč grelcev	W	2000	2000	2000	2000	2000	2000
Maksimalna priključna moč	W	2850	2850	2850	2850	2850	2850
Napetost	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50
Električno varovanje	A	16	16	16	16	16	16
Stopnja zaščite pred vlago		IP24	IP24	IP24	IP24	IP24	IP24
Hranilnik vode							
Protikorozijska zaščita kotla		Emajlirano / Mg anoda					
Nazivni tlak	MPa	0,6 / 0,9	0,6 / 0,9	0,6 / 0,9	0,6 / 0,9	0,6 / 0,9	0,6 / 0,9
Najvišja temperatura vode toplotna črpalka	°C	55	55	55	55	55	55
Najvišja temperatura vode električni grelec	°C	75	75	75	75	75	75
Priključne mere notranje enote							
Višina skupna	mm	1300	1300	1690	1690	1690	1690
Širina	mm	670	670	670	670	670	670
Globina	mm	690	690	690	690	690	690
Priključki na vodovodno omrežje		G1	G1	G1	G1	G1	G1
Ogrevana površina PT - spodnji	m^2	/	1,45	/	2,7	1,6	1,6
Ogrevana površina PT - zgornji	m^2	/	/	/	/	/	1,0
Priključki izmenjevalca		-	G1	-	G1	G1	G1
Neto/Bruto/Masa z vodo	kg	77/89/281	100/112/294	96/108/391	138/150/414	122/134/405	140/152/416
Temperatura grelnega medija v PT	°C	/	5 ÷ 95	/	5 ÷ 95	5 ÷ 95	5 ÷ 95
Transportni podatki							
Mere embalaže	mm	800x800x 1500	800x800x 1500	800x800x 1890	800x800x 1890	800x800x 1890	800x800x 1890

PT prenosnik toplote

[1] direktiva 812/2013, 814/2013, EN16147:2011, povprečne podnebne razmere
[2] po EN16147:2011
[3] po EN12102:2013
[4] vstopna temperatura zraka 7°C, 89% vlažnost, voda ogrevana od 10 do 55 °C po EN16147:2011

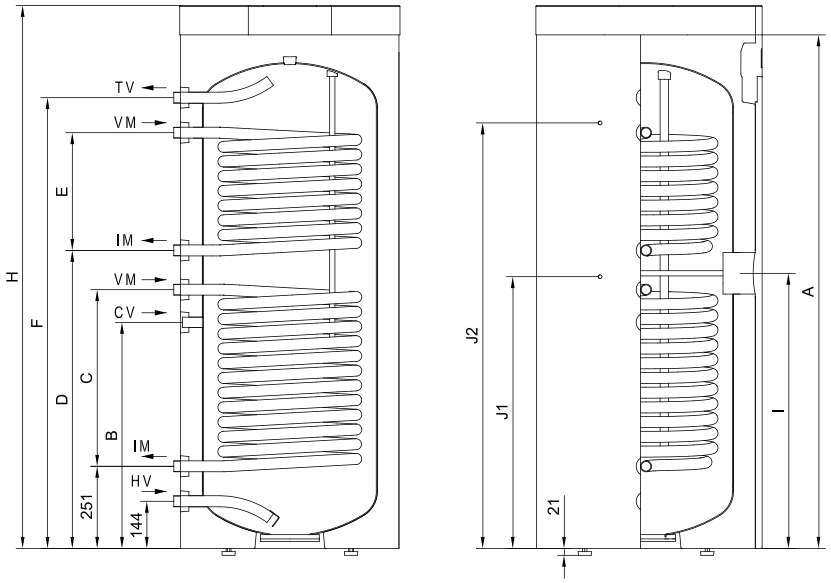
Vsi v tabeli navedeni tipi notranjih enot so kompatibilni z zunanjo enoto s tipsko oznako TCSZE1NT oz. s tipi zunanjih enot, ki so navedene na notranji enoti poleg napisne tablice. Uporaba drugih zunanjih enot ni dovoljena.

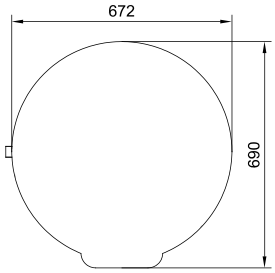
NAMESTITEV HRANILNIKA TOPLE VODE S TOPLOTNO ČRPALKO

Instalacija mora biti izvedena v skladu z veljavnimi predpisi po navodilih proizvajalca. Izvesti jo mora strokovno usposobljen monter.

Notranja enota - kotel

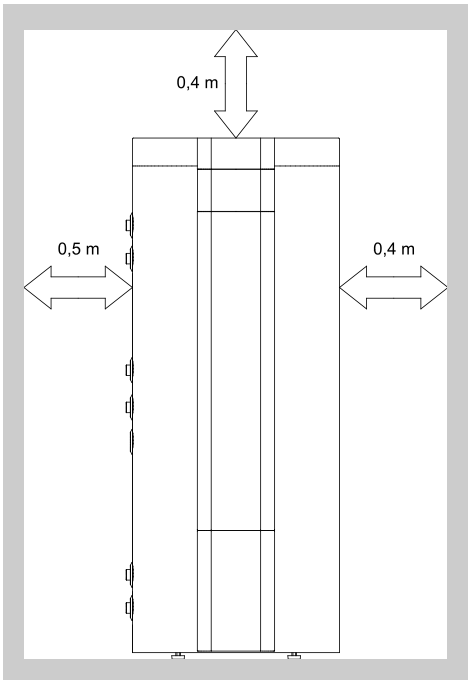
Notranjo enoto - kotel morate namestiti v prostor, kjer ne zmrzuje. Priporočamo namestitev, ki omogoča čim krajše plinske povezave.





LEGENDA

PT	Prenosnik toplote
HV	Dotok hladne vode (modra rozeta)
IM	Izstop medija PT (črna rozeta)
CV	Cirkulacijski vod (črna rozeta)
VM	Vstop medija PT (črna rozeta)
TV	Odtok tople vode (rdeča rozeta)
J1	Cev za tipalo
J2	Cev za tipalo



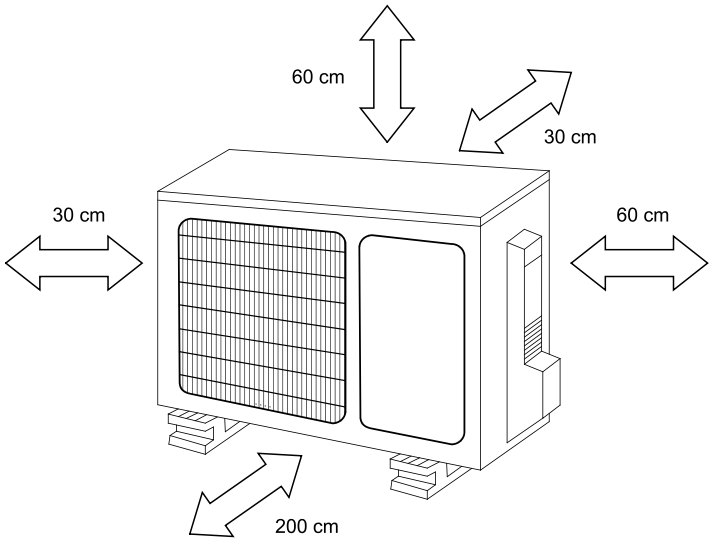
	TC200 SGNE	TC201 SGNE	TC300 SGNE	TC301 SGNE	TC306 SGNE	TC302 SGNE
A (mm)	1170	1170	1560	1560	1560	1560
B (mm)	580	580	690	690	690	690
C (mm)	/	620	/	1020	540	540
D (mm)	/	/	/	/	/	910
E (mm)	/	/	/	/	/	360
F (mm)	975	975	1375	1375	1375	1375
H (mm)	1300	1300	1690	1690	1690	1690
I (mm)	615	615	840	840	840	840
J1 (mm)	/	/	/	790	790	830
J2 (mm)	/	900	/	1300	1300	1300
HV	G1	G 1	G1	G 1	G 1	G 1
IM	/	G 1	/	G 1	G 1	G 1
CV	G3/4	G3/4	G3/4	G3/4	G3/4	G3/4
VM	/	G 1	/	G 1	G 1	G 1
TV	G 1	G 1	G 1	G 1	G 1	G 1

Sl. 1: Priključne in montažne mere hranilnika [mm]

Zunanja enota - agregat

Zunanjo enoto - agregat dobro pritrdite v vodoravni položaj s sornikom in matico ø10 ali ø8 na betonski ali čvrst nosilec.

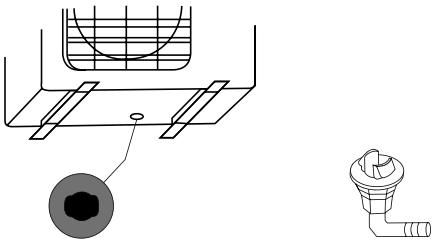
Pri tem upoštevajte spodnja opozorila:
- Če je narejen nadstrešek, ki ščiti enoto pred neposrednimi sončnimi žarki ali dežjem, zagotovite neoviran pretok zraka.
- Zagotovite prostor okrog hrbtne strani in levo od naprave več kot 30 cm.
- Na sprednji strani mora biti več kot 200 cm prostora.
- Na priključni (desni) strani in nad napravo je potrebnih več kot 60 cm prostora.
- V bližini ne smejo biti živali ali rastline, ki bi jih prizadel zrak, ki izhaja iz enote.
- Upoštevajte težo zunanje enote in izberite prostor, kjer hrup in tresljaji niso moteči.
- Izberite takšno mesto, da delovanje zunanje enote ne moti sosedov.
- Če zunanjo enoto - agregat montirate na streho, jo morate izravnati.
- Zagotovite, da je strešna konstrukcija in način pritrditve primeren za namestitev naprave.
- Ob montaži na streho upoštevajte lokalne predpise.



Sl. 2: Montažne mere zunanje enote - agregata

Namestitev odtočnega nastavka

- V odvodno koleno dajte tesnilo, potem odtočni nastavek vstavite v luknjo spodnje posode zunanje enote in obrnite za 90 stopinj, da sklop pritrdite. Na odtočni nastavek priključite podaljšek odtočne cevi (ni priloženo) v primeru odvoda vode iz zunanje enote med načinom ogrevanja.



Sl. 3: Namestitev odtočnega nastavka

V primeru, da zunanjo enoto - agregat montirate na strešno konstrukcijo ali zunanje stene, lahko to povzroča prekomerni hrup in tresljaje. V tem primeru lahko pride do povečane hrupnosti med delovanjem aparata. Če je zunanja enota - agregat montirana direktno na streho obstaja možnost, da zaradi montažnega posega pride do puščanja strehe.

Za zmanjšanje prenosa hrupa in tresljajev preko sten v prostore, kjer bi bilo to moteče (spalnice, prostori za počitek) upoštevajte naslednje ukrepe:
- predvidite izolacijo stenskega preboja.
- predvidite primerno montažo zunanje enote- agregata.

Orodja, potrebna za montažo

- Kazalnik nivoja (libela)
- Vijačnik
- Električni vrtalnik z votlo vrtalno krono (ø65 mm)
- Orodje za robljenje
- Momentni ključi: 15 Nm 1/4" (6,35 mm), 25 Nm 3/8" (9,52mm)
- Ključ (polsklopka)
- Šestrobi ključ ustreznih dimenzij
- Detektor puščanja plina, Vakuumska črpalka, manometrski razdelilnik
- Termometer, Multimeter, Rezilo za cevi, Merilni trak
- Navodila za uporabo

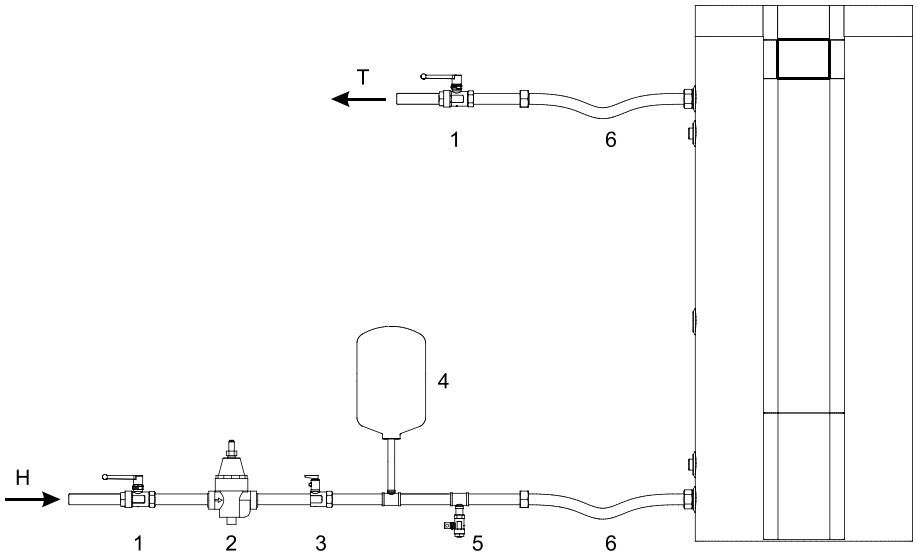
PRIKLJUČITEV NA VODOVODNO OMREŽJE

Priključitev na vodovodno omrežje napravite po označbah za priključke iz predhodnega poglavja (sl. 1).

Na dotočno cev je zaradi varnosti delovanja obvezno treba vgraditi varnostni ventil, ki preprečuje zvišanje tlaka v kotlu za več kot 0,1 MPa (1 bar) nad nominalnim. Iztočna šoba na varnostnem ventilu mora imeti obvezno izhod na atmosferski tlak. Za pravilno delovanje varnostnega ventila morate sami periodično izvajati kontrole, po potrebi odstraniti vodni kamen in preveriti, da varnostni ventil ni blokiran. Ob preverjanju morate s premikom ročke ali odvitjem matice ventila (odvisno od tipa ventila) odpreti iztok iz varnostnega ventila. Pri tem mora priteči skozi iztočno šobo ventila voda, kar je znak, da je ventil brezhiben. Pri segrevanju vode v hranilniku tople vode se tlak vode v kotlu zvišuje do meje, ki je nastavljena v varnostnem ventilu. Ker je vračanje vode nazaj v vodovodno omrežje preprečeno, lahko pride do kapljanja vode iz odtočne odprtine varnostnega ventila. Kapljajočo vodo lahko speljete v odtok preko lovilnega nastavka, ki ga namestite pod varnostni ventil. Odtočna cev nameščena pod izpustom varnostnega ventila mora biti nameščena v smeri naravnost navzdol in v okolju, kjer ne zmrzuje.

V primeru, da zaradi neustrezno izvedene inštalacije nimate možnosti, da bi kapljajočo vodo iz varnostnega ventila speljali v odtok, se lahko kapljanju izognete z vgradnjo ekspanzijske posode na dotočni cevi hranilnika. Volumen ekspanzijske posode je minimalno 5% volumna hranilnika.

Hranilnik tople vode lahko priključite na hišno vodovodno omrežje brez redukcijskega ventila, če je tlak v omrežju nižji od predpisanega na napisni tablici. V nasprotnem primeru je potrebno vgraditi redukcijski ventil tlaka, ki zagotavlja, da tlak na dotoku v hranilnik tople vode ne presega nazivnega.



LEGENDA
1 Zaporni ventil
2 Redukcijski ventil tlaka
3 Varnostni-protipovratni ventil
4 Ekspanzijska posoda
5 Izpustni ventil
6 Gibljiva cev

H Hladna voda
T Topla voda

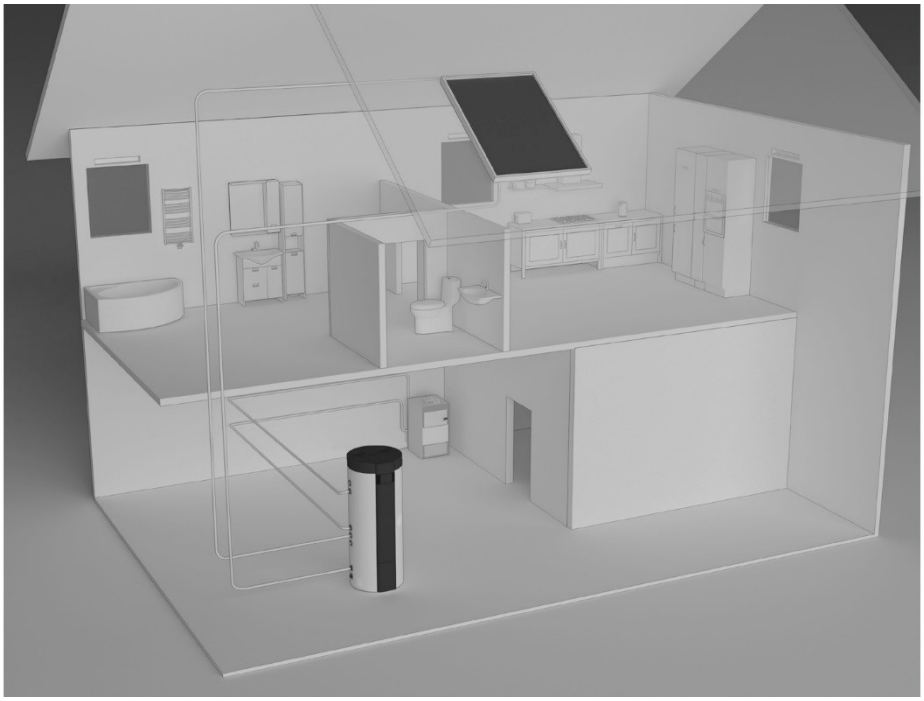
Sl. 4: Zaprti (tlačni) sistem

⚠ Toplotna črpalka zaradi nevarnosti poškodbe agregata ne sme delovati brez vode v hranilniku!

PRIKLJUČITEV NA DRUGE VIRE OGREVANJA

Hranilnik tople vode s toplotno črpalko omogoča pripravo sanitarne vode preko enega ali dveh izmenjevalcev toplote z različnimi viri energije (npr. centralno ogrevanje, sončna energija, …).

Možnost povezave hranilnika tople vode z različnimi viri ogrevanja je prikazana na sl. 5.



Sl. 5: Priključitev na druge vire ogrevanja

⚠ Pri padcu temperature dodatnega vira ogrevanja in pri omogočeni cirkulaciji vode skozi prenosnik toplote, lahko pride do nenadzorovanega odvzema toplote iz hranilnika vode. Ob priključitvi na druge vire ogrevanja je potrebno poskrbeti za pravilno izvedbo temperaturne regulacije dodatnega vira.

⚠ V primeru priključitve sprejemnikov sončne energije kot zunanji vir toplote mora biti delovanje agregata toplotne črpalke izključeno. Sicer lahko kombinacija obeh virov privede do pregretja sanitarne vode in s tem posledično do previsokih tlakov.

⚠ Cirkulacijski vod privede do dodatnih toplotnih izgub v hranilniku vode.

Namestitev tipal zunanjega vira ogrevanja

Na levi strani hranilnika tople vode sta odprtini J1, J2 (sl. 1), kjer se lahko vstavijo tipala za regulacijo sistemske povezave hranilnika tople vode z drugimi viri ogrevanja. Maksimalni premer tipala je 8 mm. Dolžina cevi za tipala znaša 180 mm.

Tipalo vstavite v cev in ga fiksirate:

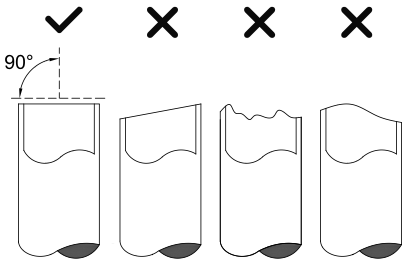
- če boste tipalo namestili v višjo pozicijo, se bo termostat hitreje odzival, obdobja obratovanja obtočne črpalke bodo krajša, razlika med temperaturo vode v hranilniku in ogrevalnim medijem po izklopu termostata bo višja, posledično bo količina in temperatura tople vode v hranilniku nižja.
- če boste tipalo namestili v nižjo pozicijo, bodo obdobja obratovanja obtočne črpalke daljša, razlika med temperaturo ogrevalnega medija in doseženo temperaturo vode v hranilniku nižja, temperatura in s tem količina vode v hranilniku bo zato višja.

PRIKLJUČITEV CEVI ZA HLADILNI MEDIJ

Glavni vzrok za puščanje hladilnega sredstva je slabo opravljeno robljenje. Postopek pravilnega robljenja je naslednji:

Priprava cevi in povezovalnih kablov

- Za plinsko povezavo med zunanjo in notranjo enoto uporabite bakrene cevi s presekom 1/4'' x 0,6 mm (ø6.35 mm x 0,6 mm) in 3/8'' x 0,6 mm (ø9.52 mm x 0,6 mm).
- Izmerite razdaljo med notranjo enoto - kotlom in zunanjo enoto - agregatom.
- Cev z namenskim orodjem odrežite malo daljšo, kot je izmerjena razdalja.
- Povezovalni kabli naj bodo cca 1,0 m daljši od dolžine cevi.



Sl. 6: Priprava cevi

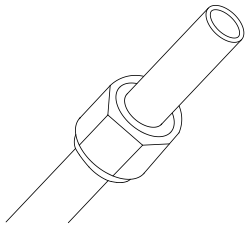
Raziglevanje

- Odstranite vse iglice iz odrezanih delov cevi.
- Bakrene cevi obrnite navzdol, ko odstranjujete iglice, da iglice ne padejo v napeljavo.

Sl. 7: Raziglevanje

Nameščanje matice

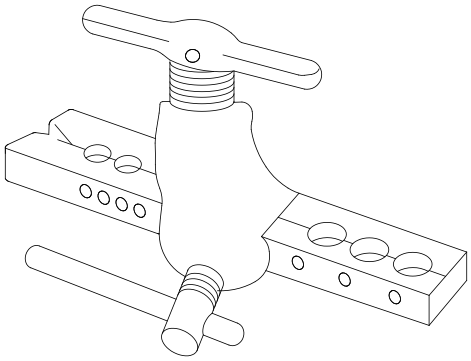
- Odstranite matice z zarobkom, ki so montirane na notranji enoti - kotlu in zunanji enoti - agregatu, dajte jih na cevi, s katerih ste odstranili iglice (ne morete jih namestiti po robljenju).

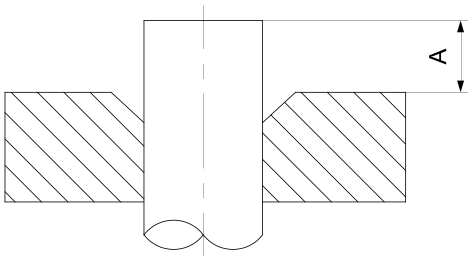


Sl. 8: Nameščanje matice

Robljenje

• Bakreno cev močno držite v orodju, mere so prikazane v spodnji tabeli.



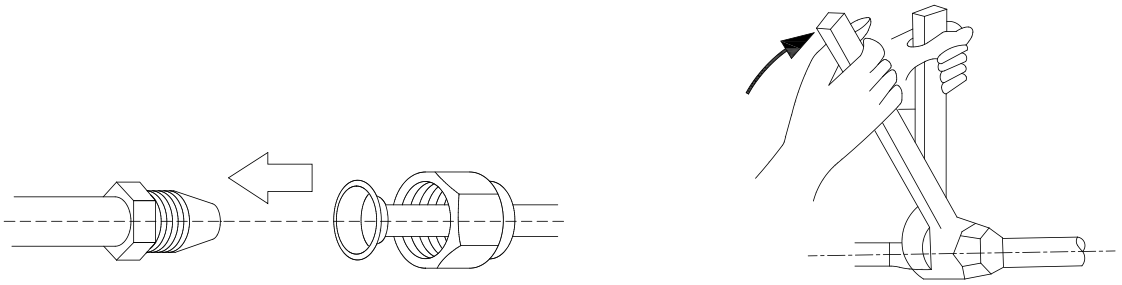


Sl. 9: Robljenje

Zunanji premer	A [mm]	
	Max.	Min.
1/4'' (Φ6.35 mm)	1,3	0,7
3/8'' (Φ9.52 mm)	1,6	1,0

Privijanje priključka

• Poravnajte središče cevi.
• Z roko privijte matice z zavihkom, potem jih privijte s ključem in momentnim ključem, kot je prikazano na sl. 10.



Sl. 10: Privijanje priključka

Opozorilo!

Prekomerni pritezni moment lahko prelomi matico, odvisno od pogojev montaže.

Zunanji premer	Nazivni pritezni moment [Nm]
1/4'' (Φ6.35 mm)	16
3/8'' (Φ9.52 mm)	26

VAKUMIRANJE

Zrak in vlaga imata v hladilnem sistemu neželene učinke, ki so navedeni spodaj:
• Dviganje tlaka sistema.
• Povečanje delovnega toka.
• Znižanje učinkovitosti ogrevanja.
• Vlaga lahko zamrzne v hladilni napeljavi in blokira kapilare.
• Voda lahko povzroči korozijo na delih hladilnega sistema.

Zaradi tega je potrebno notranjo enoto - kotel in napeljavo med notranjo in zunanjo enoto - agregatom pregledati, če spušča z tlačnim preizkusom in odstraniti iz sistema vse tujke, ter vlago.

Odstranjevanje zraka z vakuumsko črpalko

Preverite, če so vse cevi (tako na tekočinski, kot plinski strani) med notranjo in zunanjo enoto pravilno priključene in če je izvedena vsa električna napeljava za preizkusno delovanje. Odstranite pokrove delovnih ventilov tako na tekočinski kot plinski strani zunanje ter notranje enote. Delovni ventili tako na tekočinski kot plinski strani na zunanji enoti - agregatu ostanejo zaprti na tej stopnji. Na notranji enoti – kotlu je potrebno na tej stopnji ventile (C, D) odpreti!

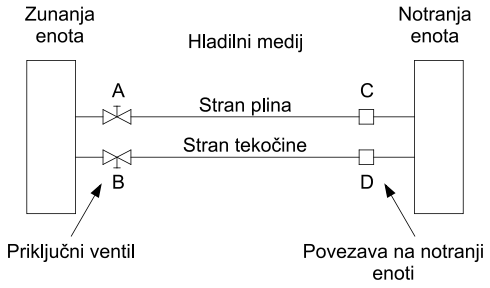
Dolžina cevi in količina hladilnega sredstva:

Dolžina priključne cevi	Dodatna količina hladilnega sredstva
manj kot 5 m	150 g
5 do 8 m	150 g + (dolžina cevi [m] – 5 [m]) x 20 g

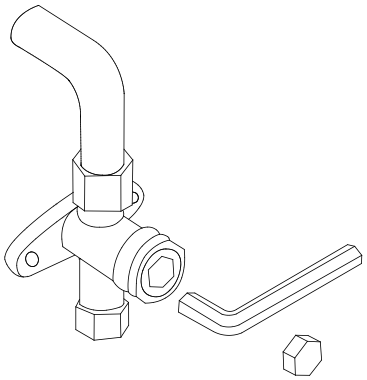
Če prestavite zunanjo enoto - agregat na drugo mesto, praznjenje opravite z napravo za zajemanje hladilnega sredstva. Preverite, da je hladilno sredstvo, dodano v hladilni sistem v vsakem primeru v tekočem stanju.
Dopolnjevanje s hladilnim sredstvom je potrebno izvesti na nizkotlačnem servisnem ventilu v zunanji enoti - agregatu. Dopolnjevanje lahko izvede samo strokovno usposobljena oseba.

Opozorilo pri delu z zapornim ventilom

• Steblo ventila odpirajte, dokler ni obrnjeno proti čepu. Ne poskušajte ga še bolj odpreti.
• Pokrov stebla ventila dobro pritrdite s ključem ali podobnim orodjem.
• Pritezni moment pokrova stebla ventila (glej tabelo priteznih momentov).



Sl. 11: Povezava med notranjo in zunanjo enoto



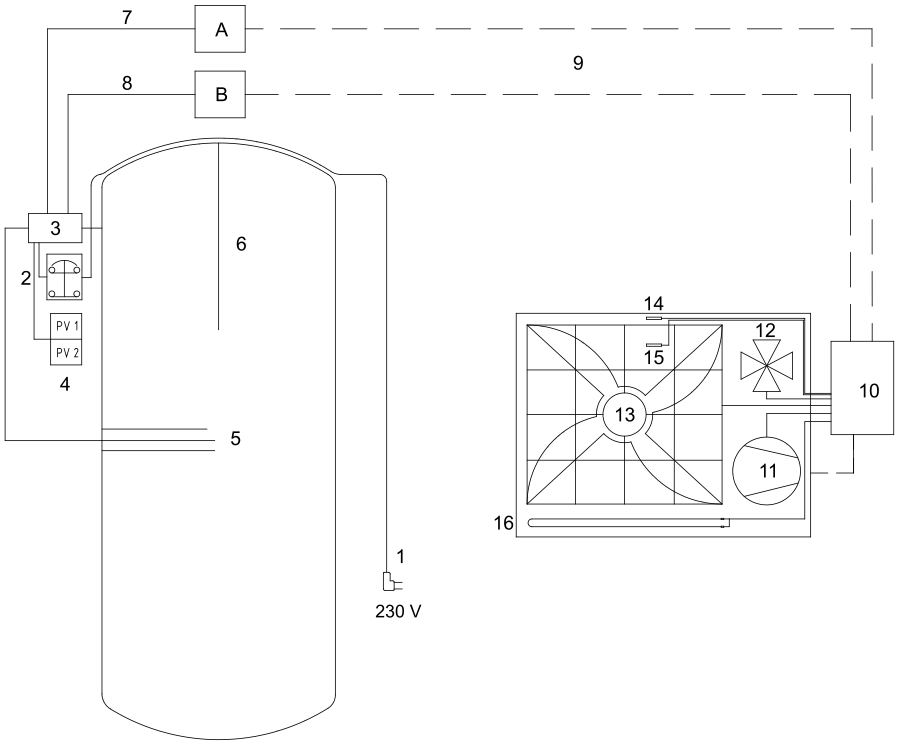
Sl. 12: Ventil

Uporaba vakumske črpalke

(Pri metodi, kjer se uporablja manometerski razdelilnik, glejte njegova navodila)
• Ventila C in D sta odprta!
• Do konca privijte matice A, B, C in D, priključite polnilno cev manometerskega razdelilnika na servisnemu ventilu notranje enote - kotla.
• Priključite centralni priključek na manometerskem setu na vakuumsko črpalko.
• Popolnoma odprite ročico Lo na manometerskem razdelilniku.
• Vključite vakuumsko črpalko.
• Ko je praznjenje končano, popolnoma zaprite ročico Lo na manometerskem razdelilniku in izklopite delovanje vakuumske črpalke.
• Praznjenje naj traja 25 minut ali več in preverite, če manometerski razdelilnik kaže – 76 cm Hg (- 1 bar)
• Obrnite steblo zapornega ventila B za približno 45 ° v nasprotno smer urnih kazalcev za 6 ~ 7 sekund; ko začne plin izhajati, ponovno zaprite zaporni ventil B.
• Preverite, če je prikaz tlaka na manometerskem razdelilniku nekoliko višji od atmosferskega tlaka.
• Odstranite polnilno cev iz servisnega ventila notranje enote - kotla.
• Popolnoma odprite stebli A in B zapornih ventilov.
• Dobro privijte pokrov zapornega ventila.

PRIKLJUČITEV NA ELEKTRIČNO OMREŽJE

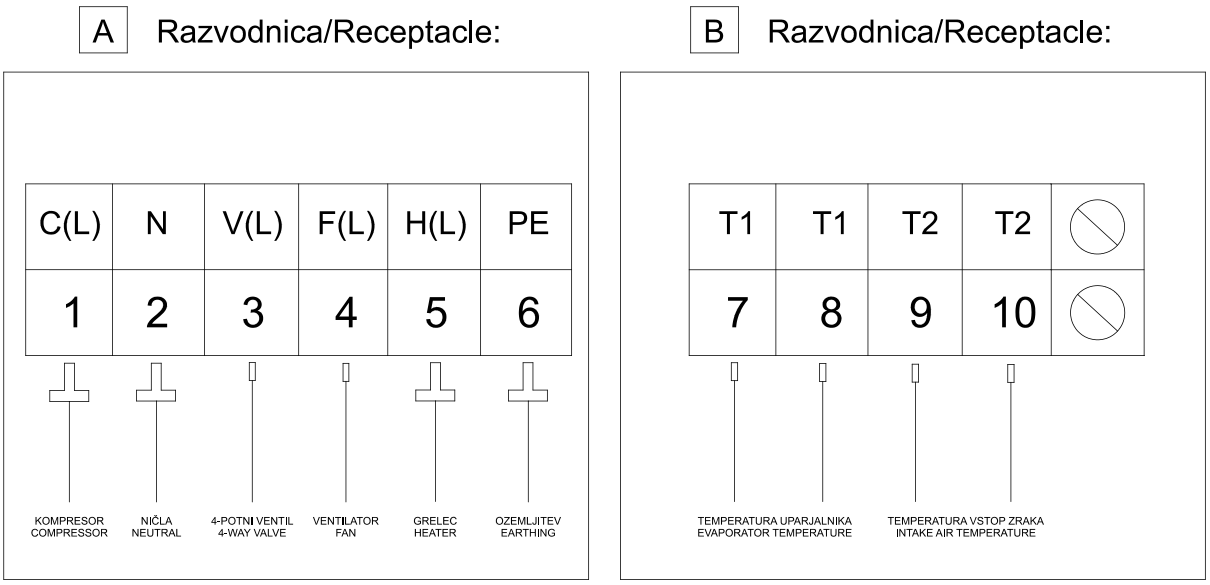
Priključitev toplotne črpalke na električno omrežje mora potekati v skladu s standardi za električne napeljave. Med notranjo enoto - kotlom in trajno inštalacijo mora biti vgrajena priprava za ločitev vseh polov od električnega omrežja v skladu z nacionalnimi inštalacijskimi predpisi.



LEGENDA
1 Priključni kabel
2 Termična varovalka
3 Elektronski regulator
4 Priključna sponka PV funkcije
5 Grelci (2x1000W)
6 Temperaturno tipalo kotla
7 Krmilna povezava
8 Senzorska povezava
9 Zunanja povezava med enotami
10 Priključni terminal zunanje enote (pod pokrovom)
11 Kompresor
12 4-potni ventil
13 Ventilator
14 Senzor temperature zraka
15 Senzor temperature uparjalnika
16 Grelec zunanje enote

SI. 13: Električna shema

Notranja enota - priključni terminali v razvodnicah



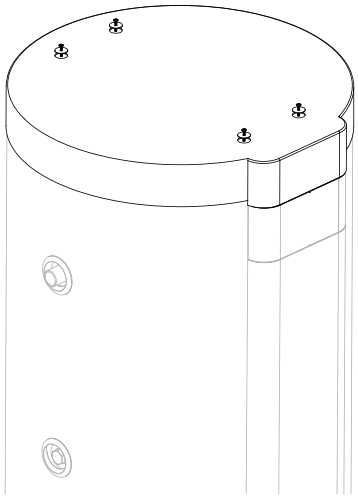
SI. 14: Priključni terminali v razvodnicah A in B

Povezava notranje enote – kotla in zunanje enote – agregata

- K črpalki je priložen povezovalni signalni kabel za povezavo zunanje enote - agregata in notranje enote - kotla, kateri prenaša informacijo iz temperaturnih senzorjev.
- Napajalni kabel za povezavo med notranjo enoto - kotlom in zunanjo enoto - agregatom ni priložen! Kabel mora zadoščati minimalni kakovosti H05RN-F s presekom od 1,0 do 1,5 mm^2.
- Na zunanji strani naj bodo povezovalni kabli dodatno zaščiteni pred atmosferskimi vplivi in drugimi potencialnimi nevarnostmi.

Priključitev kabla na notranjo enoto

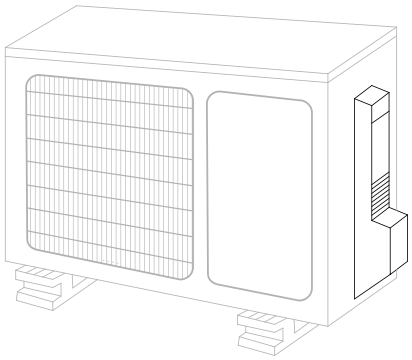
• Kable priključite na priključne sponke, kot je označeno s številkami na priključni letvi notranje enote.



Sl. 15: Odstranitev zaščitnega pokrova notranje enote

Priključitev kabla na zunanjo enoto

• Odvijte vijak in z zunanje enote snemite pokrov električne upravljalne plošče.
• Kable priključite na priključne sponke, kot je označeno s številkami na priključni letvi zunanje enote.
• S kabelsko sponko pritrdite kabel na upravljalno ploščo.
• Da preprečite vstop vode, naredite zanko s priključnim kablom, katera omogoča, da kapljice vode katere nastajajo na kablu vedno odtečejo stran od enote.
• Vodnike na zunanji enoti lahko menja le proizvajalec, njegov serviser ali pooblaščena oseba!



Sl. 16: Odstranitev zaščitnega pokrova zunanje enote

TEST DELOVANJA

Preizkus električne varnosti

Ko zaključite z montažo, opravite preizkus električne varnosti:
1. Izolacijska upornost
Izolacijska upornost mora biti večja od 2 MΩ.
2. Ozemljitev
Po ozemljitvi zmerite upornost ozemljitve z vizualnim zaznavanjem in preizkusno napravo odpornosti ozemljitve.
3. Preizkus odvodnih tokov (izvedeno med preizkusnim delovanjem)
Med preizkusnim delovanjem, ko končate z montažo, lahko serviser uporabi tipalo napetosti in multimeter, da izvede preizkus odvodnih tokov. Če se pojavijo odvodni tokovi, napravo takoj izklopite. Preglejte in iščite rešitev, dokler enota ne deluje pravilno.

Pregled puščanja plina

1. Način z milnico
Milnico ali nevtralno čistilno sredstvo nanesite z mehko ščetko na priključek notranje enote ali priključke zunanje enote, da preverite puščanje priključnih točk napeljave. Če se pojavijo mehurčki, cevi puščajo.
2. Detektor puščanja
Za kontrolo puščanja uporabite detektor puščanja.

Preizkusno delovanje

Ko opravite preizkus puščanja plina na priključkih maticah z zavihkom in pregled električne varnosti, opravite preizkusno delovanje.

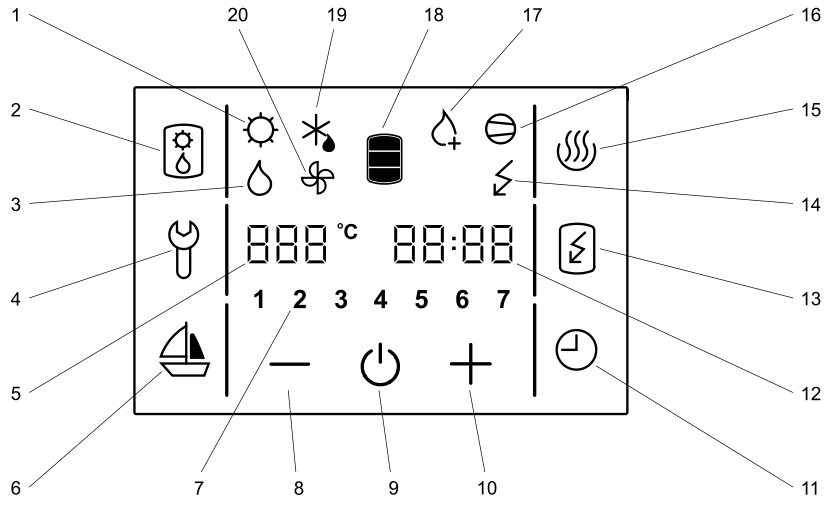
Pred električno priključitvijo notranjo enoto - kotel napolnite z vodo.
Preglejte, če so vse cevne in električne napeljave pravilno priključene.
Zagotovite, da so delovni ventili na plinski in tekočinski strani popolnoma odprti.

Preizkusno delovanje mora trajati približno 30 minut.

UPRAVLJANJE TOPLOTNE ČRPALKE

Toplotno črpalko upravljate preko LCD zaslona občutljivega na dotik (sl. 17). S pritiskom kjerkoli na zaslon se le-ta osvetli. Pri osvetljenem zaslonu so polja za upravljanje aktivna.

Po priključitvi toplotne črpalke na vodovodno in električno omrežje, ter z vodo napolnjenim kotlom, je le-ta pripravljena na delovanje. Toplotna črpalka segreva vodo v območju 10 °C - 55 °C. Od 55 °C - 75 °C vodo segreva električni grelec.



LEGENDA

1 Signalizacija delovanja PV funkcije
2 Vklop prezračevanja / Vklop rezervnega režima
3 Signalizacija delovanja rezervnega režima
4 Indikacija, pregled napak delovanja, vstop v servisni meni
5 Prikaz in nastavitev temperature v °C
6 Vklop in nastavitev programa dopust
7 Prikaz dneva v tednu (1.. ponedeljek, …, 7.. nedelja)
8 Zmanjševanje vrednosti
9 Vklop / izklop toplotne črpalke
10 Povečevanje vrednosti
11 Vklop in nastavitev časovnih načinov delovanja
12 Prikaz in nastavitev časa
13 Vklop pospešenega gretja "TURBO"
14 Signalizacija delovanja grelca
15 Vklop gretja na najvišji temperaturni nivo
16 Signalizacija delovanja kompresorja
17 Signalizacija delovanja protilegionelnega programa
18 Prikaz količine tople vode
19 Signalizacija odtaljevanja
20 Signalizacija delovanja ventilatorja

Sl. 17: Zaslon za upravljanje

Vklop / izklop toplotne črpalke

• Za vklop toplotne črpalke pritisnite na polje 9.
Pri zagonu aparata se najprej vklopi ventilator, ta deluje 1 minuto (prikazan je simbol **20**). Če je temperatura vstopnega zraka primerna, krmilnik vklopi še kompresor in toplotna črpalka deluje v normalnem režimu (prikazana sta simbola **16** in **20**). Toplotna črpalka je vklopljena, zaslon je neosvetljen.

V 60 sekundah po zadnjem pritisku kjerkoli na zaslonu, se osvetlitev zaslona ugasne, kar ne vpliva na delovanje toplotne črpalke. Prvi pritisk kjerkoli na zaslonu, ponovno aktivira osvetlitev zaslona.

V primeru poskusa vklopa pri nižjih temperaturah poglejte poglavje "Delovanje pri nižjih temperaturah".

• Z daljšim pritiskom na polje 9, toplotno črpalko izklopite.
Aparat ne deluje, na zaslonu je vidno le polje **9**. (Če boste toplotno črpalko za dalj časa izklopili, morate ob nevarnosti zamrznitve vodo iz nje iztočiti).

Zaščita pri izpadu električne energije

V primeru izpada električne energije ostanejo podatki o nastavitvah shranjeni nekaj ur.
Po ponovnem zagonu deluje toplotna črpalka v enakem režimu, kot je bil pred prekinitvijo napajanja.

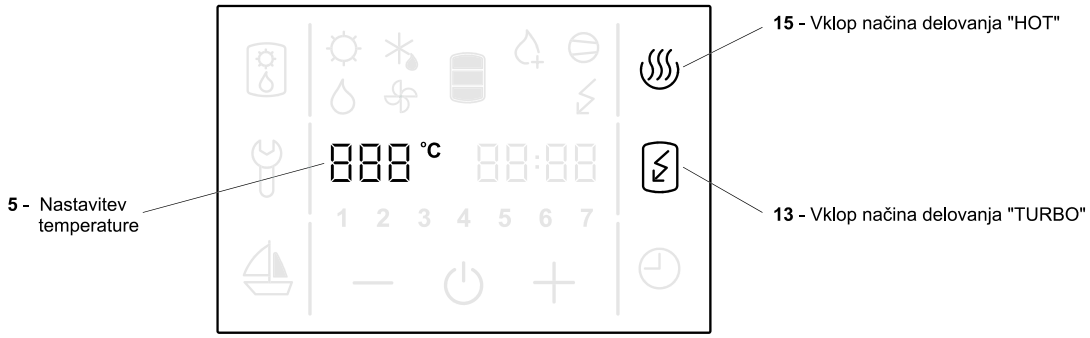
Delovanje pri nižjih temperaturah

Pri zagonu aparata se najprej vklopi ventilator (prikazan je simbol **20**). Če je temperatura vstopnega zraka nižja od -7 °C se ventilator izklopi. Za segrevanje sanitarne vode se vklopi grelec. Toplotna črpalka deluje v rezervnem režimu (prikazan je simbol **14**). Možnost preklopa na normalni režim delovanja se ciklično preverja. Če je temperatura vstopnega zraka višja od -7 °C preide toplotna črpalka v normalen režim delovanja (prikazana sta simbola **16** in **20**). Grelec se izklopi. Toplotna črpalka je vklopljena, zaslon je neosvetljen.

Pri nižjih temperaturah zraka se po potrebi sproži cikel odtaljevanja uparjalnika. Na zaslonu se prižge simbol **19**. Polja **2, 4, 6, 11, 13** in **15** so neaktivna. Odtaljevanje traja dokler niso doseženi pogoji za normalno delovanje toplotne črpalke.
Po uspešnem odtaljevanju se toplotna črpalka povrne v normalno delovanje. (prikazana sta simbola **16** in **20**).
Če je odtaljevanje neuspešno, krmilnik javi napako. Polje **4** na zaslonu začne utripati, spremljajo ga opozorilni piski. V polju **12** se izpiše koda napake **E247**, izvede se avtomatski preklop na ogrevanje z električnim grelcem. Na zaslonu je prikazan simbol 14. Kodo napake lahko v vsakem trenutku zbrišete s pritiskom na polje **4**. V polju **12** je ponovno prikazan čas.

Nastavitev časa in dneva v tednu

- Za daljši čas pritisnite na polje **12**, dokler se v polju **7** ne prikaže utripajoča številka dneva v tednu.
- S pritiskom na polje **+** ali **–** nastavite št. dneva v tednu (1.. ponedeljek, …, 7.. nedelja).
- Ponovno pritisnite na polje **12** (prikaže se utripajoče nastavljena ura).
- S pritiskom na polje **+** ali **–** nastavite uro (s pritiskom za dalj časa na polje **+** ali **–** nastavitev pospešite).
- Ponovno pritisnite na polje **12**.
- Prikažejo se utripajoče nastavljene minute.
- S pritiskom na polje **+** ali **–** nastavite minute (s pritiskom za dalj časa na polje **+** ali **–** nastavitev pospešite).
- Nastavitev je shranjena s ponovnim pritiskom na polje **12**, oziroma ko polje **12** preneha utripati.



Sl. 18: Nastavitev temperature, vklop načina "TURBO" in "HOT"

Nastavitev temperature

- Pritisnite na polje **5** (prikaže se utripajoče nastavljena temperatura).
- S pritiskom na polje **+** ali **–** spreminjate nastavitev temperature od 10 do 75 °C, tovarniška nastavitev je ekonomična temperatura 55 °C.
- Nastavitev je shranjena s ponovnim pritiskom na polje **5**, oziroma ko polje **5** preneha utripati. Na zaslonu se čez nekaj sekund prikaže dejanska temperatura. **Nastavitev temperature na aparatu naj bo takšna, da zadostuje dejanskim potrebam, priporočljive nastavitve so med 45 in 55 °C. Višje nastavitve niso priporočljive, saj se iznad teh temperatur vključijo električna grela, kar zmanjšuje učinkovitost sistema.**
- Ob izpadu omrežne napetosti se ohrani zadnja shranjena vrednost.

Vklop načina delovanja "TURBO"

- V kolikor v kratkem času potrebujete več tople vode kot jo lahko sproti ogreje toplotna črpalka, na zaslonu pritisnite polje **13** (vklop "TURBO" delovanja). Hkrati delujeta toplotna črpalka in električni grelec. Na zaslonu so prikazani simboli **14, 16** in **20**. Ko temperatura doseže 55 °C se črpalka povrne v delovanje pred vklopom "TURBO" načina delovanja.

Vklop načina delovanja "HOT"

- Če želite vodo segreti na maksimalno temperaturo 75 °C na zaslonu pritisnite polje **15**. Toplotna črpalka bo segrela vodo do 55 °C. Na zaslonu sta prikazana simbola **16** in **20**. Ko temperatura v kotlu doseže 55 °C se vključi električni grelec, ki bo segrel vodo do 75 °C. Na zaslonu je prikazan simbol **14**. Ko temperatura doseže 75 °C se črpalka povrne v delovanje pred vklopom "HOT" načina delovanja.

Prikaz vsebnosti tople vode v toplotni črpalki

Na polju **18** je prikazan simbol:

-  - ni tople vode
-  - manjša količina tople vode
-  - večja količina tople vode

Nastavitev načina delovanja dopust

V načinu delovanja dopust nastavite število dni (maksimalno 100), ko naj toplotna črpalka vzdržuje minimalno temperaturo vode (pribl. 10 °C).

- Za dalj časa pritisnite na polje **6** (polji 5 in 6 pričneta utripati).
- S pritiskom na polje **+** ali **–** nastavite število dni dopusta, ki jih prikazuje polje **5**.

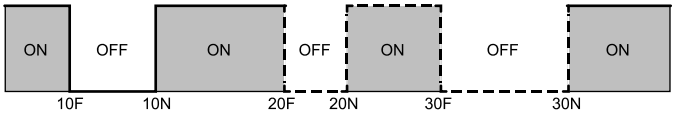
- S ponovnim pritiskom na polje **6**, oziroma ko polje **6** preneha utripati se nastavljeno število dni shrani.
- Če nastavite vrednost na 000, potem po potrditvi nastavitve toplotna črpalka preide v normalni način delovanja, osvetlitev polja **6** se ugasne.
- Po preteku nastavljenega števila dni toplotna črpalka preide v predhodno nastavljeni način delovanja, osvetlitev polja **6** se ugasne.

Nastavitev časovnega načina delovanja

V časovnem načinu delovanja nastavite čas vklopov in izklopov gretja vode. Za vsako kombinacijo časovnega obdobja je možno nastaviti do tri časovne periode v katerih toplotna črpalka ne bo segrevala vode.

a) Nastavitev časovnih period
- Za dalj časa pritisnite na polje **11** (polji **7** in **11** pričneta utripati).
- S pritiskom na polje **+** ali **–** izbirate med tremi kombinacijami časovnih načinov delovanja:
  - časovni način delovanja toplotne črpalke za ves teden (v polju **7** utripajo številke 1 do 7),
  - časovni način delovanja za obdobje od ponedeljka do petka in od sobote do nedelje (v polju **7** utripajo številke 1 do 5 in nato številki 6 in 7),
  - časovni način delovanja za vsak posamezen dan (v polju **7** utripajo posamezne številke 1 do 7). Za izbor posameznega dneva v tednu pritisnite na polje **+** ali **–** .
- Za nastavitev časa pritisnite polje **12**.
- Na polju **5** se prikaže napis 1OF, polje **12** utripa.
- S pritiskom na polje **+** ali **–** nastavite čas izklopa toplotne črpalke.
- Ponovno pritisnite na polje **12**.
- Na polju **5** se prikaže napis 1ON, polje **12** utripa.
- S pritiskom na polje **+** ali **–** nastavite čas vklopa toplotne črpalke.
- S ponovnim pritiskom na polje **12** lahko po zgornjem postopku nastavite tudi drugo in tretjo periodo.
- V primeru, da ne boste nastavljali druge in tretje periode, nastavitev potrdite s pritiskom na polje **11** oziroma počakajte, da polje **12** preneha utripati ter se nastavitev samodejno shrani.
- V primeru nastavljanja druge in tretje periode, nastavite začetke ter konce period 2 in 3 ter nastavitev potrdite po zgornjem postopku s pritiskom na polje **11** oziroma počakajte, da polje **12** preneha utripati ter se nastavitev samodejno shrani.
- V primeru nastavljanja časovnega načina delovanja "za vsak posamezen dan v tednu" oz. "za obdobje od ponedeljka do petka in od sobote do nedelje" je potrebno nastaviti vse 3 časovne periode po zgoraj opisanem postopku.

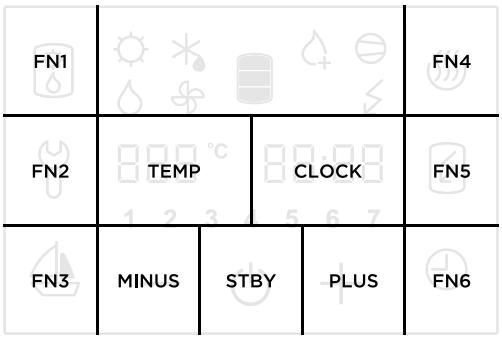
b) Vklop, izklop časovnika
- S pritiskom na polje **11** vklopite nastavljen časovni način delovanja.
- Toplotna črpalka segreva vodo v periodah ON (glede na nastavljeno temperaturo), v periodah OFF vode ne segreva.
- S ponovnim pritiskom na polje **11** izklopite nastavljen časovni način delovanja.



Sl. 19: Časovne periode

Dostop do servisnega nivoja

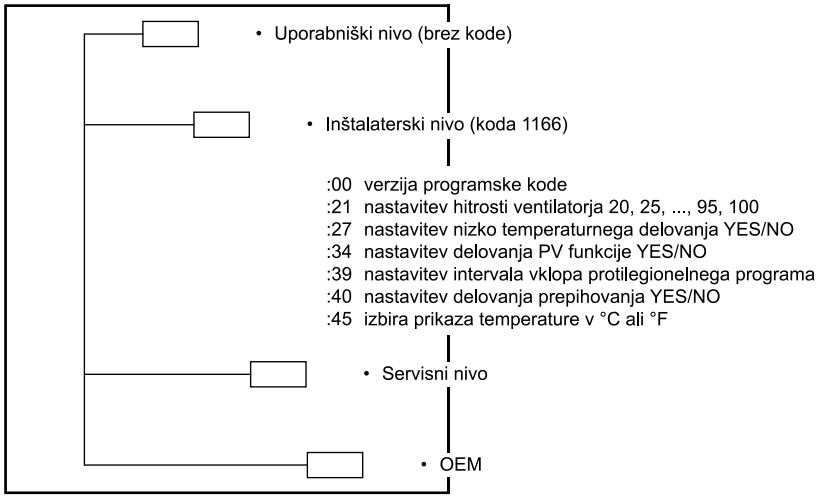
- Z daljšim pritiskom na polje **4** na prikazovalniku **sl. 17**, se vklopi funkcija »servisni režim«.
- Pojavi se vstopni meni z napisom code v polju **CLOCK**, za vnos servisne kode (polja FN1, FN2, FN3, FN4, FN5 in FN6), predstavljajo števila 1, 2, 3, 4, 5, 6 za vnos kode.



Sl. 20: Prikaz polj na prikazovalniku

- Če 10 s ni pritisnjeno nobeno polje se avtomatsko vrne iz menija v predhodno delovanje.
- Če je koda vpisana nepravilno, sledi avtomatski izhod iz vstopnega menija.
- Ob pravilnem vnosu kode, se prikaže prvi parameter, kjer številka na desni predstavlja zaporedno število parametra, na levi pa je njegova vrednost.
- Prvi parameter **:00** je verzija programske kode in je zgolj informativne narave.
- S pritiskom na desno številko (polje **CLOCK** na **sl. 20**) se prestavi na naslednji parameter.

Struktura servisnega nivoja
Na **sl. 21** je predstavljena struktura razdelitve servisnih nivojev.



Sl. 21: Struktura razdelitve servisnega nivoja

Inštalaterski nivo (koda 1166)
Po pravilnem vnosu kode za inštalaterski meni je omogočen dostop do naslednjih parametrov:
• **:00** verzija programske kode
• **:21** nastavitev hitrosti ventilatorja 20, 25, ..., 95, 100 (funkcija je neaktivna)
• **:27** nastavitev nizko temperaturnega delovanja YES/NO (obvezna nastavitev: YES)
• **:34** vklop PV funkcije YES/NO
• **:39** nastavitev intervala vklopa protilegionelnega programa
• **:40** vklop prepihavanja YES/NO (obvezna nastavitev: NO)
• **:45** izbira prikaza temperature v °C ali °F

Vklop PV funkcija (fotovoltaika) (parameter :34)
Yes – funkcija je aktivirana
No – funkcija je deaktivirana

Protilegionelni program (parameter :39)
• Ko je izbran parameter (:39), se s pritiskom na (**+**) ali (**-**) nastavi ponovljivost vklopa protilegionelnega programa (0 do 60 dni). Na levi strani (polje **5**) se izpisuje številčna vrednost nastavitve. Ko je želena ponovljivost vklopa protilegionelnega programa nastavljena, se po kratki časovni zakasnitvi samodejno shrani, oziroma se shrani po pritisku polja **4**. Če je vrednost parametra (:39) nastavljena na 0 je protilegionelni program izključen.
• Tovarniška nastavitev vklopa protilegionelnega programa: vsakih 14 dni delovanja toplotne črpalke, če v preteklem 14-dnevnem obdobju temperatura vode ni vsaj 1 uro nepretrgoma presegala 65 °C.
• Protilegionelni program deluje samo pri vključeni toplotni črpalki. Ko je aktiviran je prikazan simbol **17**.
• Protilegionelni program lahko vklopite ročno s pritiskom na polje **15**.
• Izvajanje protilegionelnega programa je možno prekiniti z izklopom črpalke na polju **9**.

Opozorilo: po segrevanju v protilegionelnem programu je temperatura vode v kotlu 65 °C ali več ne glede na nastavljeno temperaturo na aparatu.

Rezervni režim
• Vklop funkcije je mogoč z daljšim pritiskom na polje **2**.
• Rezervni režim predstavlja način delovanja z greli in se uporabi takrat, ko se na agregatnem delu zazna kakšna napaka delovanja. Voda se segreva z greli do nastavljene temperature.
• Izklop funkcije je mogoč z daljšim pritiskom na polje **2**.
• Simbol **3** je viden.
• V primeru uporabe rezervnega režima je nemudoma potrebno kontaktirati servis.

Signalizacija delovanja
Protilegionelnega programa:
• program vključen – kontrolno polje **17** je prikazano
• program izključen – kontrolno polje **17** ni prikazano

Električnega grelca:
• grelec vklopljen – kontrolno polje **14** je prikazano
• grelec izklopljen – kontrolno polje **14** ni prikazano

Toplotne črpalke:
• toplotna črpalka segreva vodo – kontrolno polje **16** je prikazano
• toplotna črpalka ne segreva vode – kontrolno polje **16** ni prikazano

Vklopa/izklopa:
• toplotna črpalka vključena – poleg polja **9** so na zaslonu vidna tudi druga polja
• toplotna črpalka izključena – na zaslonu je vidno le polje **9**

Odtaljevanja:
• toplotna črpalka je v režimu odtaljevanja – kontrolno polje **19** je prikazano
• toplotna črpalka ni v režimu odtaljevanja – kontrolno polje **19** ni prikazano

Vklop/ izklop ventilatorja:
• ventilator deluje – kontrolno polje **20** je prikazano
• ventilator ne deluje – kontrolno polje **20** ni prikazano

Vklop prezračevanja – prisilni vklop ventilatorja zunanje enote (kratek pritisk na polje **2**):
• vklop prezračevanja – kontrolno polje **2** je prikazano

Vklop rezervnega načina (dolg pritisk na polje **2**):
• rezervni režim vklopljen – kontrolno polji **3** je prikazano
• rezervni režim izklopljen – kontrolno polje **3** ni prikazano

FUNKCIJA PV (PHOTOVOLTAIC)

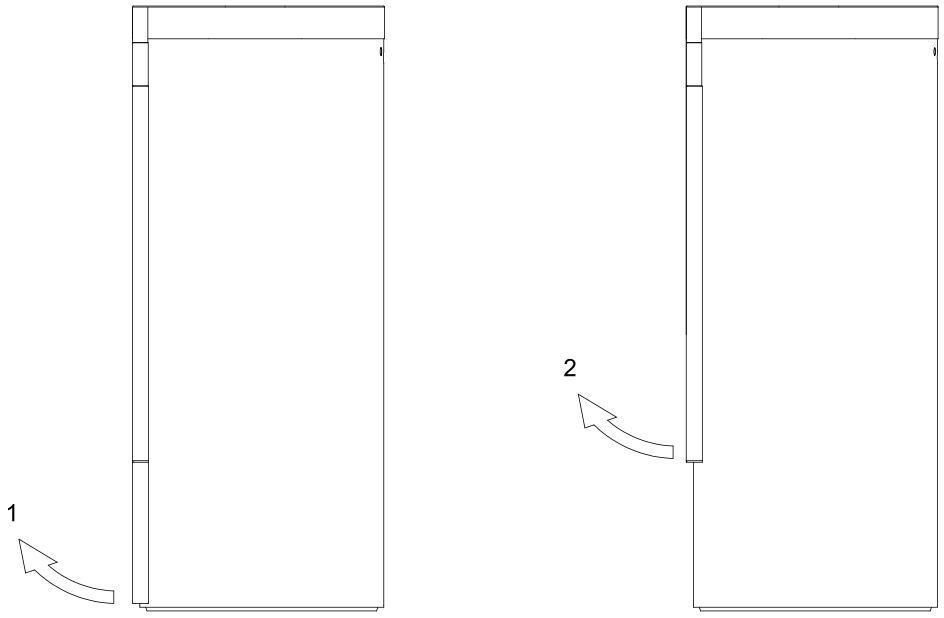
• V primeru sklenjenega breznapetostnega kontakta med sponkama 1 in 2 je PV funkcija aktivna (sl. 24).
• V primeru sklenjenega breznapetostnega kontakta med sponkama 1 in 2 je na zaslonu je prikazano polje 1.
• Za sklenitev breznapetostnega kontakta je potrebno s fotovoltaiko zagotoviti 800W električne moči.
• Tovarniško je funkcija nastavljena kot neaktivna.
• Funkcija se aktivira v inštalacijskem meniju z nastavitvijo parametra 34.
• Funkcija ima prioriteto pred časovno nastavitvijo delovanja!
• Funkcija ne vpliva na varnostni vklop.
• V primeru protelegionelnega načina delovanja se izvede protiegionelni cikel neglede na stanje kontakta.

Delovanje funkcije (v primeru, da je funkcija aktivirana):
• Kontakt sklenjen in je dovoljeno delovanje toplotne črpalke. Toplotna črpalka segreva vodo do maksimalne temperature segrevanja TČ (glej tabelo tehničnih podatkov). Grelec se ne aktivira.
• Kontakt razklenjen in je dovoljeno delovanje toplotne črpalke. Toplotna črpalka vzdržuje temperaturo vode 40°C.

Snemanje EPP servisnega pokrova

Modeli TC30XXXX
1. S potegom na spodnji strani odstranimo krajši del EPP servisnega pokrova.
2. S potegom na spodnji strani odstranimo daljši del EPP servisnega pokrova. Ponovna namestitev poteka v nasprotnem vrstnem redu.

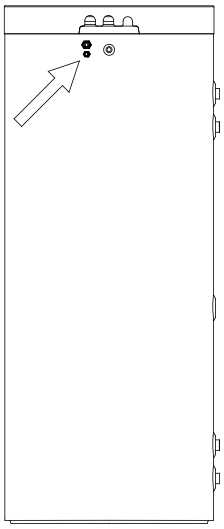
Modeli TC20XXXX
Glej točko 2, ki je navedena pri modelih TC30XXXX.



Sl. 22: Snemanje EPP servisnega pokrova

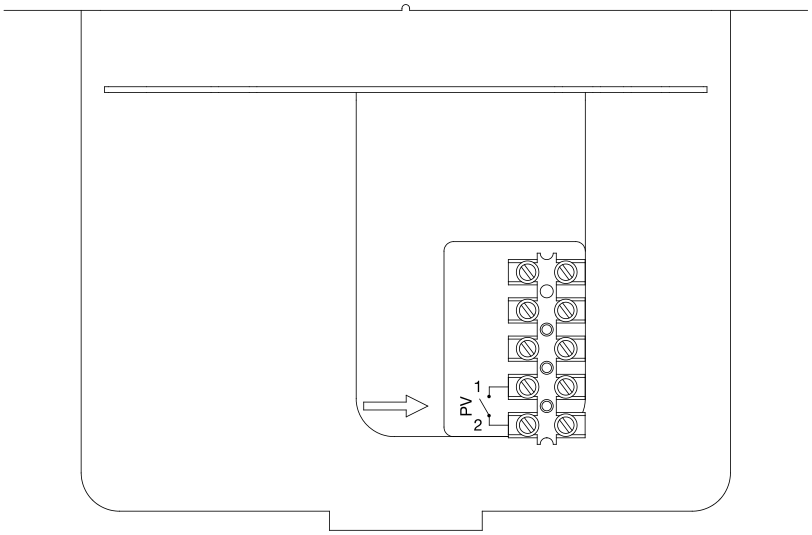
Priklop zaznavanja PV (photovoltaic)

Povezavo PV modula na toplotno črpalko sme priključiti le za to usposobljen strokovnjak. Na zadnji strani toplotne črpalke, pod priključno vrvico, je pripravljena uvodnica za priključitev PV funkcije. Mesto uvodnice je prikazano na **sl. 23**. Za priključitev uporabite priključno vrvico minimalnega preseka vodnikov vsaj 0,5 mm^2 (H05VV-F 2G 0,5 mm^2) in maksimalnim zunanjim presekom 10mm, zato morate odstraniti EPP servisni pokrov. Način odstranitve je opisan v predhodnem poglavju.



Sl. 23: Mesto uvodnice za priklop zaznavanja PV (photovoltaic)

Priključno vrvico priključite na vrstno sponko, ki se nahaja pod upravljalno enoto. Mesto priključitve je označeno z oznako PV. Uporabite mesti 1 in 2.



Sl. 24: Priklop zaznavanja PV (photovoltaic)

UPORABA IN VZDRŽEVANJE

Po priključitvi na vodovodno omrežje ter druge vire ogrevanja je hranilnik tople vode s toplotno črpalko pripravljen za uporabo. Kadar obstaja nevarnost, da bo voda v hranilniku tople vode zmrznila, jo morate iz njega iztočiti. Pri tem odpremo ročico za toplo vodo na eni od mešalnih baterij, ki je priključena na hranilnik tople vode. Vodo iz hranilnika tople vode izpustimo skozi za to predviden izpustni ventil na dotočni cevi.

Zunanjost toplotne črpalke čistite z mehko krpo in blagimi tekočimi čistili. Ne uporabljajte čistil, ki vsebujejo alkohol ali abrazivna sredstva. V primeru, da je toplotna črpalka izpostavljena prahu se lahko dokaj hitro zamašijo lamele uparjalnika, kar škodljivo vpliva na njeno delovanje.

Z rednimi servisnimi pregledi boste zagotovili brezhibno delovanje in dolgo življenjsko dobo hranilnika tople vode s toplotno črpalko. Garancija za prerjavenje kotla velja le, če ste izvajali predpisane redne preglede izrabljenosti zaščitne anode. Obdobje, med posameznimi rednimi pregledi, ne sme biti daljše od 36 mesecev. Pregledi morajo biti izvedeni s strani pooblaščenega serviserja, ki Vam pregled evidentira na garancijskem listu proizvoda. Ob pregledu preveri izrabljenost protikorozijske zaščitne anode in po potrebi očisti vodni kamen, ki se glede na kakovost, količino in temperaturo porabljene vode nabere v notranjosti hranilnika. Servisna služba vam bo po pregledu hranilnika tople vode glede na ugotovljeno stanje priporočila tudi datum naslednje kontrole.

Kljub skrbni proizvodnji in kontroli lahko pride pri delovanju toplotne črpalke do določenih težav in napak, katere mora praviloma odpraviti pooblaščeni serviser.

Pred prijavo morebitne napake pa preverite sledeče:
• Če je z dovodom električne energije vse v redu?
• Če ima izhajajoči zrak ovire (uparjalnik lahko zaledeni)?
• Če je temperatura okolice prenizka (uparjalnik lahko zaledeni)?
• Če se ne sliši delovanje kompresorja in ventilatorja?

⚠ **Prosimo Vas, da morebitnih okvar na hranilniku in toplotni črpalki ne popravljate sami, ampak o njih obvestite najbližjo servisno službo.**

MOTNJE V DELOVANJU

Kljub skrbni proizvodnji in kontroli lahko pride pri delovanju toplotne črpalke do motenj, katere mora odpraviti pooblaščeni serviser.

Indikacija napak

• V primeru napake na aparatu piskač prične piskati in polje **4** utripati. Ob pritisku na polje **4** se na polju **12** izpiše koda napake.

Napaka	Opis napake	Rešitev
E004	• Zmrzovanje. Napaka se pojavi, če je temperatura v toplotni črpalki nižja od 4 °C.	• Kličite servis.
E005	• Pregrevanje (temperatura > 85 °C, odpoved elektronskega regulatorja).	• Odklopite toplotno črpalko iz električnega omrežja, kličite servis.
E006	• Napaka delovanja Mg anode.	• Kličite servis (toplotna črpalka normalno deluje).
E007	• Napaka senzorjev volumna in/ali temperature.	• Kličite servis.
E042	• Napaka funkcije protilegionele.	• S pritiskom na polje **4** izbrišete napako.
E247	• Napaka odtaljevanja.	• Avtomatsko se vklopi segrevanje z električnim grelom. Po izbrisu napake se ponovno omogoči delovanje agregata.
E361	• Napaka senzorja zunanjega zraka.	• Kličite servis (avtomatski preklop na segrevanje z električnim grelcem).
E363	• Napaka senzorja odtaljevanja.	• Kličite servis (avtomatski preklop na segrevanje z električnim grelcem).

Naši izdelki so opremljeni z okolju in zdravju neškodljivimi komponentami in so izdelani tako, da jih lahko v njihovi zadnji življenjski fazi čim bolj enostavno razstavimo in recikliramo.
Z reciklažo materialov zmanjšujemo količine odpadkov in zmanjšamo potrebo po proizvodnji osnovnih materialov (na primer kovine), ki zahteva ogromno energije ter povzroča izpuste škodljivih snovi. Z reciklažnimi postopki tako zmanjšujemo porabo naravnih virov, saj lahko odpadne dele iz plastike in kovin ponovno vrnemo v različne proizvodne procese.
Za več informacij o sistemu odlaganja odpadkov obiščite svoj center za odlaganje odpadkov, ali trgovca, pri katerem je bil izdelek kupljen.

PRIDRŽUJEMO SI PRAVICO DO SPREMEMB, KI NE VPLIVAJO NA FUNKCIONALNOST APARATA.
Navodila za uporabo so na voljo tudi na naših spletnih straneh http://www.gorenje.com.

WARNINGS

⚠ The appliance may be used by children aged 8 and older and persons with physical, sensory or mental disabilities or lacking experience or knowledge, if they are under supervision or taught about safe use of the appliance and if they are aware of the potential dangers.
⚠ Children should not play with the appliance.
⚠ Children should not clean or maintain the appliance without supervision.
⚠ Always transport the outdoor unit of the heat pump in an upright position; exceptionally, it may be tilted by 35° in all directions. Be careful not to damage the housing or the vital component parts of the appliance during transport.
⚠ The heat pump must not be placed in a closed space, containing corrosive and explosive materials.
⚠ The connection of the heat pump to the power supply must be performed in accordance with the standards for electrical installations. An appliance for the disconnection from the electrical network must be installed between the heat pump and the electrical network in accordance with the national installation regulations.
⚠ In avoidance of aggregate damage the heat pump must not operate without water in the tank.
⚠ The installation should be performed in accordance with the valid regulations and the instructions of the manufacturer. It should be performed by a professionally trained installation expert.
⚠ It is necessary to install a safety valve with a rated pressure of 0.6 MPa (6 bar) or 0.9 MPa (9 bar) (see nameplate), to prevent the pressure in the boiler from rising by more than 0.1 MPa (1 bar) above the rated pressure.
⚠ Water may drip from the outlet opening of the safety valve, so the outlet opening should be set to atmospheric pressure.
⚠ The outlet of the safety valve should be installed facing downwards and in a non-freezing area.
⚠ To ensure proper functioning of the safety valve, the user should perform regular controls to remove limescale and make sure the safety valve is not blocked.
⚠ Do not install a stop valve between the heat pump and the safety valve, because it will impair the pressure protection of the storage tank!
⚠ Elements of the electronic control unit are under voltage even after the heat pump has been switched off (9).
⚠ To avoid danger, a damaged connecting line and connecting cable for connecting the indoor and outdoor units can only be replaced by the manufacturer, its service provider or an authorised person.
⚠ The storage tank is protected in case of failure of the operating thermostat with an additional thermal cut-out. In case of thermostat failure water in the storage tank may reach the temperature of up to 130 °C in accordance with safety standards. The possibility of such temperature overload should be taken into consideration in the execution of plumbing.
⚠ Should you choose to disconnect the power, the storage tank should be drained thoroughly before the onset of freezing conditions.
⚠ Water from the storage tank is drained through the inlet pipe of the tank. For this purpose, a special fitting (T-fitting) with an outlet valve must be mounted between the safety valve and the inlet pipe.
⚠ Please, do not try to fix any defects of the heat pump on your own. Call the nearest authorised service provider.
⚠ The decline in temperature of an additional heating source and the enabled water circulation via the heat exchanger can cause an uncontrolled removal of heat from the water tank. When connecting to other heating sources it is necessary to ensure proper temperature regulation of the additional heating source.
⚠ When connecting to sources of solar energy as an external heating source the aggregate of the heat pump must be disconnected. The combination of both heating systems can lead to

overheating of water and consequently to excessive pressure.
⚠ Circulation leads to additional heat loss in the water tank.
⚠ This product contains fluorinated greenhouse gases. Hermetically sealed.

Dear buyer, thank you for purchasing our product.
PRIOR TO THE INSTALLATION AND FIRST USE OF THE HOT WATER STORAGE TANK WITH THE HEAT PUMP, PLEASE READ THESE INSTRUCTIONS CAREFULLY.

This storage tank has been manufactured in compliance with the relevant Standards, which allow the manufacturer the use of the CE sign. Its basic technical characteristics are indicated on the label on the backside of the indoor unit – boiler, and on the outdoor unit – aggregate, next to the electric terminal box.

The connection of the storage tank with the heat pump to the plumbing and power networks must be carried out by qualified staff only. **All repairs and maintenance work in the interior of the storage tank, as well as limestone removal or testing or replacement of the corrosion protection anode, may only be carried out by an approved maintenance service provider.** Be especially careful when following instructions for potential errors and safe use of the heat pump.

Store this booklet for times of doubt upon the functioning or maintenance.
The installation manual is available on our webpage http://www.gorenje.com or the webpages per country in the service and support section.
Authorised maintenance personnel are available for occasional maintenance. They will help you with their vast experience.

The hot water storage tank is designed in a manner which allows using the following heating sources:
• Central heating storage,
• Solar power,
• Electric heater.

USE

This unit is designed for production of sanitary water in households and at premises where daily consumption of hot water (50 °C) does not exceed 400 l to 700 l. **The set temperature should suffice actual needs. Recommended temperature settings are between 45 and 55 °C. Higher temperatures are not recommended as they reduce the efficiency (COP) and extend the time of heating or increase the number of operating hours.** The operation of the heat pump is completely automatic.

The appliance must be connected to water supply mains and to the power supply grid. We recommend leaving enough space between the floor and unit as to provide easy access to the Mg anode (for maintenance or replacement purposes – Fig. 1).
The heat pump may not be used for purposes other than those defined in these Instructions. The unit is not designed for industrial use or use in rooms where corrosive or explosive substances are present.
The manufacturer shall not assume any liability for damages caused by incorrect installation or misuse that are not in compliance with the Instructions for installation and use.

The **instructions for use** are a component and important part of this product and must be delivered to the customer. Read the warnings carefully, as they contain important directions related to safety during operation, use and maintenance.
Keep these Instructions for later use.

Your indoor unit's type marking is indicated on the label on the upper back side of the indoor unit – boiler and the outdoor unit – aggregate, next to the electric terminal box.

Once the packaging is removed, check the contents. When in doubt, contact your dealer. Never let children play with the packaging parts (clamping, plastic bags, expanded polystyrol, etc.) – potential risk. Make sure to remove and dispose of the packaging safely and in an environmentally friendly way.

⚠ **The appliance is not intended for use in closed space, containing corrosive and explosive materials.**
⚠ **Always transport the outdoor unit of the heat pump in an upright position; exceptionally, it may be tilted by 35° in all directions. Be careful not to damage the housing or the vital component parts of the appliance during transport.**

STORAGE AND TRANSPORT

Store the outdoor unit – the aggregate of the heat pump in an upright position, in a clean and dry place. Store the indoor unit – the boiler in an upright position, in a clean and dry place.

TECHNICAL CHARACTERISTICS

INDOOR UNIT TYPE KEY

TC 301 SGNE

NE = Indoor unit
G = installed heater
Heat pump with a separate aggregate and single exchanger

Type		TC200SGNE	TC201SGNE	TC300SGNE	TC301SGNE	TC306SGNE	TC302SGNE
Use profile		L	L	XL	XL	XL	XL
Energy efficiency class [1]		A	A	A	A	A	A
Energy efficiency of water heating ηwh [1]	%	109,1	109,1	109,9	109,9	109,9	109,9
Annual electrical energy consumption [1]	kWh	938	938	1525	1525	1525	1525
Daily electrical energy consumption [1]	kWh	4,422	4,422	7,093	7,093	7,093	7,093
Set thermostat temperature	°C	55	55	55	55	55	55
Level of indoor sound power [3]	dB (A)	15	15	15	15	15	15
Outdoor unit noise level [3]	dB (A)	56	56	56	56	56	56
Smart value		0	0	0	0	0	0
Storage volume	l	202	194	295	276	283	276
Mixed water at 40 °C V40 [2]	l	259	252	395	370	381	370
Potential safety measures (assembly, installation, maintenance)		Compulsory use of a safety valve with the pressure connection.					
Technical characteristics							
Heating time A7 / W10-55 [4]	h:min	6:48	6:48	10:06	10:06	10:06	10:06
COP_{DHW} A7/W10-55 [4]		2,64	2,64	2,69	2,69	2,69	2,69
Power in standby mode [4]	W	27	27	27	27	27	27
Refrigerating agent		R134a	R134a	R134a	R134a	R134a	R134a
Quantity of refrigerant	kg	1,150	1,150	1,150	1,150	1,150	1,150
Global Warming Potential		1430	1430	1430	1430	1430	1430
Carbon dioxide equivalent	t	1,645	1,645	1,645	1,645	1,645	1,645
Operation area	°C	-7 ÷ 35	-7 ÷ 35	-7 ÷ 35	-7 ÷ 35	-7 ÷ 35	-7 ÷ 35
Area of airflow	m^3/h	1800	1800	1800	1800	1800	1800
Electrical characteristics							
Specified power of the compressor	W	510	510	510	510	510	510
Heater power	W	2000	2000	2000	2000	2000	2000
Maximum connection power	W	2850	2850	2850	2850	2850	2850
Voltage	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50
Electrical protection	A	16	16	16	16	16	16
Moisture protection		IP24	IP24	IP24	IP24	IP24	IP24
Water tank							
Anti-corrosion protection of tank		Enamelled / Mg Anode					
Nominal pressure	MPa	0.6 / 0.9	0.6 / 0.9	0.6 / 0.9	0.6 / 0.9	0.6 / 0.9	0.6 / 0.9
The highest water temperature heat pump	°C	55	55	55	55	55	55
The highest water temperature electrical heater	°C	75	75	75	75	75	75
Indoor unit installation measurements							
Total height	mm	1300	1300	1690	1690	1690	1690
Width	mm	670	670	670	670	670	670
Depth	mm	690	690	690	690	690	690
Inlet/outlet water connections		G1	G1	G1	G1	G1	G1
Heating area PT - bottom	m^2	/	1,45	/	2,7	1,6	1,6
Heating area PT - top	m^2	/	/	/	/	/	1,0
Exchanger connectors		-	G1	-	G1	G1	G1
Weight/Filled with water	kg	77/89/281	100/112/294	96/108/391	138/150/414	122/134/405	140/152/416
The temperature of the heating medium in the heat exchanger	°C	/	5 ÷ 95	/	5 ÷ 95	5 ÷ 95	5 ÷ 95
Transport data							
Packaging	mm	800x800x 1500	800x800x 1500	800x800x 1890	800x800x 1890	800x800x 1890	800x800x 1890

PT...Heat exchanger

[1] directive 812/2013, 814/2013, EN16147:2011, average climate conditions
[2] in accordance with EN16147:2011
[3] in accordance with EN12102:2013
[4] inlet air temperature 7 °C, 89% humidity, water temperature between 10 and 55 °C in accordance with EN16147:2011

All the indoor unit types indicated in the table are compatible with the outdoor unit type TCSZE1NT or types of outdoor units indicated on the indoor unit next to the label. Use of other types of outdoor units is not allowed.

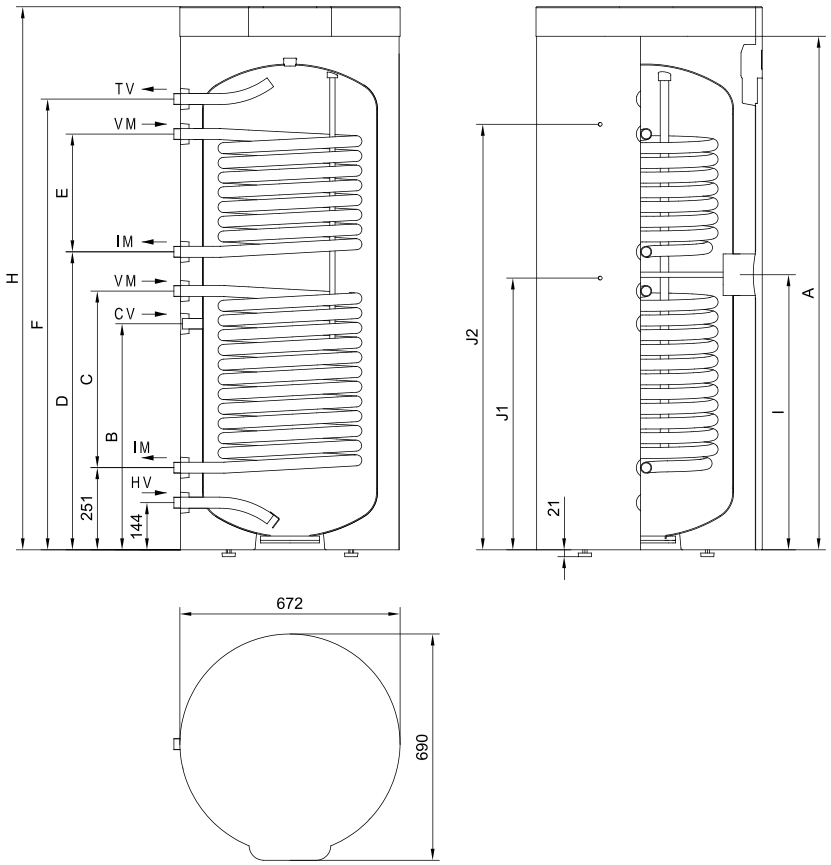
INSTALLATION OF THE HOT WATER STORAGE TANK WITH THE HEAT PUMP

EN

Installation must be carried out in accordance with the manufacturer's instruction by a qualified installation expert.

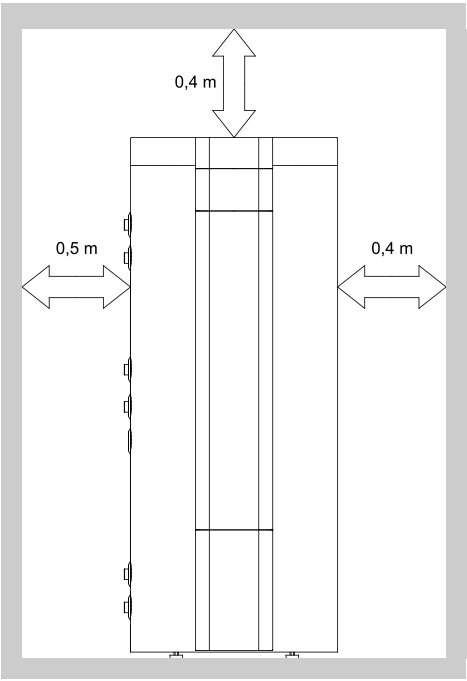
Indoor unit - boiler

The indoor unit – boiler must be installed in a frost-free room. It is recommended to choose a place that enables installation with minimum gas pipeline length.



LEGEND

PT	Heat exchanger
HV	Cold water inlet (H – blue rosette)
IM	Outlet PT (black rosette)
CV	Circulation pipeline (black rosette)
VM	Inlet PT (black rosette)
TV	Hot water outlet (T – red rosette)
J1	Sensor pipe
J2	Sensor pipe



	TC200 SGNE	TC201 SGNE	TC300 SGNE	TC301 SGNE	TC306 SGNE	TC302 SGNE
A (mm)	1170	1170	1560	1560	1560	1560
B (mm)	580	580	690	690	690	690
C (mm)	/	620	/	1020	540	540
D (mm)	/	/	/	/	/	910
E (mm)	/	/	/	/	/	360
F (mm)	975	975	1375	1375	1375	1375
H (mm)	1300	1300	1690	1690	1690	1690
I (mm)	615	615	840	840	840	840
J1 (mm)	/	/	/	790	790	830
J2 (mm)	/	900	/	1300	1300	1300
HV	G1	G 1	G1	G 1	G 1	G 1
IM	/	G 1	/	G 1	G 1	G 1
CV	G3/4	G3/4	G3/4	G3/4	G3/4	G3/4
VM	/	G 1	/	G 1	G 1	G 1
TV	G 1	G 1	G 1	G 1	G 1	G 1

Fig. 1: Connection and installation tank dimensions [mm]

Outdoor unit - aggregate

Mount the outdoor unit – aggregate in a horizontal position using a nut and bolt with a diameter of ø10 or ø8 to a concrete or other solid base.

Please take notice of the following warnings:
- If an awning is built to protect the unit from direct sunlight or rain, please make sure the air flow is not restricted.
- Make sure you leave more than 30 cm at the back and left side of the unit.
- At the front side, leave more than 200 cm of clearance.
- At the connection (right) side and above the unit, please make sure to leave more than 60 cm of space.
- Make sure there are no animals or plants nearby that could be harmed by the air coming out of the unit.
- Take into account the weight of the outdoor unit and choose an area where noise and vibrations will not be an issue.
- Please make sure you select a spot where the outdoor unit will not bother the neighbours.
- If the outdoor unit – aggregate is mounted to a roof, make sure to level the unit.
- Please make sure the roof structure and anchoring method are appropriate for the unit.
- When mounting the unit on the roof, please take into account the local regulations.

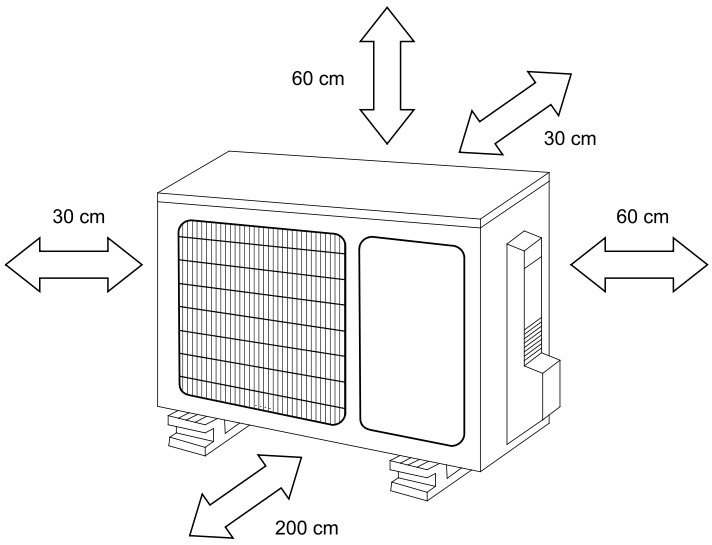


Fig. 2: installation dimensions of the outdoor unit – the aggregate

Installation of the outlet element

- Insert a gasket into the outlet elbow, insert the outlet element into the opening in the lower container of the outdoor unit and turn by 90 degrees to attach the element. Connect a pipe extension to the outlet element (not included) in case of water outlet from the outdoor unit.

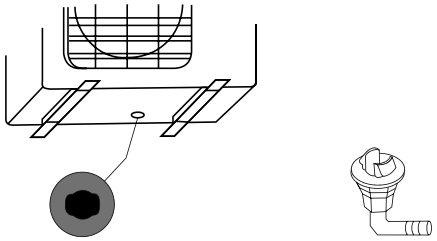


Fig. 3: Installing the outlet element

If the outdoor unit – aggregate is mounted on a roof construction or outside walls, this can cause excessive noise and vibrations. In this case the unit can generate excessive noise while operating. If the outdoor unit – aggregate is mounted directly on a roof there is a chance that the installation process will cause the roof to leak.

To reduce the transfer of noise and vibrations through walls into the premises where this could be a problem (bedrooms, rest areas), please take the following measures.
- Make sure the place of wall penetration is properly insulated.
- Make sure the outdoor unit – aggregate is mounted in an appropriate way.

Tools necessary for the installation

- Level indicator (hand level)
- Wrench
- Electric drill with a hollow bit (ø65 mm)
- Flaring tools
- Torque wrenches: 15 Nm 1/4" (6.35 mm), 25 Nm 3/8" (9.52 mm)
- Spanner (half union)
- Hexagonal wrench of suitable dimensions
- Gas-leak detector, Vacuum pump, Gauge manifold
- Thermometer, Multimeter, Pipe cutter, Measuring tape
- User's manual

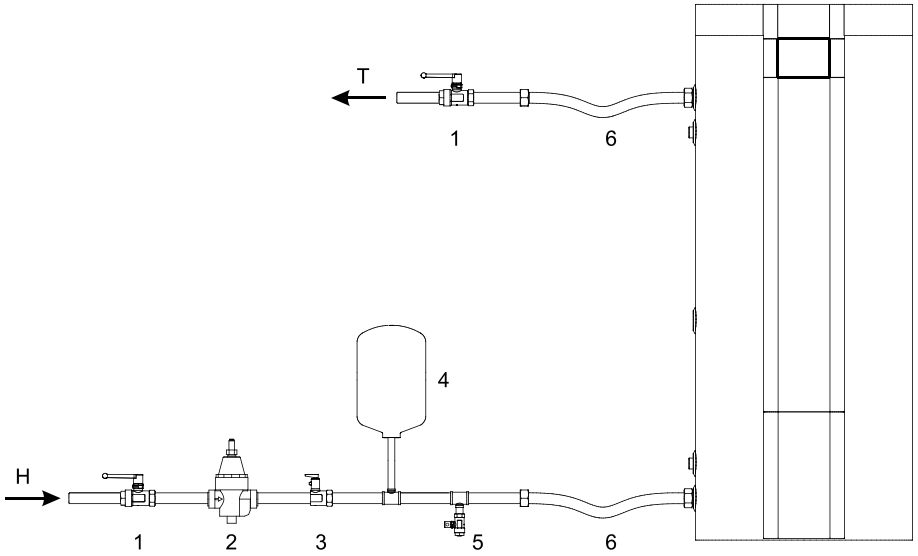
CONNECTION TO WATER SUPPLY MAINS

Connect the water pipeline system according to the attachment signs from the previous chapter (Fig. 1).

Installing a safety valve is mandatory in order to assure safe operation. The valve prevents an increase of the pressure in the boiler by any more than 0.1 MPa (1 bar) above the nominal pressure. The outflow nozzle on the safety valve must have an outlet into the atmosphere. To assure correct operation of the safety valve, check the valve regularly and, if necessary, remove the limescale and check that the safety valve is not blocked. When checking the valve, push the lever or unscrew the nut of the valve (depending on the type of the valve) and open the drain from the safety valve. Water must flow from the valve nozzle, showing that the valve operation is faultless. During the heating of water, the water pressure in the hot water tank is increased up to the level present in the safety valve. Since the system prevents backflow of water into the water supply mains, water may be dripping from the outlet opening on the safety valve. The dripping water may be drained via trap into the drains; the trap is mounted under the safety valve. The outlet pipe, which is mounted under the safety valve, must be directed downwards, in a place with a temperature above freezing.

If the installation does not allow draining of the water from the safety valve into the drains, dripping can be avoided by installing an expansion vessel onto the heat pump inlet pipe. The volume of the expansion vessel must be ca. 5% of the hot water tank volume.

The heat pump is designed for connection to indoor water supply mains without using the relief valve if the pressure in the supply mains is lower than prescribed on the appliance. If the pressure is higher, a relief valve needs to be installed so as to provide that the pressure at the inlet to the hot water tank does not exceed the nominal pressure.



LEGEND
1 Stop valve
2 Relief valve
3 Safety non-return valve
4 Expansion tank
5 Drain valve
6 Flexible hose

H Cold water
T Hot water

Fig. 4: Closed pressure system

⚠ In avoidance of aggregate damage the heat pump must not operate without water in the tank!

CONNECTION TO OTHER HEATING SOURCES

Hot water storage tank with the heat pump enables water heating via one or two heat exchangers with different energy sources (e.g. central heating, solar energy ...).

Connection options to different heating sources are shown below (Fig. 5).

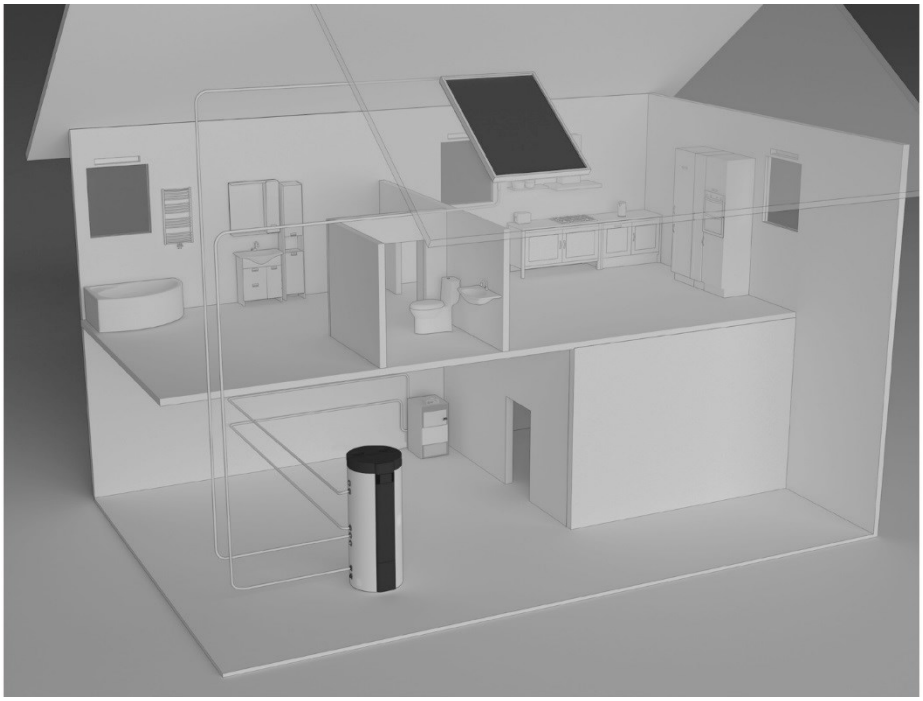


Fig. 5: Connecting to other heating sources

⚠ With a temperature decline of an additional heating source and with an enabled water circulation through the heat exchanger proper temperature control of the additional source must be ensured.

⚠ If the additional energy source is solar power, the operation of the aggregate of the heat pump must be shut off. The combination of two heating sources can lead to overheating of the hot water and thus to excessive pressures.

⚠ The circulation pipeline causes additional temperature decline in the hot water storage tank.

Other heating sources - sensor installation

On the left side of the hot water storage tank are two openings (J1, J2), where the sensors for the control system of the connection of the hot water tank to other heating sources. The maximum diameter of the probe is 8 mm. The length of the sensor tube is 180 mm.

Insert the sensor into the tube and attach it:
• if you install the sensor into a higher position, the thermostat will respond faster, the operation period of the circulation pump will be shorter, the difference between the water temperature in the storage tank and the temperature of the heating source after the shutdown of the thermostat will be higher. Consequently, the quantity and the temperature of hot water in the storage tank will be lower.
• if you install the sensor in a lower position, the operation period of the circulation pump will be longer, the difference between the water temperature in the storage tank and the temperature of the heating source after the shutdown of the thermostat will be lower. Consequently, the quantity and the temperature of hot water in the storage tank will be higher.

REFRIGERANT PIPES CONNECTION

The main reason for refrigerant leakage is poor flaring. The proper flaring procedure is as follows:

Preparation of pipes and connecting cables

- For gas connection between the outdoor and indoor unit, please use copper pipes with a diameter of 1/4'' x 0.6 mm (Φ6.35 mm x 0.6 mm) and 3/8'' x 0.6 mm (Φ9.52 mm x 0.6 mm).
- Measure the distance between the indoor unit – boiler and the outdoor unit – the aggregate.
- With appropriate tools, cut the pipe a little longer than the measured distance.
- Connecting cables should be about 1.0 m longer than the pipe length.

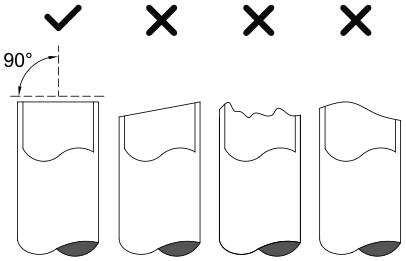


Fig. 6: Pipe preparation

Deburring

- Completely remove all burrs from the cut cross section of pipe.
- Point the end of the copper pipe in a downward direction as you remove burrs in order to avoid dropping burrs into the pipe.

Fig. 7: Deburring

Putting the nut on

- Remove the flare nuts attached to the indoor and outdoor unit, and then put them on the pipe having completed burr removal (it is not possible to put them on after flaring work).

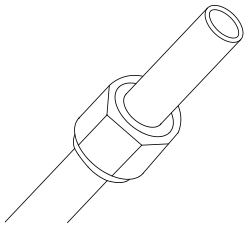


Fig. 8: Putting the nut on

Flaring

• Firmly hold copper pipe in a die (bar) in the dimension shown in the table below.

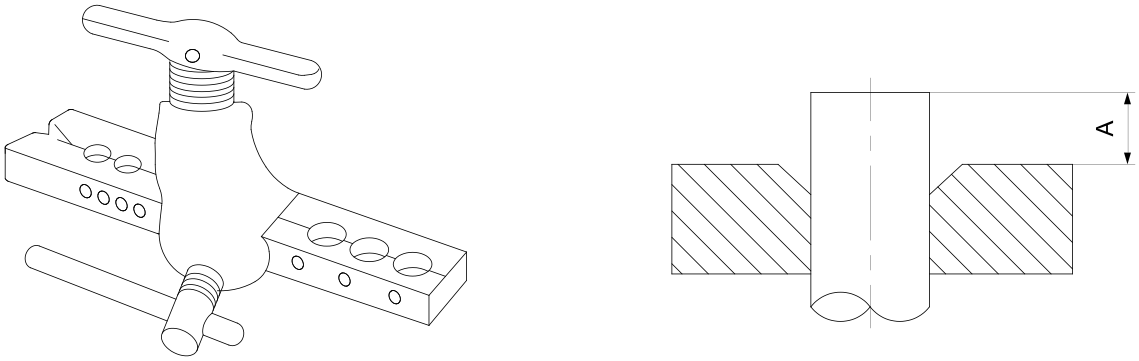


Fig. 9: Flaring

Outer diameter	A [mm]	
	Max.	Min.
1/4'' (Φ6.35 mm)	1,3	0,7
3/8'' (Φ9.52 mm)	1,6	1,0

Tightening the connection

• Align the centre of the pipes.
• Sufficiently tighten the flare nuts with your fingers, and then tighten them with a spanner and torque wrench as shown.

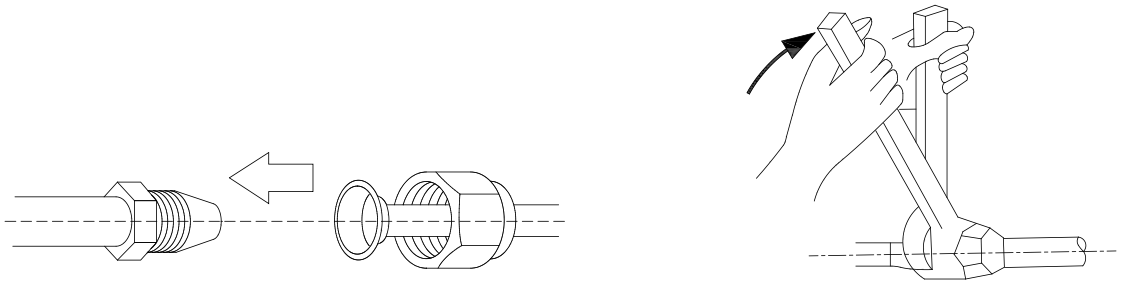


Fig. 10: Tightening the connection

Warning!

Excessive torque can break the nut depending on installation conditions.

Outer diameter	Rated tightening torque [Nm]
1/4'' (Φ6.35 mm)	16
3/8'' (Φ9.52 mm)	26

VACUUMING

EN

Air and moisture in the refrigerant system have undesirable effects as indicated below:
• Pressure in the system rises.
• Operating current rises.
• Cooling or heating efficiency drops.
• Moisture in the refrigerant circuit may freeze and block capillary tubing.
• Water may lead to corrosion of parts in the refrigeration system.

Therefore, the indoor unit and pipes between the indoor and outdoor unit must be leak tested with a pressure test and evacuated to remove any foreign bodies and moisture from the system.

Air purging with a vacuum pump

Check that each pipe (both liquid and gas side pipes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed. Remove the service valve caps from both the gas and the liquid side on the outdoor unit. Note that both the liquid and the gas side service valves on the outdoor unit are kept closed at this stage. On the indoor unit the valves (C, D) need to be opened at this stage!

Pipe length and quantity of refrigerant:

Connective pipe length	Additional quantity of refrigerant
Less than 5 m	150 g
5 to 8 m	150 g + (pipe length [m] – 5 [m]) x 20 g

When relocating the outdoor unit to another place, perform evacuation using a refrigerant pumping device.
Make sure the refrigerant added into the air conditioner is in the liquid form.
The adding of a refrigerant should be carried out on a low-pressure service valve in the outdoor unit – the aggregate. The process can only be performed by a qualified person.

Caution in handling the stop valve

• Open the valve stem until it hits against the stopper. Do not try to open it further.
• Securely tighten the valve stem cap with a spanner or a similar tool.
• Valve stem cap tightening torque (See the table of tightening torques).

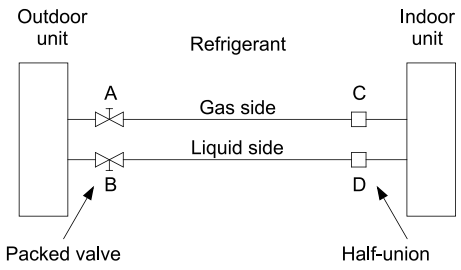


Fig. 11: Connection between the outdoor and the indoor unit

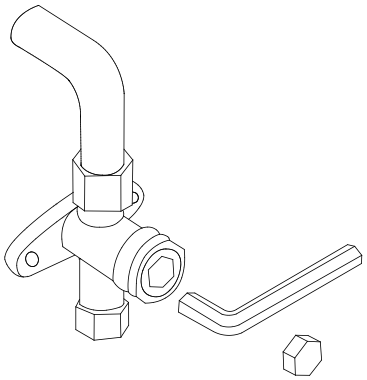


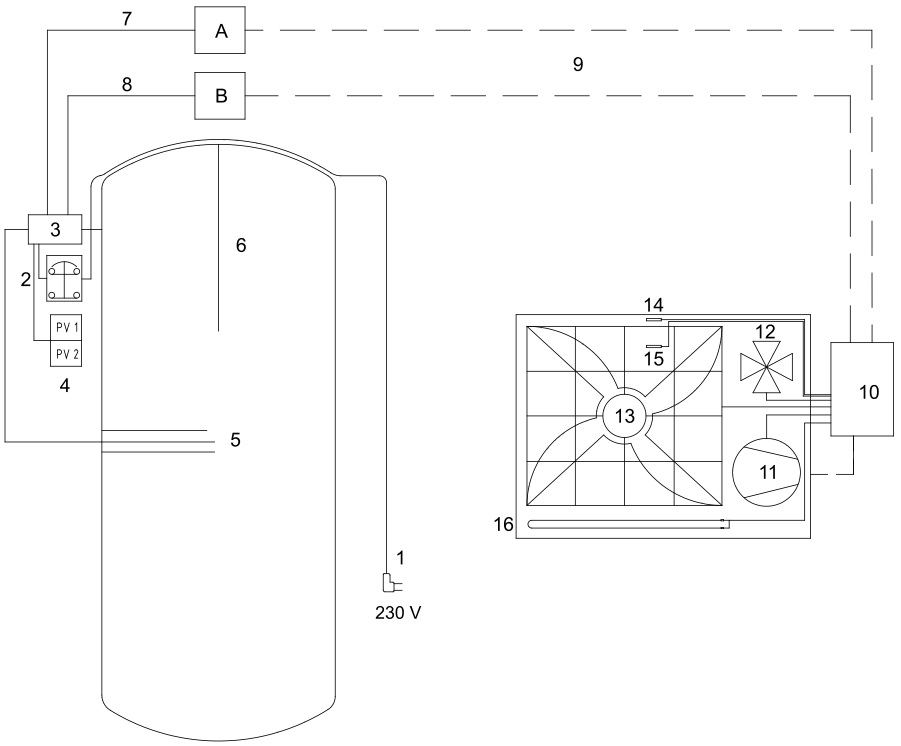
Fig. 12: Valve

Use of a vacuum pump

(For method of using a manifold valve, refer to its operation manual.)
• The C and D valves are open!
• Completely tighten the flare nuts, A, B, C, D, connect the manifold valve charge pipe to a charge port of the service valve on the indoor unit.
• Connect the pressure gauge set hose connection to the vacuum pump.
• Fully open the Lo handle of the pressure gauge manifold.
• Operate the vacuum pump to evacuate.
• After the evacuation is complete, fully close the Lo handle of the pressure gauge manifold and stop the operation of the vacuum pump.
• Let evacuation take place for 25 minutes or more and check that the pressure gauge indicates -76 cm Hg (-1 bar).
• Turn the stem of the stop valve B about 45° counter clockwise for 6~7 seconds; when the gas is coming out, tighten the stop valve B again.
• Make sure the pressure display in the pressure indicator is a little higher than the atmosphere pressure.
• Remove the charge hose from the service valve charge port on the indoor unit.
• Fully open the stop valve stems B and A.
• Securely tighten the cap of the stop valve.

CONNECTION TO THE POWER SUPPLY NETWORK

The connection of the heat pump to the mains should be performed in accordance with standards for electrical appliances. An all-poles disconnect switch should be installed between the indoor unit and the mains in accordance with the national installation standards.



LEGEND
1 Connecting cable
2 Thermal cut-out
3 Electronic regulator
4 Connection clamp of PV function (photovoltaics)
5 Heaters (2x1000W)
6 Temperature sensor - boiler
7 Control connection
8 Sensor connection
9 External connection between units
10 Connecting terminal of the outdoor unit (Under the cover)
11 Compressor
12 4-way valve
13 Fan
14 Ambient temperature sensor
15 Evaporator temperature sensor
16 Outdoor unit heater

Fig. 13: Connection to the power supply network

Indoor unit – connection terminals in receptacles

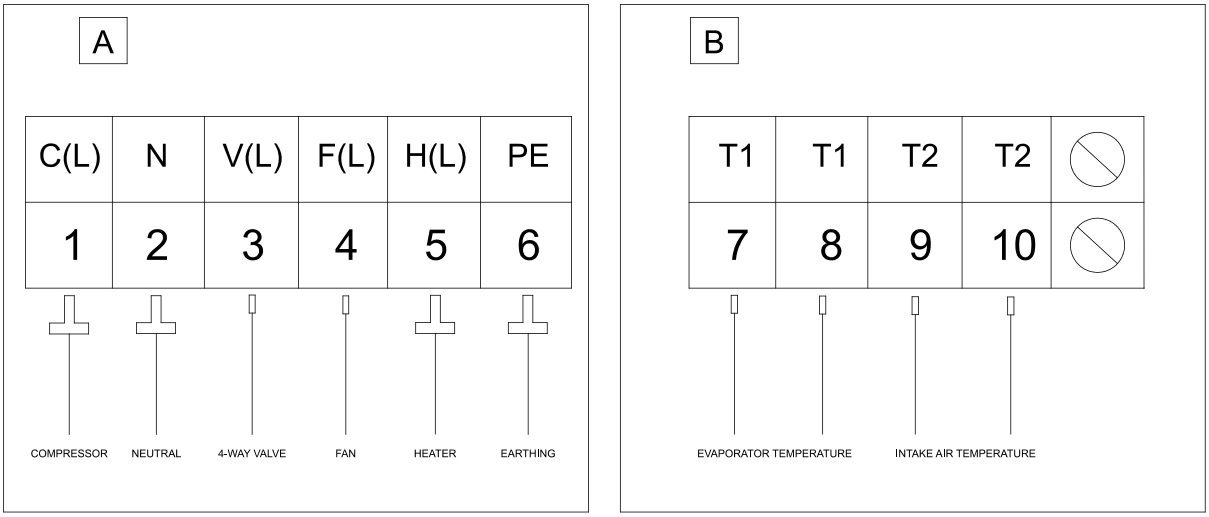


Fig. 14: Connection terminals in receptacles A and B

Connecting the indoor and the outdoor unit

- A connecting signal cable is enclosed with the heat pump to connect the indoor and the outdoor unit. The cable is used to transfer data from the temperature sensors.
- The supply cable that connects the indoor and the outdoor unit is not enclosed! The cable must comply with the minimum quality standard H05RN-F with a cross sectional area of 1.0 to 1.5 mm^2.
- On the outdoor side, the connecting cables must be additionally protected from the elements and other potential dangers.

Connecting the cable to the indoor unit

• Connect the cables to the connecting clamps as marked with numbers on the connecting panel of the indoor unit.

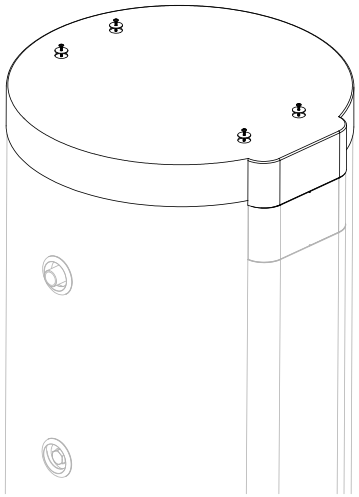


Fig. 15: Removing protective lid from the indoor unit

Connecting the cable to the outdoor unit

• Unscrew the bolt and take off the cover of the electrical control panel from the outdoor unit.
• Connect the cables to the connecting clamps as marked with numbers on the connecting plate of the outdoor unit.
• Using a cable camp attach the cable to the control panel.
• To prevent the penetration of water, make a loop with the connecting cable to make sure the droplets of water always drip away from the unit.
• Cables on the outdoor unit may only be replaced by the manufacturer, their service provider or an authorised person!

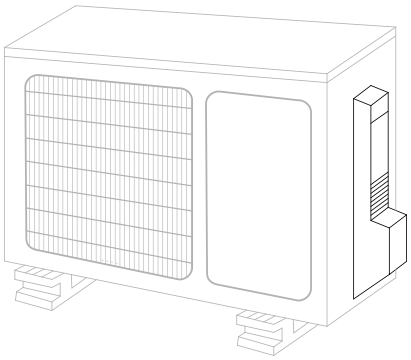


Fig. 16: Removing protective cover

TEST RUNNING

Electric safety check

Perform the electric safety check after completing the installation:
1. Insulated resistance
The insulated resistance must be more than 2 MΩ.
2. Grounding work
After finishing grounding work, measure the grounding resistance by visual detection and grounding resistance tester.
3. Electrical leakage check (performing during test running)
During test operation after finishing installation, the serviceman can use the electro probe and multimeter to perform the electrical leakage check. Turn off the unit immediately if leakage happens. Check and seek for a solution until the unit operates properly.

Gas leak check

1. Soap water method
Apply soap water or a liquid neutral detergent on the indoor unit connection or outdoor unit connections using a soft brush to check for leakage of the connecting points of the piping. If bubbles come out, the pipes are leaking.
2. Leak detector
Use the leak detector to check for leakage.

Test running

Perform the test operation after completing the gas leak check at the flare nut connections and the electrical safety check.

Before electrical connection, fill the indoor unit with water.
Make sure that all the pipes and wires are properly connected.
Make sure that the gas and liquid side service valves are fully open.

The test operation should last for about 30 minutes.

HEAT PUMP OPERATION

The heat pump can be operated using an LCD touch screen (Fig. 17). If you press anywhere on the screen, the screen lights up. When the screen is lit up, the operation fields are active.

When the heat pump is connected to the water and power supply mains and the boiler is filled with water, the heat pump is ready to be used. The heat pump heats the water in the range 10 °C - 55 °C. From 55 °C - 75 °C the water is heated by electrical heaters.

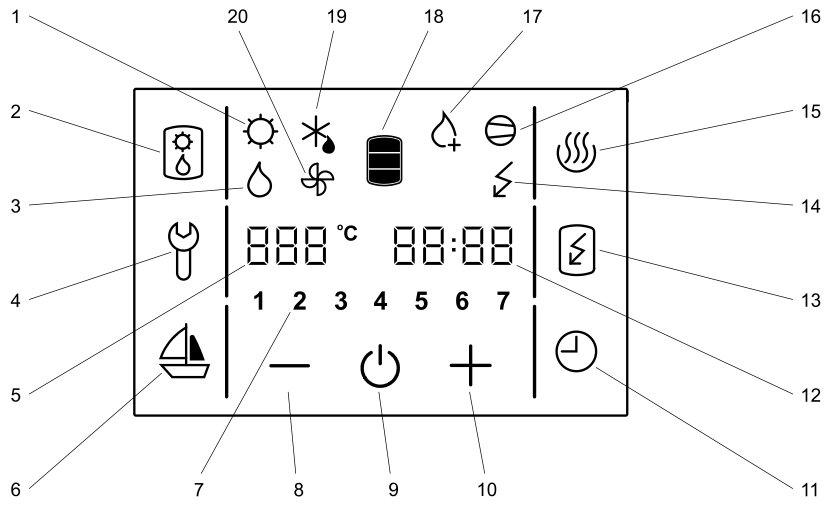


Fig. 17: Operation display

LEGEND

1	Signalization of the operation of solar collectors
2	Alternative source of heating/turned on
3	Signalization of the backup operation
4	Indication, overview of operation errors, entrance into the service menu
5	Display and setup of temperature in °C
6	Start and setup of the VACATION programme
7	Day of the week (1 .. Monday, …, 7 .. Sunday)
8	Reducing the value
9	Heat pump on/off switch
10	Increasing the value
11	TIMER start and setup
12	Time setup and display
13	Start-up of quick heating "TURBO"
14	Indicator of the heating element operation
15	Start-up of heating to the maximum temperature level
16	Signalization of compressor operation
17	Signalization of anti-legionella programme operation
18	Warm water quantity display
19	Signalization of defrosting
20	Signalization of fan operation

Starting/stopping the heat pump

• To start the heat pump, hold field no. 9.
When the appliance is switched on, the fan starts first and operates for one minute (symbol no. **20** is displayed). If the temperature of inlet air is appropriate, the controlling unit switches on the compressor and the heat pump operates in normal mode (symbols **16** and **20** are displayed). The heat pump is on, the screen remains unlit and inactive.

In 60 seconds after the last touch of the screen, the illumination and activity of the screen are turned off, but that does not affect the operation of the heat pump. Pressing anywhere on the screen re-activates the screen and its illumination.

If trying to start up at a lower temperature, please see chapter "Operation at lower temperatures".

• By holding field no. 9, the heat pump is switched off.
The appliance stops functioning and the only field visible on the screen is field no. **9**. (If you switch off the heat pump for a longer period of time, the water must be drained from the pump if there is any danger of freezing).

Power failure protection

In case of power failure, the settings remain stored for up to 23 hours.
After restarting, the heat pump operates in the same mode it was operating in before the power failure.

Operation at lower temperatures

When the appliance is switched on, the fan starts first and operates for one minute (symbol no. **20** is displayed). If the temperature of inlet air is lower than -7 °C, the fan is turned off. Domestic water is heated with heaters. The heat pump operates in the reserve mode (symbol no. 14 is displayed). The possibility of switching to normal mode is checked every 2 hours by switching on the fan for one minute. If the temperature of inlet air is higher than -7 °C, the heat pump switches to normal mode of operation (symbols **16** and **20** are displayed). The heaters switch off. The heat pump is on, the screen remains unlit and inactive.

At lower air temperatures, the evaporator defrosting cycle is started if necessary. Symbol no. **19** is displayed on the screen. The fields **2, 4, 6, 11, 13** and **15** remain inactive. Defrosting takes place until the conditions for normal operation of the heat pump are achieved.
After successful defrosting, the heat pump returns to normal operation (symbols **16** and **20** are displayed).
If defrosting is unsuccessful, the controlling unit displays an error message. Field no. **4** starts flashing, accompanied by warning beeps. By pressing field no. **4** the warning beeps can be turned off. Error code E247 appears in field no. **12** and the pump switches automatically to heating with electric heaters. The screen displays symbol no. **14**. The error code can be deleted at any time by pressing field no. **4**. Field no. **12** resumes to displaying time.

Setting the clock and day of the week

- Hold field no. **12**, until field no. **7** shows a flashing number of the day of the week.
- By pressing **+** or **–** you can set the number of the day of the week (1 – Monday, …, 7 – Sunday).
- Press field no. **12** again (flashing hour setting is displayed).
- By pressing **+** or **–** set the hour (by holding **+** or **–** you can speed up the setting).
- Press field no. **12** again.
- Flashing minute setting is displayed.
- By pressing **+** or **–** set the minutes (by holding **+** or **–** you can speed up the setting).
- The setting is stored when you press field no. **12**, or when the field stops flashing.

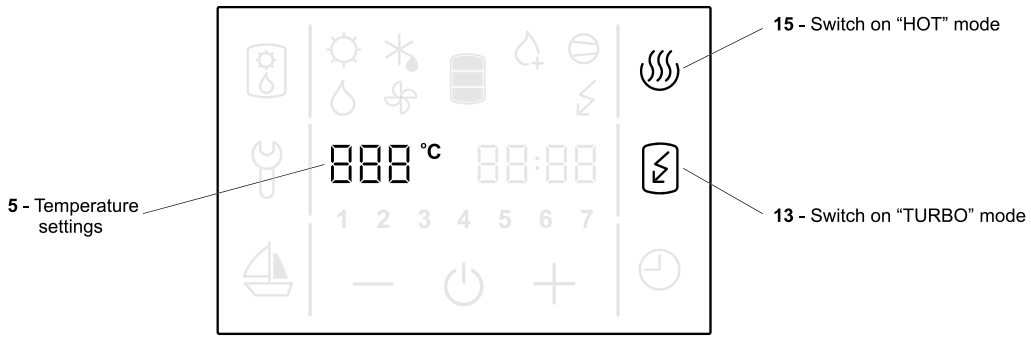


Fig. 18: Temperature settings, switch on “TURBO” and “HOT” mode

Setting the temperature

- Press field no. **5** (the set temperature starts blinking).
- By pressing **+** or **–** you can change the temperature setting from 10 °C to 75 °C, preset to economic temperature of 55 °C.
- The setting is stored by pressing field no. **5** again, or when field no. **5** stops flashing. After a few seconds, the display shows the actual temperature. **The set temperature should suffice actual needs. Recommended temperature settings are between 45 and 55 °C. Higher settings are not advisable because above these temperatures, electric heaters start and the system efficiency is reduced.**
- In case of power failure, the last stored value is restored.

Switching on the "TURBO" mode

- If you need more warm water than the heat pump can heat up in a short period of time, press field no. **13** (switches on the "TURBO" mode). The heat pump and heater work simultaneously. The screen shows symbols no. **14**, **16** and **20**. When the temperature reaches 55 °C the heat pump returns to the mode used before the "TURBO" mode.

Switching on the "HOT" mode

- If you want to heat the water to the maximum temperature of 75 °C, press field no. **15**. The heat pump will heat water to 55 °C. The screen displays symbols no. **16** in **20**. When the temperature in the boiler reaches 55 °C the electric heater turns on to heat the temperature up to 75 °C. The screen displays the symbol no. **14**. When the temperature reaches 75 °C the heat pump returns to the mode used before the "HOT" mode.

Display of the quantity of water in the heat pump

The display shows the symbol **18**:

- - no warm water
- - low quantity of warm water
- - high quantity of warm water

Setting the vacation mode

In the vacation mode, you can set the number of days (maximally 100), when the heat pump shall maintain the minimal temperature of water (approximately 10 °C).

- Hold field no. **6** for a while (fields **5** and **6** start to flash).
- By pressing fields **+** or **–** you can set the number of vacation days shown in field no. 5.
- By pressing field no. **6** again, or when field no. **6** stops flashing, the set number of days is stored.
- If you set the value to 0, then the heat pump will resume its normal operating mode after confirming the setting, and illumination of field no. **6** will turn off.
- After the set number of days has elapsed, the heat pump returns to the normal mode and illumination of field no. **6** turns off.

Setting the TIMER mode

In the TIMER operating mode, you can set the times when the heat pump will start and stop. For each timer combination you can set up to three time periods in which the heat pump will not heat the water.

a) Setting the timer combinations

- Hold field no. **11** for a while (fields **7** and **11** start to flash).
- By pressing fields **+** or **–** choose among three timer modes of operation:
  - Timer mode of operation of the heat pump for the entire week (numbers 1-7 flash in field no. **7**),
  - Timer mode of operation of the heat pump for Monday to Friday and Saturday to Sunday (numbers 1-5 and then 6 and 7 flash in field no. **7**),
  - Timer mode of operation of the heat pump for each day at a time (individual numbers 1-7 flash in field no. **7**). Press field **+** or **–** to select each day of the week.
- To set the time, press field no. **12**.
- On the field no. **5**, the text 1OF appears and field no. **12** starts to blink.
- By pressing fields **+** or **–** set the time of shutdown.
- Press field no. **12** again.
- On the field no. **5**, the text 1ON appears and field no. **12** starts to blink.
- By pressing fields **+** or **–** set the time of start-up.
- By pressing field no. **12** again, you can use the above procedure to set the second and third period.
- If you do not want to set the second and third periods, confirm the setting by pressing field no. **11** or wait for field no. **12** to stop flashing and the setting to be saved automatically.
- To set the second and third periods, set the start and end of periods 2 and 3 and confirm the setting following the procedure described above by pressing field no. **11** or wait for field no. **12** to stop flashing and the setting to be saved automatically.
- To set the timer operating mode "for each day of the week" or "for the period from Monday to Friday and from Saturday to Sunday", set all 3 time periods following the procedure described above.

b) Activation, deactivation of timer

- By pressing field no. **11**, you can activate the set timer mode.
- The heat pump heats the water in the ON periods (to the set temperature) and in the OFF periods, it does not heat the water.
- By pressing field no. **11** again, you can deactivate the set time mode of operation.

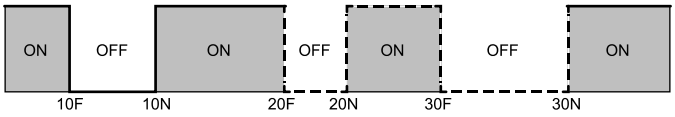


Fig. 19: Time period

Maintenance level access

- By pressing field no. **4**, you can activate the maintenance mode **(Figure 17)**.
- A display menu with an inscription “code” in the filed **CLOCK** appears. Enter the maintenance code (fields FN1, FN2, FN3, FN4, FN5 in FN6 for numbers 1, 2, 3, 4, 5, 6).

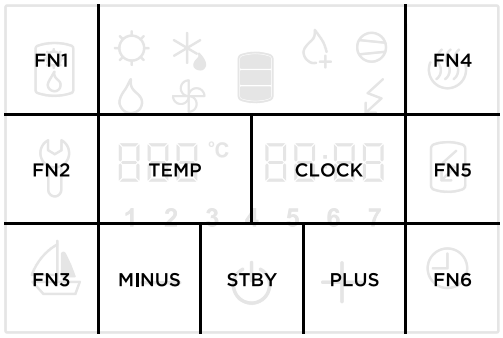


Fig. 20: Fields display

- If you do not press any field for 10 s, the programme returns to the start menu.
- If the code is incorrect, the programme returns to previous operation.

• If the code is correct, the first parameter appears on the display. The number on the right is the serial number of the parameter and the field on the left is intended for its value.
• The first parameter **:00** is a version of a software code and serves information purposes only.
• By pressing the right number (Field **CLOCK** in **Figure 20**) you proceed to the next parameter.

EN

Maintenance levels
Figure 21 shows the structure of maintenance levels.

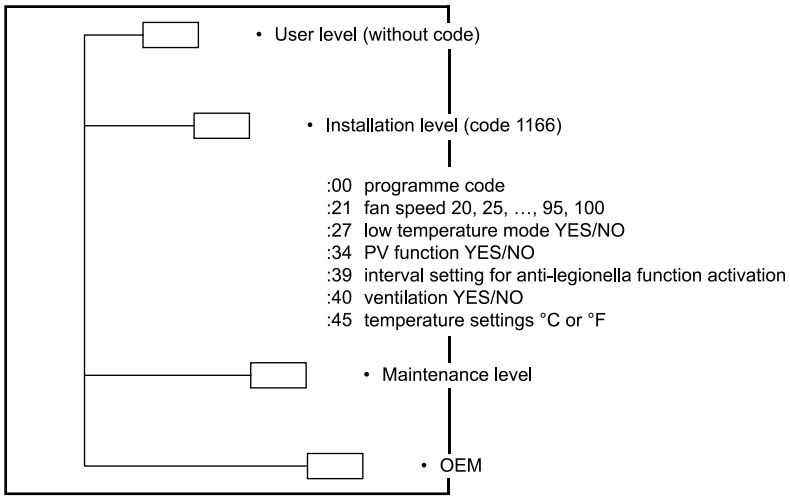


Fig. 21: Maintenance levels structure

Installation level (code 1166)
After the first code entry for the installation level the programme allows access to the following parameters:
• **:00** programme code
• **:21** fan speed 20, 25, …, 95, 100 (function is not active)
• **:27** low temperature mode YES/NO (obligatory setting: YES)
• **:34** PV function YES/NO
• **:39** interval setting for anti-legionella function activation
• **:40** ventilation YES/NO (obligatory setting: NO)
• **:45** temperature settings °C or °F

PV function activation (photovoltaics) (parameter :34)
Yes – activated
No – deactivated

Anti-legionella function (parameter :39)
• Select the parameter (:39) and set the interval for the anti-legionella function activation (0 to 60 days) by pressing (**+**) or (**-**). See the numerical value settings on the left side in field **5**. When the interval of the anti-legionella function activation is set, the changes are saved automatically after a few moments, or manually by pressing field no. **4**. If the parameter (:39) is set to 0, the anti-legionella function is inactive.
• Factory settings of the anti-legionella function activation: Every 14 days of the heat pump operation, if the water temperature in the previous 2-week period did not exceed 65 °C continuously for at least an hour.
• The anti-legionella function works only when the heat pump is switched on. When activated, symbol no. **17** is displayed.
• The anti-legionella function can be activated manually by pressing field no. **15**.
• The anti-legionella function can be disabled by switching off the heat pump when pressing field no. **9**.

Warning: If heating when the anti-legionella function is activated, the boiler water temperature is 65 °C regardless of the temperature set on the appliance.

Backup mode
• Activate backup mode by pressing field no. **2**.
• Backup mode uses heaters and is activated when an error occurs on the aggregate. The water is heated with heaters.
• By pressing field no. **2** backup mode is deactivated.
• Symbol **3** is displayed.
• If the backup mode is activated, please contact the maintenance services.

Operation signalization
Antilegionella programme:
• activated – control field **17** is displayed
• deactivated – control field **17** is not displayed

Electrical heater:
• activated – control field **14** is displayed
• deactivated – control field **14** is not displayed

Heat pump:
• activated – control field **16** is displayed
• deactivated – control field **16** is not displayed

On/off:
• activated – control field **9** and other fields are displayed
• deactivated – control field **9** is displayed

Defrosting:
• activated – control field **19** is displayed
• deactivated – control field **19** is not displayed

Fan on/off:
• activated – control field **20** is displayed
• deactivated – control field **20** is not displayed

Start ventilation – forced start of outdoor unit fan (press field no. 2 for a short period of time):
• activated – control field **2** is displayed

Backup mode on/off (by pressing field no. **2**):
• activated – control field **3** is displayed
• deactivated – control field **3** is not displayed

PV (PHOTOVOLTAICS)

• In case of voltage free contact between clamps 1 and 2 PV is activated (Figure 24).
• In case of voltage free contact between clamps 1 and 2 field 1 is displayed.
• The voltage free contact requires 800 W of electrical power.
• PV is deactivated in default settings.
• PV is activated in the installation menu with the activation of parameter 34.
• Set PV functions prior to time settings.
• PV mode does not affect the backup mode.
• The antilegionelle cycle is performed regardless the state of the PV mode.

PV operation (activated):
• PV is activated and the operation of the heat pump is allowed. The heat pump heats the water to the maximum temperature (see technical characteristics table). The heater is activated.
• No contact between PV clamps and the heat pump operation is allowed. The heat pump heats the water temperature up to 40°C.

Opening the EPP maintenance cover

Models TC30XXXX
1. To remove a small part of the maintenance cover, pull on the bottom side.
2. To remove the larger part of the maintenance cover, pull on the bottom side.
Take reverse steps for closing the cover.

Models TC20XXXX
Take step 2 of the TC30XXXX models.

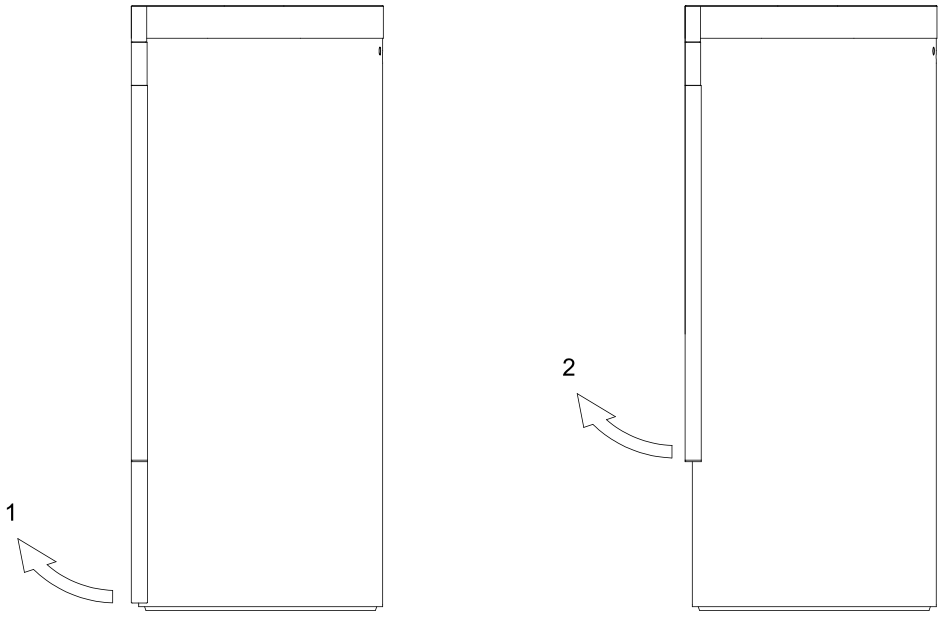


Fig. 22: Opening the EPP maintenance cover

PV detection

The connection of the PV module to the heat pump must be performed by a qualified expert. On the back side of the heat pump, under the connection cord, there is a PV connection port. The PV port is shown in **figure 23**. Use a connection cord (minimum inner cross-section 0,5 mm^2, H05VV-F 2G 0,5 mm^2 and maximum external cross-section of 10 mm). The removal of the cover is described in the chapter above.

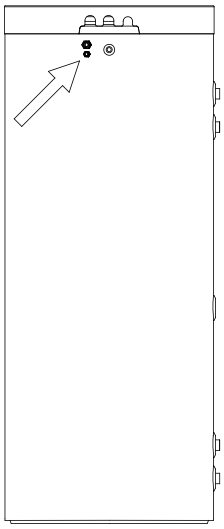


Fig. 23: PV connection location

Connect the cord to the clamp, located under the control unit. The connection location is marked with PV.
Use ports 1 and 2.

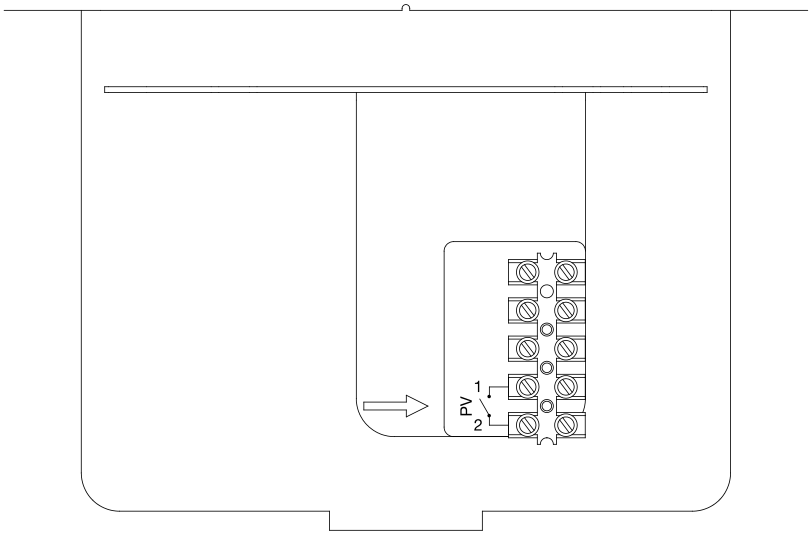


Fig. 24: PV connection port

SERVICE AND MAINTENANCE

After the connection to the water supply mains and other heating sources the hot water tank with the heat pump is ready for use. If there is any possibility the water in the tank could freeze, you must drain the water from the tank. To do so, open the hot water lever at one of the mixing batteries, connected to the hot water tank. The water is drained via a drain valve on the inlet water pipe.

The exterior of the heat pump should be cleaned with a mild detergent solution and a soft rag. Do not use alcohol-based or abrasive cleaning agents. If the heat pump was exposed to dust, evaporator lamellas might become blocked, which can have a detrimental effect on the functioning of the heat pump.

By providing regular service check-ups, you can ensure flawless operation and long life of the heat pump. The corrosion warranty for the tank only applies if you carry out regular inspections of the protective anode. The period between inspections must not exceed 36 months. The inspection must be performed by an authorised expert. The inspection must be marked on the warranty document of the product. The inspection will check the anti-corrosion protection anode and if necessary clean the limescale, which builds up in the tank depending on the quality, quantity and temperature of water. The maintenance expert will recommend the date for the next inspection.

Despite careful production and control, the heating pump can produce errors that must be solved by an authorised service provider.

Before calling your maintenance provider, check the following:
• Is everything OK with the power supply network?
• Is the air outlet obstructed (evaporator can freeze)?
• Is ambient temperature too low (evaporator can freeze)?
• Can you hear the operation of the compressor and fan?

⚠ **Do not try to eliminate malfunctions by yourself, call your nearest authorized service provider!**

OPERATION ERRORS

Despite careful production and control, the heating pump can produce errors that must be solved by an authorised service provider.

Indicator of errors

• In case of an error on the appliance, the beeper starts beeping and field no. **4** starts flashing. When you press field no. **4** the error code is displayed in field no. **12**.

Error	Description of error	Solution
E004	• Freezing. The error appears if the temperature in the heat pump is below 4 °C.	• Call the service.
E005	• Overheating (temperature > 85 °C, electronic regulator failure).	• Unplug the heat pump from the power supply. Call the service.
E006	• Mg anode error.	• Call the service (heat pump functions normally).
E007	• Volume and/or temperature sensors error.	• Call the service.
E042	• Anti-legionella function error.	• Press field no. **4** to restart.
E247	• Defrosting error.	• Automatically turns on heating with the electric heater. When the error is deleted, the aggregate resumes its normal operation.
E361	• External air sensor error.	• Call the service (automatically switches to the electric heater).
E363	• Defrosting sensor error.	• Call the service (automatically switches to the electric heater).

Our products incorporate components that are both environmentally safe and harmless to health, so they can be disassembled as easily as possible and recycled once they reach their final life stage.
Recycling of materials reduces the quantity of waste and the need for production of raw materials (e.g. metals) which requires a substantial amount of energy and causes release of harmful substances. Recycling procedures reduce the consumption of natural resources, as the waste parts made of plastic and metal can be returned to various production processes.
For more information on waste disposal, please visit your waste collection centre or the store where the product was purchased.

WE RESERVE THE RIGHT TO ANY MODIFICATIONS NOT AFFECTING THE FUNCTIONALITY OF THE APPLIANCE.
The instructions for use are also available on our website http://www.gorenje.com.

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