

gorenje

STENSKA KLIMATSKA NAPRAVA – NAVODILA ZA NAMESTITEV

SLO

ROOM AIR CONDITIONER – INSTALLATION MANUAL

GB

SLOVENŠČINA
KAS xx DCINV C/U

Pred uporabo klimatske naprave natančno preberite ta navodila ter jih shranite za kasnejšo uporabo.

STENSKA KLIMATSKA NAPRAVA

NAVODILA ZA NAMESTITEV

- Pred montažo klimatske naprave preberite celotna navodila.
- V primeru, da je priključna vrvica poškodovana, jo lahko zamenja le pooblaščen oseba.
- Vsa montažna dela mora opraviti pooblaščen osebje v skladu z nacionalnimi standardi za električne napeljave.
- Za popravilo, vzdrževanje ali montažo klimatske naprave se obrnite na pooblaščenega serviserja.

VSEBINA

VARNOSTNA OPOZORILA

Pozor	3
Opozorilo	3

NAVODILA ZA NAMESTITEV

Izbira ustreznega prostora	4
Pribor	6
Namestitev notranje enote	7
Namestitev zunanje enote	11

ELEKTRIČNA PRIKLJUČITEV

Električna priključitev	12
-------------------------	----

POVEZAVA CEVI HLADILNEGA SISTEMA

Povezava hladilnih cevi	15
-------------------------	----

VAKUUMIRANJE

Vakuumiranje	17
Varnostni preizkus in preizkus puščanja	18

TEST DELOVANJA

Preizkusno delovanje	19
----------------------	----

PREBERITE TA NAVODILA

V njem je mnogo koristnih napotkov za pravilno montažo in preizkus klimatske naprave.





OPOZORILO


- Popravila ali vzdrževanje te klimatske naprave lahko izvaja le pooblaščen servisno osebje.
- Klimatsko napravo lahko montira le pooblaščen serviser.
- Klimatske naprave naj brez nadzora ne uporabljajo otroci in nesamostojne osebe.
- Otroke imejte pod nadzorom in ne dovolite, da bi se igrali s klimatsko napravo.
- Vsa montažna dela mora izvesti pooblaščen osebje v skladu z nacionalnimi standardi za električne napeljave.





VARNOSTNA OPOZORILA

- Pred montažo preberite **varnostna opozorila**.
- Električna dela lahko opravi le pooblaščen električar. Preverite, če omrežna napetost in omrežni vtič ustrezata vašemu modelu klimatske naprave.
- Nepravilna montaža, ki je posledica neupoštevanja navodil, lahko povzroči škodo ali poškodbe; resnost označujejo naslednji simboli.

 POZOR	Ta znak pomeni smrtno nevarnost ali nevarnost resnih poškodb.
 OPOZORILO	Ta znak pomeni možnost poškodb ali škode na lastnini.

Postavke, ki jih je potrebno upoštevati, so označene s simboli:

	Simbol z belim ozadjem pomeni, da tega ne smete storiti.
---	--

 POZOR	
1.	Klimatsko napravo lahko montira le pooblaščen serviser. V primeru, da montažo izvede nepooblaščen oseba ali uporabnik sam, lahko pride do nepravilnega delovanja, puščanja vode, hladiva ali požara zaradi električnega udara.
2.	Pri montaži klimatske naprave se strogo držite navodil za montažo. V primeru napačne montaže lahko pride do puščanja vode, hladiva ali požara zaradi električnega udara.
3.	Pri montaži uporabite priložen pribor in specificirane dele. V nasprotnem primeru lahko pride do puščanja vode, hladiva ali požara zaradi električnega udara.
4.	Klimatsko napravo montirajte na močno, čvrsto mesto, ki lahko vzdrži njeno težo. Če nosilnost ni zadostna ali če montaža ni pravilno izvedena, lahko naprava pade in povzroči poškodbe.
5.	Za električna dela upoštevajte lokalne nacionalne standarde, predpise in ta navodila za montažo. Uporabite samostojni električni vod in vtičnico. Če zmogljivost električne napeljave ni zadostna ali če je kakšna napaka v izvedbi električnih del, lahko pride do električnega udara ali požara.
6.	Za povezavo zunanje/notranje enote uporabite ustrezen kabel, ki ga dobro zvežite in pritrdite, tako da na priključne sponke ne deluje kakšna zunanja sila. Če priključitev ali pritrditev ni dobro izvedena, lahko pride do segrevanja ali požara na priključku.
7.	Kabli morajo biti pravilno speljani, da lahko pokrov upravljalne plošče pravilno pritrdite. Če pokrov upravljalne plošče ni pravilno pritrjen, lahko to povzroči segrevanje priključne točke na priključni sponki, požar ali električni udar.
8.	Pri priključitvi cevni vodov pazite, da v hladilni vod ne pridejo kakšne druge snovi, kot hladilno sredstvo. V nasprotnem primeru lahko pride do slabše zmogljivosti, neobičajno visokega tlaka v hladilnem vodu, eksplozije ali poškodb.
 	
OPOZORILO	
1.	Ta oprema mora biti primerno ozemljena in varovana z ustreznimi varovalkami ter zaščitnim stikalom na diferenčni tok (s FID stikalom). Če ozemljitev ni dobro izvedena, lahko pride do električnega udara.
2.	Naprave ne instalirajte na takšna mesta, kjer lahko pride do puščanja vnetljivega plina. Če pušča plin in se nabira okrog klimatske naprave, lahko povzroči požar.
	
3.	Odtocene cevi montirajte, kot je navedeno v navodilih za montažo. Če odtok ni odlično izveden, lahko voda poškoduje pohištvo v sobi.

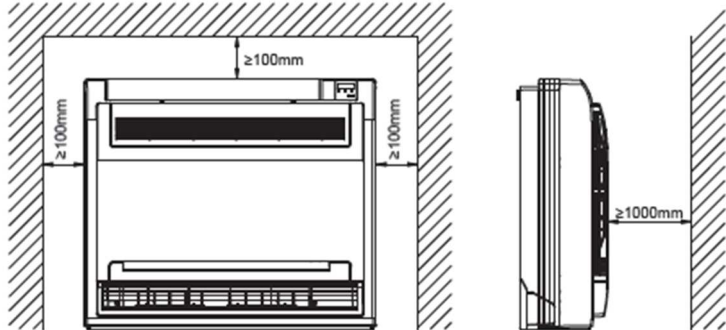
NAVODILA ZA NAMESTITEV

Izbira ustreznega prostora

Preberite celoten tekst, potem postopek izvajajte po točkah.

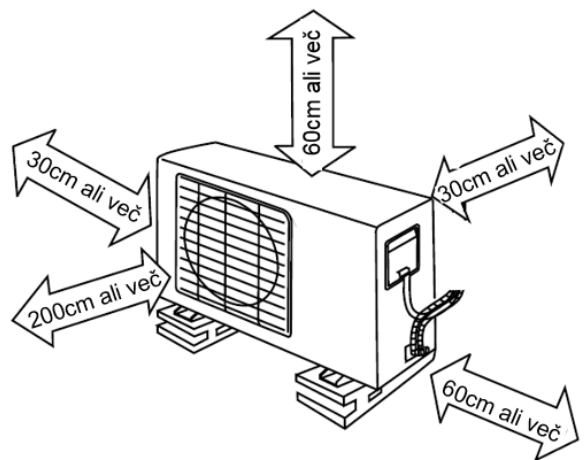
Notranja enota

- Notranje enote ne postavljajte v bližino vira toplote ali pare.
- Izberite prostor, kjer pred ali okrog naprave ni nobenih ovir.
- Izberite mesto v prostoru, kjer je omogočeno dobro kroženje zraka.
- Zagotovite, da je odvod kondenzata lahko ustrezno speljan na prosto.
- Naprave ne nameščajte poleg vrat.
- Zagotovite, da je na levi in desni strani naprave najmanj 12 cm prostora.
- Za določitev položaja gradbenih stebrov uporabite detektor, da preprečite nepotrebne poškodbe sten.
- Notranjo enoto instalirajte na višino 2,3 metra ali več od tal.
- Najmanjša razdalja od stropa mora biti 15 cm.
- Vsaka sprememba dolžine cevi hladilnega plina lahko povzroči potrebo po prilagoditvi napolnjenosti hladilnega sredstva. Do 5 m dolžine cevi dodatna polnitev ni potrebna, za vsak nadaljnji meter je potrebno dopolniti 20g hladilnega plina.



Zunanja enota

- Če je narejen nadstrešek, ki ščiti enoto pred neposrednimi sončnimi žarki ali dežjem, zagotovite neovirano odvajanje toplote oziroma učinkovito zračenje.
- Zagotovite prostor okrog hrbtni 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 vroč zrak, ki izhaja iz enote.
- Upoštevajte težo klimatske naprave in izberite prostor, kjer hrup in tresljaji niso moteči.
- Izberite takšno mesto, da topel zrak in hrup klimatske naprave ne moti sosedov.



Slika 2

NAVODILA ZA NAMESTITEV

Namestitev na streho

- Če zunanjo enoto 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.
- V primeru da zunanjo enoto montirate na strešno konstrukcijo ali zunanje stene, lahko to povzroča prekomerni hrup in tresljaje in se lahko klasificira kot neuporabna montaža.

Orodja, potrebna za montažo

- Kazalnik nivoja (libela)
- Vijačnik
- Električni vrtalnik z votlo vrtalno krono (Ø 65 mm)
- Orodje za robljenje
- Momentni ključi: 18 Nm, 42 Nm, 55 Nm, 66 Nm (različni glede na št. modela)
- Ključ (polsklopka)
- Šestrobi ključ ustreznih dimenzij
- Detektor puščanja plina, Vakuumska črpalka, Razdelilnik manometra
- Termometer, Multimeter, Rezilo za cevi, Merilni trak
- Navodila za uporabo

NAVODILA ZA NAMESTITEV

Pribor

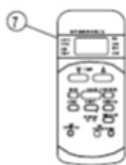
Št.	Ime	Količina		
1	Nosilec	2		
2	Zidni vložek	2 - 8 (odvisno od modela)		
3	Samorezni vijak A ST3.9x25	2 – 8 (odvisno od modela)		
4	Tesnilo (slika14)	1		
5	Odočni priključek (slika 14)	1		
6	Sestav priključne cevi	Tekočina	1/4" (Ø 6,35)	Deli, ki jih morate kupiti (potrebna je minimalna debelina stene cevi 0,7 mm)
Plin		3/8" (Ø 9,52) (≤ 3,5 kW)		
		1/2" (Ø 12,7) (> 3,5 kW)		
7	Daljinski upravljalnik	1		
8	Samorezni vijak B ST2.9X10	2		
9	Nosilec daljinskega upravljalnika	1		

Opomba: Vse dele, ki jih potrebujete pri montaži, razen zgoraj navedenih, morate kupiti.

OPOZORILO

- Na levi in desni strani notranje enote mora biti več kot 12 cm prostora. Notranja enota mora biti od stropa oddaljena najmanj 15 cm.
- Za določitev položaja gradbenih stebrov uporabite detektor, da preprečite nepotrebne poškodbe sten.
- Minimalna potrebna dolžina cevi je 3 m, da so tresljaji in hrup čim manjši.

Daljinski upravljalnik



Pritrdilni vijaki



Nosilec daljinskega upravljalnika

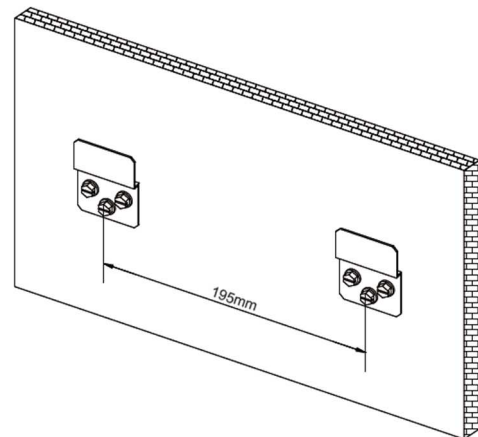
- Ta slika je simbolična.
- Bakrene cevi morajo biti posebej izolirane.

NAVODILA ZA NAMESTITEV

Namestitev notranje enote

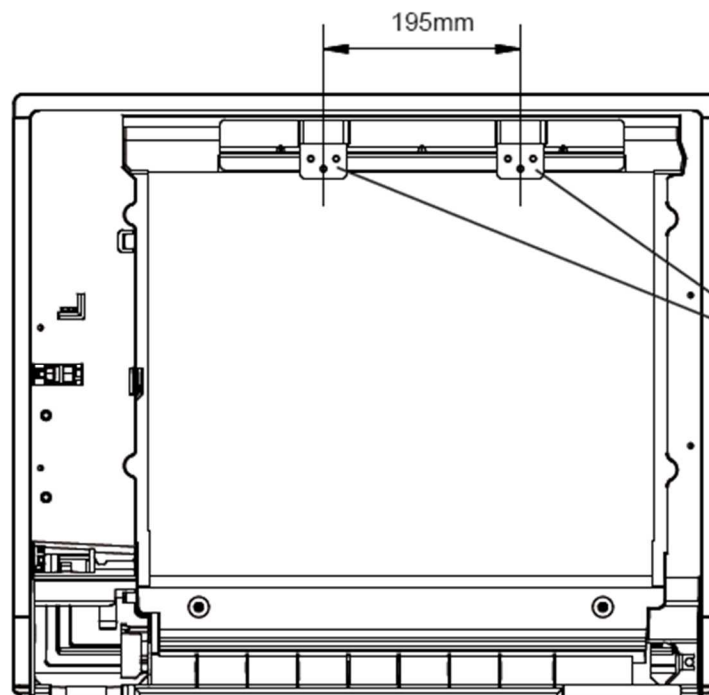
1. Namestite montažno ploščo

- a) Montažno ploščo položite vodoravno na nosilne dele stene, s prostorom okrog montažne plošče.
- b) Če je stena opečnata, betonska ali podobna, zvrtejte v steno pet (5) do osem (8) lukenj s premerom 6 mm. Vstavite zaskočni čep za odgovarjajoče vijake.
- c) Montažno ploščo namestite na steno s petimi do osmimi vijaki, tip "A".



Opomba:

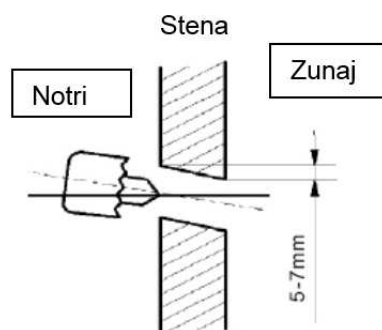
Montažno ploščo položite na steno in izvrtajte luknje v steno v skladu z zgradbo stene in odgovarjajočimi pritrdilnimi točkami na montažni plošči.
(Mere so v mm, razen če je drugače navedeno.)



NAVODILA ZA NAMESTITEV

2. Zvrtajte luknjo v steno

- Določite položaj luknje v skladu s priporočili sheme na sliki 5 oziroma po potrebi. Zvrtajte eno luknjo (\varnothing 65 mm), ki je rahlo nagnjena proti zunanji strani.
- Kadar vrtate kovinsko mrežo, kovinsko ploščo ali podobno, vedno uporabite uvodnico za zaščito cevi in povezovalnih kablov.

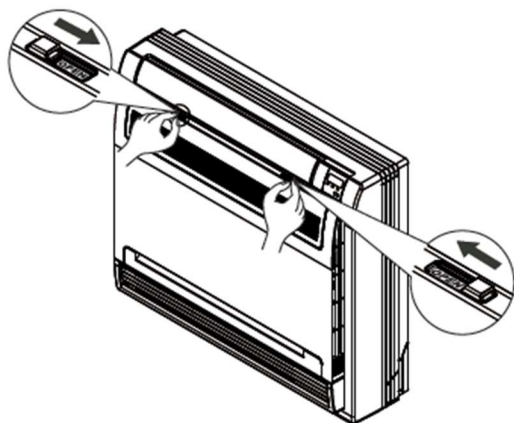


Slika 6

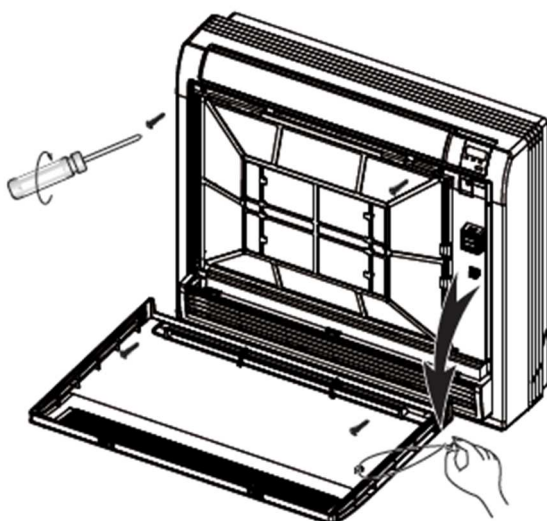
3. Namestitev priključne cevi in odvoda

Priprava notranje enote na priklop plinske povezave

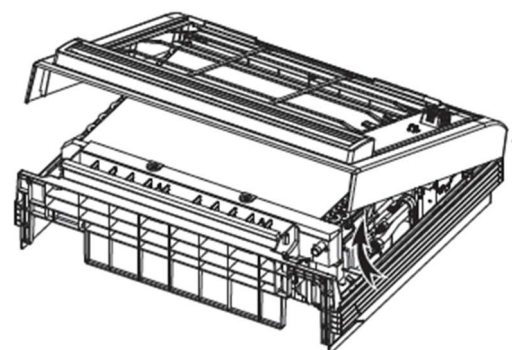
1. Odprite in sprednji pokrov – jezička stisnite skupaj in odmaknite pokrov



2. Odstranite sprednji pokrov
 - Odklopite vrstico
 - Preprečite, da bi pokrov padel na tla



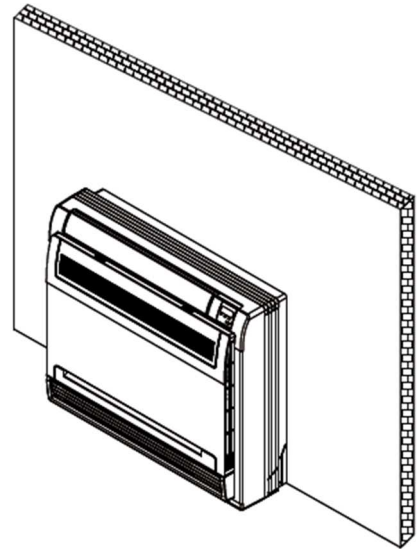
3. Odstranite panel
Odstranite 4 vijake in postavite pokrov v položaj na sliki in ga odmaknite od naprave



NAVODILA ZA NAMESTITEV

4. Priklučitev notranje enote

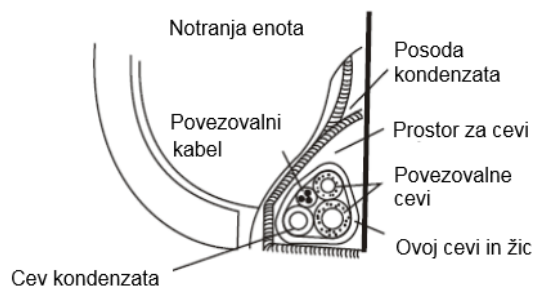
- a) Speljite cevi skozi luknjo v steni.
- b) Položite zgornji nastavek, ki je na zadnji strani notranje enote, na zgornji kavelj montažne plošče. Notranjo enoto pomaknite v levo - desno, da vidite, če je varno obešena.
- c) Pritisnite spodnji levi in desni del notranje enote ob steno. Potem premaknite notranjo enoto v levo - desno, navzgor in navzdol, da preverite, če je varno obešena.



5. Povijanje cevi

Cevi, priključno vrstico in odtočno cev zvijte in povežite z armiranim samolepilnim trakom, kot je prikazano na sliki 11.

Kondenzat z zadnje strani notranje enote se zbira v posodi, od koder je voden na prosto. V to posodo ne odlagajte ničesar.



Slika 11

NAVODILA ZA NAMESTITEV

OPOZORILA

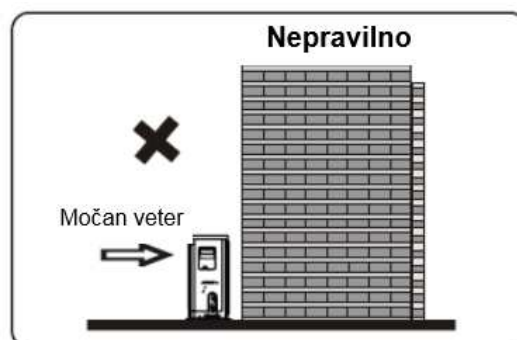
- Najprej priključite notranjo enoto, potem še zunanjo.
- Pazite, da cevi ne padejo z zadnje strani notranje enote.
- Pazite, da odtočne cevi ne visijo prosto.
- Toplotno izolirajte obe dodatni cevi.
- Pazite, da se odtočna cev nahaja na najnižjem delu zvitka. Če je na zgornjem delu, se lahko voda iz odtočne posode razlije po notranji enoti.
- Pazite, da ne prekrizate ali zvijete električnih žic skupaj z drugimi žicami.
- Odtočno cev mora biti speljana navzdol, da kondenzat neovirano odteka.
- Za povijanje cevi in priključnih kablov uporabite armirani samolepilni trak.

Namestitev zunanje enote

Opozorila

- Zunanjo enoto namestite na trdno površino, da preprečite premočan hrup in tresljaje.
- V primeru, da je mesto instalacije izpostavljeno močnemu vetru (na obali) preverite, če ventilator pravilno deluje. Enoto postavite ob steno po dolžini ali uporabite zaščitne plošče (slika 12).
- Na vetrovnih področjih enoto tako montirajte, da je zaščiten pred vetrom.
- Če je potrebno enoto obesiti, se uporabi konzolo skladno s tehničnimi zahtevami. Dolžina mora biti primerna za vgradne mere zunanje enote (razporeditev lukenj, oddaljenost zunanje enote od stene, nosilnost glede na maso zunanje enote).

Stena mora biti iz čvrste opeke, betona oziroma konstrukcije podobne moči, ali pa je potrebno poskrbeti za ojačenje in blaženje. Povezava med konzolo in steno, konzolo in klimatsko napravo mora biti čvrsta, stabilna in zanesljiva.

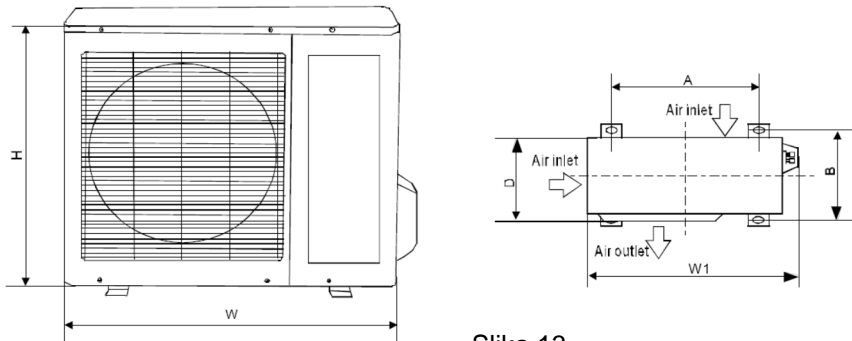


Slika 12

NAVODILA ZA NAMESTITEV

Pritrditev zunanje enote

- Zunanjo enoto dobro pritrdite v vodoravni položaj z primernim vijakom in matico $\varnothing 10$ ali $\varnothing 8$ na betonski ali podoben čvrst nosilec.
- V primeru pritrditve na konzolo uporabite primerne vijake, podložke, matice ter gumijaste blažilce.

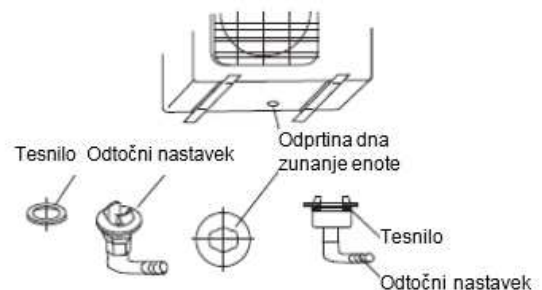


Slika 13

W	D	H	A	B
670 do 845	240 do 320	430 do 700	458 do 600	250 do 335

Namestitev odtočnega nastavka

V odvodno koleno dajte tesnilo, potem odtočni nastavek vstavite v luknjo spodnje posode zunanjeenote 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.



Slika 14

ELEKTRIČNA PRIKLJUČITEV

Električna priključitev



POZOR!

Električni varnostni predpisi za začetno montažo:

1. Če obstajajo resni varnostni problemi glede dovoda električne energije, mora monter zavrniti montažo klimatske naprave, dokler problem ni rešen in stranki to razložiti.
2. Napetost mora biti v območju 90 % ~ 110 % nazivne napetosti.
3. V električno napeljavo morate vgraditi zaščitno stikalo (zaščita pred plazilnim tokom) in glavno stikalo z 1,5-kratno zmogljivostjo maksimalnega toka naprave.
4. Klimatska naprava mora biti pravilno ozemljena.
5. Na plošči zunanje enote je električna shema, kjer je prikazana električna priključitev.
6. Vsa napeljava se mora skladati z lokalnimi in nacionalnimi električnimi predpisi. Priključitev lahko opravi le strokovno usposobljen električar.
7. Napajanje mora biti dovedeno preko izklopne naprave, katera zagotavlja odklop vseh polov ter diferenčnega stikala (RCD) z maksimalnim diferenčnim tokom, ki ne presega 30 mA.
8. Na razpolago mora biti samostojni vod in posebna vtičnica, ki se uporablja le za klimatsko napravo. V naslednji tabeli so navedeni priporočeni preseki žic in varovalke:

Model	Napajanje	Priporočena varovalka	Priporočene mere priključne vrvice
KAS35DCINVC/U	207-253 VAC, 50Hz	1p/16A/C	≥1,5 mm ²

Opomba:

- Dovodna napetost se mora skladati z napetostjo klimatske naprave.
- Varovalke, preseke vodnikov in stikala izberite glede na maksimalni tok naprave, ki je naveden na napisni tablici

ELEKTRIČNA PRIKLJUČITEV

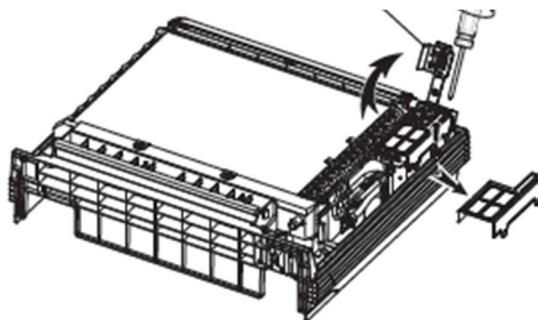
Priključitev kabla na notranjo enoto



Opozorilo:

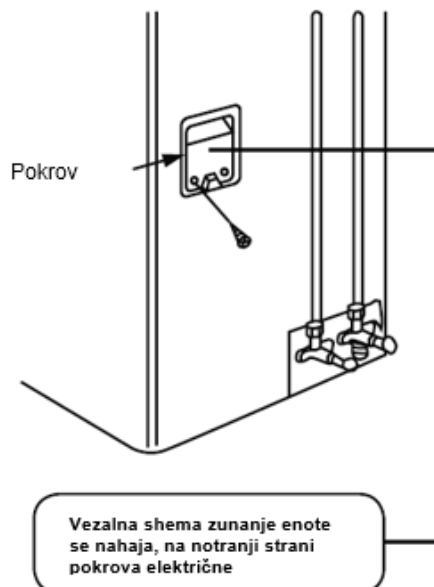
Pred vsakim delom na električni napeljavi izključite dovod električne energije v sistem.

1. Notranji in zunanji priključni kabel lahko priključite, brez da bi snemali sprednjo rešetko.
2. Priključni kabel med notranjo in zunanjo enoto mora biti odobren polipropilenski zaščiten gibki kabel, oznaka tipa H07RN-F ali močnejši.
3. Dvignite ploščo notranje enote, odvijte vijak in snemite pokrov priključnice.
4. Pazite, da so barve žic notranje enote in številke priključnih sponk enake, kot na notranji enoti.
5. Povijte kable, ki niso priključeni na priključne sponke z izolacijskim trakom, da se ne dotikajo električnih sestavnih delov. Kabel pritrdite na upravljalno ploščo z razbremenilcem kabla.



Priključitev kabla na zunanjo enoto

1. Odvijte vijak in z zunanje enote snemite pokrov električne upravljalne plošče.
2. Kable priključite na priključne sponke, kot je označeno s številkami na priključni letvi notranje in zunanje enote.
3. Z razbremenilcem kabla pritrdite kabel na upravljalno ploščo.
4. Da preprečite vstop vode, naredite zanko s priključnim kablom, kot je prikazano na priključni shemi notranje in zunanje enote.
5. Neuporabljene žice (prevodnike) izolirajte s PVC trakom. Namestite jih tako, da ne pridejo v stik z deli pod napetostjo ali kovinskimi deli.



Slika 17

OPOZORILO

Ko pripravite opisano, pripravite električno napeljavo:

1. Vedno morate zagotoviti poseben električni vod samo za klimatsko napravo. Pri napeljavi vam bo v pomoč električna shema, ki je na notranji strani pokrova upravljalne enote.
2. Vijaki, ki pritrujejo napeljavo v ohišje električnih priključkov, se lahko zrahljajo zaradi tresljajev, ki jim je naprava izpostavljena med transportom. Preverite vijake, če so čvrsto priviti.
3. Električni dovod mora ustrezati specifikaciji vira električnega napajanja.
4. Preverite, če je električna napetost zadostna.
5. Preverite, če zagonska napetost ostane na več kot 90 % nazivne napetosti, ki je navedena na napisni ploščici.
6. Preverite, če je debelina kabla takšna, kot je navedeno v specifikaciji vira električne energije.
7. V vlažnih ali mokrih prostorih vedno montirajte zaščitno stikalo (zaščita pred plazilnim tokom).
8. Padec napetosti lahko povzroči naslednje:
Vibracije magnetnega stikala, kar lahko poškoduje kontaktno točko, izklop varovalke, motnje med normalnim delovanjem preobremenitve.
9. Naprava za izključitev iz dovoda električne napetosti mora biti vgrajena v fiksno napeljavo in imeti kontaktni razmik najmanj 3 mm v vsakem aktivnem (faznem) vodniku.
10. V primeru, da je notranja enota uporabljena kot MONO enota, mora biti presek vodnikov priključenih na sponke L(1), 1, 2(N) zadovoljiv za prenos maksimalnega systemskega toka. Maksimalni systemski tok je enak vsoti nazivnega toka zunanje enote in nazivnega toka notranje enote.
11. **V primeru, da je notranja enota uporabljena kot MULTI enota, se na notranji enoti priključijo samo sponke 1, 2(N), S in ozemljitvena sponka. Sponka L(1) se ne priključi.**

POVEZAVA HLADILNIH CEVI

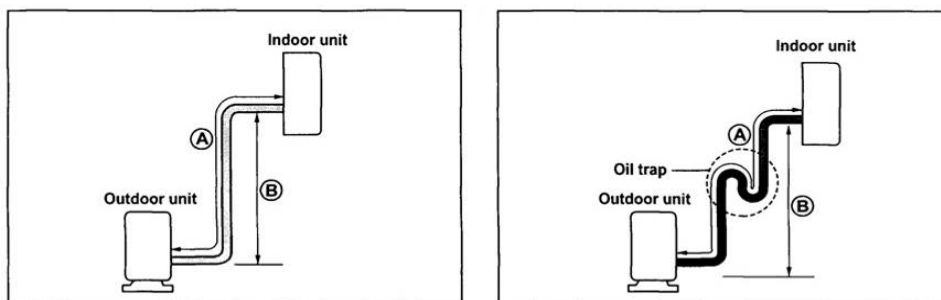
Priključitev cevi hladilnega sistema

Opozorilo!

Razdalja in višinska razlika povezovalnih cevi med zunanjo in notranjo enoto klimatske naprave sta omejeni!
Na višini 5 do 7 m je potrebno izvesti sifon za olje!

Model	Dimenzije cevi		Standardna dolžina [m]	Maks. višina B [m]	Maks. dolžina A [m]	Dodatna polnitev* [g/m]
	Plin	Tekočina				
KAS35DCINVC/U	3/8" (Φ9.52)	1/4" (Φ6.35)	5	8	20	20

*Dodatna polnitev je potrebna, če je dolžina povezovalnih cevi daljša od 5 m!



Slika 18

Priprava cevi

Robljenje

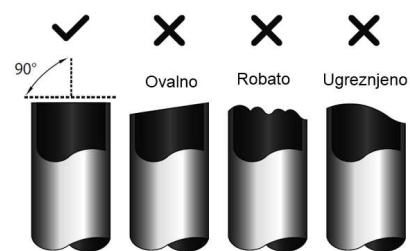
Glavni vzrok za puščanje hladilnega sredstva je slabo opravljeno robljenje. Za pravilno robljenje je postopek naslednji:

A: Odrežite cevi in kabel.

- Uporabite cevni pribor ali cevi kupite.
- Zmerite razdaljo med notranjo in zunanjo enoto.
- Cev pustite malo daljšo, kot je zmerjena razdalja.
- Kabel naj bo 1,5 m daljši od dolžine cevi.

B: Raziglenje

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



Slika 19



Slika 20

POVEZAVA HLADILNIH CEVI

C. Nameščanje matice

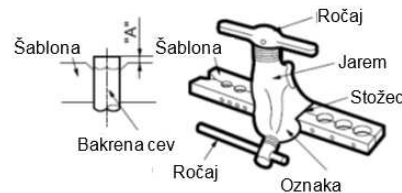
Odstranite matice z zarobkom, ki so montirane na notranjo in zunanjo enoto, dajte jih na cevi/gibke cevi, s katerih ste odstranili iglice (ne morete jih namestiti po robljenju).



Slika 21

D. Robljenje

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

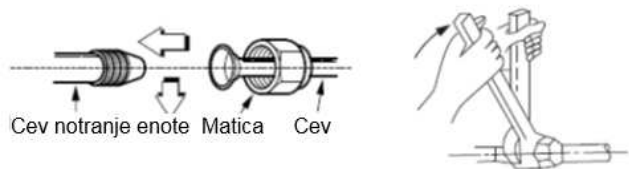


Slika 22

Zunanji premer	A [mm]	
	Max.	Min.
1/4" (Φ6.35 mm)	1,3	0,7
3/8" (Φ9.52 mm)	1,6	1,0
1/2" (Φ12.7 mm)	1,8	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 sliki.



Slika 23

⚠ Opozorilo

- Prekomerni pritezni moment lahko prelomi matico, odvisno od pogojev montaže!

Zun. mera	Pritezni moment [Nm]	Nazivni pritezni moment [Nm]
1/4" (Φ6.35 mm)	15	16
3/8" (Φ9.52 mm)	25	26
1/2" (Φ12.7 mm)	35	36

Priporočilo:

- Če se priključka plinskih cevi zunanje in notranje enote razlikujeta je potrebno uporabiti primeren prilagoditveni kos.
- Za preprečitev odvijanja vijačnih spojev zaradi vibracij in boljše tesnjenje spojev uporabite lepilo 'Leak Lock'.
- Po dokončanih povezavah med zunanjo in notranjo enoto priporočamo zatesnitev luknje Ø 65 mm s prožnimi tesnilnimi masami (ne sme se uporabiti cement beton, mavec,...

⚠ POZOR!

Bodite pozorni na čistočo!
Uporabljajte predpisano orodje!
Montažo mora izvesti pooblaščen monter!

ODSTRANJEVANJE ZRAKA - VAKUUMIRANJE

Odstranjevanje zraka - vakuumiranje



Opozorilo

Zunanje enota je prednapolnjena s hladilnim plinom, ki zadošča za delovanje klimatske naprave z dolžino povezovalnih cevi med zunanjo in notranjo enoto do 5 m.

Pred odstranjevanjem zraka je potrebno notranjo enoto in napeljavo med zunanjo in notranjo enoto pregledati, odstraniti iz sistema vse tujke, vlago in preveriti morebitno puščanje.

V primeru neizvajanja zgoraj navedenega lahko pride do neželenih učinkov, kot so:

- Dviganje tlaka sistema.
- Povečanje delovnega toka.
- Znižanje učinkovitosti hlajenja ali ogrevanja.
- Vlaga lahko zamrzne v hladilni napeljavi in blokira kapilare.
- Voda lahko povzroči korozijo na delih hladilnega sistema.

Odstranjevanje zraka z vakuumsko črpalko

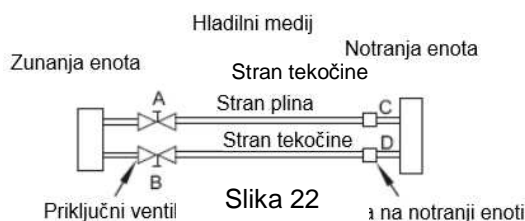
- Priprava: Preverite, če so vse cevi (tako na tekočinski, kot plinski strani) med notranjo in zunanjo enoto pravilno priključene in če je izvedena vsa električna napeljava za preizkusno delovanje. Odstranite pokrove delovnih ventilov tako na tekočinski kot plinski strani zunanje enote. Delovni ventili tako na tekočinski kot plinski strani na zunanji enoti ostanejo zaprti na tej stopnji.
- Če prestavite enoto na drugo mesto, praznjenje opravite z vakuumsko črpalko.
- Preverite, da je hladilno sredstvo, dodano v klimatsko napravo, v vsakem primeru v tekočem stanju.



Opozorilo pri delu z zapornim ventilom!

- Steblo ventila odpirajte, dokler ne dosežete omejilca. Ne poskušajte ga še bolj odpreti.
- Pokrov stebila ventila dobro pritrdite s ključem ali podobnim orodjem.
- Pritezni moment pokrova stebila ventila (glej tabelo priteznih momentov).

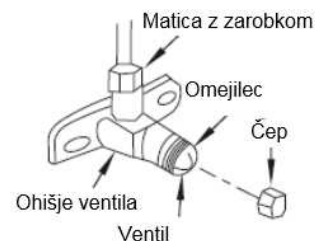
Uporaba vakuumске črpalke



Slika 22

na notranji enoti

Slika 24

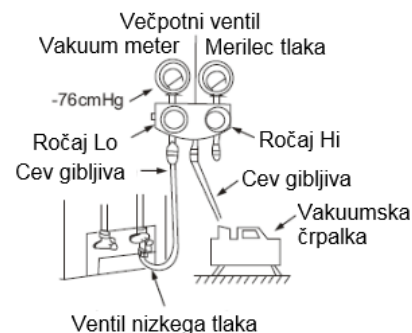


(Pri metodi, kjer se uporablja večpotni ventil, glejte navodila tega ventila)

1. Do konca privijte matice z zavihkom A, B, D in D, priključite polnilno cev večpotnega ventila z merilcem tlaka na polnilno odprtino na nizko-tlačnem ventilu na plinski strani.
2. Nataknite priključek polnilne cevi, katera vodi iz merilca tlaka na vakuumsko črpalko.

ODSTRANJEVANJE ZRAKA - VAKUUMIRANJE / TEST DELOVANJA

3. Popolnoma odprite ročico Lo na večpotnem ventilu.
4. Vključite vakuumsko črpalko. Ko se začne praznjenje, nekoliko zrahljajte matico z zavihkom na ventilu Lo na plinski strani in preverite, če vstopa zrak (hrup delovanja vakuumske črpalke se spremeni in merilnik zmesi kaže 0 namesto minus).
5. Ko je praznjenje končano, popolnoma zaprite ročico Lo na večpotnem ventilu in izklopite delovanje vakuumske črpalke.
Praznjenje naj traja 15 minut ali več. Preverite, če merilnik zmesi kaže -76 cmHg ($-1 \times 10^5 \text{ Pa}$).
6. Obrnite steblo zapornega ventila B za približno 45° v nasprotno smer urnih kazalcev za 6 ~ 7 sekund. Ko začne plin izhajati, zaprite ventil B v smeri urnih kazalcev. Preverite, če je prikaz tlaka na merilcu nekoliko višji od atmosferskega tlaka.
7. Odstranite polnilno cev iz nizko-tlačne polnilne cevi.
8. Popolnoma odprite stebli A in B zapornih ventilov.
9. Dobro privijte pokrov zapornega ventila.



Slika 24

Test delovanja

Varnostni preizkus in preizkus puščanja

Preizkus električne varnosti

Ko zaključite z montažo, opravite preizkus električne varnosti:

- Izoliran upor
Izolirana upornost mora biti večja od $2 \text{ M}\Omega$.
- Ozemljitev
Po ozemljitvi zmerite upornost ozemljitve z vizualnim zaznavanjem in preizkusno napravo odpornosti ozemljitve. Upornost ozemljitve mora biti manjša od 4Ω .
- 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.

TEST DELOVANJA

Pregled puščanja plina

- Način z milnico.
Milnico ali nevtrarno 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.
- Detektor puščanja
Za kontrolo puščanja uporabite detektor puščanja.



Slika 25

Opomba:

A: Zaporni ventil Lo

B: Zaporni ventil Hi

C in D sta konca priključka na notranji enoti.

Preizkusno delovanje

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

- Preglejte, če so vse cevne in električne napeljave pravilno priključene.
- Zagotovite, da je delovni ventil na plinski in tekočinski strani popolnoma odprt.
- Priključite električno napetost, pritisnite tipko ON/OFF (VKLOP/IZKLOP) na daljinskem upravljalniku, da vključite enoto.
- Uporabite tipko MODE (NAČIN), da izberete COOL (hlajenje), HEAT (ogrevanje), AUTO (avtomatsko) in FAN (ventilator), da kontrolirate, če vse funkcije dobro delujejo.
- Če je sobna temperatura prenizka (nižja od 17 °C), naprave ne morete z daljinskim upravljalnikom nastaviti, da bi delovala na načinu hlajenja; v tem primeru uporabite ročno delovanje. Ročno delovanje se uporablja, če daljinski upravljalnik ni brezhiben ali če je potrebno vzdrževanje.
- Pritisnite tipko Manual (ročno), da izberete AUTO (avtomatsko) ali COOL (hlajenje). Enota deluje s prisiljeno funkcijo AUTO (avtomatsko) ali COOL (hlajenje) (glej navodila za delovanje).
- Preizkusno delovanje mora trajati približno 30 minut.

KAS xx DCINV C/U

Before using your air conditioner, please read this manual carefully and keep it for future reference.

SPLIT-TYPE ROOM AIR CONDITIONER

INSTALLATION MANUAL

- Please read this installation manual before installing the product.
- If the power cord is damaged, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with the national wiring Standards by authorized personnel only.
- Contact an authorized service technician for repair, maintenance or installation of this unit.

CONTENTS

SAFETY PRECAUTIONS

Warning	3
Caution	3

INSTALLATION INSTRUCTIONS

Selecting installation place.....	4
Accessories	6
Indoor unit installation	7
Outdoor unit installation	11

ELECTRICAL CONNECTION

Electrical connection	12
-----------------------------	----

REFRIGERANT PIPE CONNECTION

Refrigerant pipe connection	15
-----------------------------------	----

AIR PURGING

Air purging with vacuum pump.....	17
Safety and leakage check	18

TEST RUNNING

Test running.....	19
-------------------	----

Read This Manual

Inside you will find many helpful hints on how to install and test the air conditioner properly.





CAUTION


- Contact an authorized service technician for repair or maintenance of this unit.
- Contact an authorized installer for installation of this unit.
- The air conditioner is not intended for use by young children or infirmed persons without supervision.
- Young children should be supervised to ensure that they do not play with the air conditioner.
- Installation work must be performed in accordance with the national Standards by authorized personnel.





SAFETY PRECAUTIONS

- Read the follow SAFETY PRECAUTIONS carefully before installation.
- Electrical work must be installed by a licensed electrician. Be sure to use the correct rating and main circuit for the model to be installed.
- Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

	WARNING	This symbol indicates the possibility of death or serious injury.
	CAUTION	This symbol indicates the possibility of injury or damage to property.

The items to be followed are classified by the symbols:

	Symbol will background white PROHIBITS stated operation.
---	--

	WARNING
1.	AC can be installed only by a authorized installer. If installation done by unauthorized person or user is defective, it can cause abnormal operation water leakage, electrical shock, fire.
2.	Install according to this installation instructions strictly. If installation is defective, it can cause water leakage, electrical shock and fire.
3.	Use the attached accessories parts and specified parts for installation. Otherwise, it can cause the set to fall, water leakage, electrical shock, fire.
4.	Install at a strong and firm location which is able to withstand the set s weight. If the strength is not enough or installation is not properly done, the set can drop and cause injury.
5.	For electrical work, follow the local national wiring standard, regulation and these installation instructions. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it can cause electrical shock, fire.
6.	Use the specified cable and connect tightly and clamp the cable so that no external force will be acted on the terminal. If connection or fixing is not perfect, it can cause heat-up or fire at the connection.
7.	Wiring routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it can cause heat-up at connection point of terminal, fire or electrical shock.
8.	When carrying out piping connection, take care not to let air substances other than the specified refrigerant go into refrigeration cycle. Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosion and injury. 
	CAUTION
1.	This equipment must be earthed and installed with earth leakage current breaker. It may cause electrical shock if grounding is not perfect.
2.	Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire. 
3.	Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture.

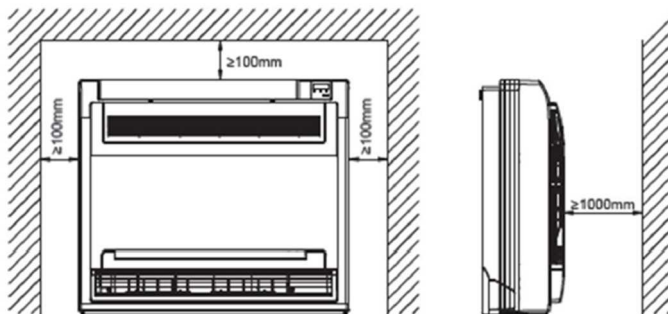
INSTALLATION INSTRUCTIONS

Selecting installation place

Read completely and then follow step by step.

Indoor unit

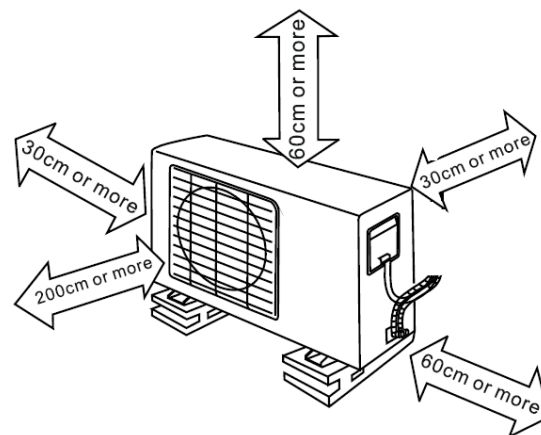
- Do not expose the indoor unit to heat or steam.
- Select a place where there are no obstacles in front or around the unit.
- Installation space must provide good air circulation.
- Make sure that condensation drainage can be conveniently routed away.
- Do not install near a doorway.
- Ensure that the space on the left and right of the unit is more than 12cm
- Use a pillar finder to locate studs to prevent unnecessary damage to the wall.
- The indoor unit should be installed on the wall at a height of 2.3 meters or more from the floor.
- The indoor unit should be installed allowing a minimum clearance of 15cm from the ceiling.
- Any variations in pipe length will/may require adjustment of refrigerant charge. For distances to 5 m additional charge is not necessary. For distances more than 5 m additional charge of 20g must be added for each passing meter.



Picture 1

Outdoor unit

- If an awning is built over the outdoor unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not restricted.
- Ensure that the clearance around the back of the unit is more than 30cm and left side is more than 30cm. The front of the unit should have more than 200cm of clearance and the connection side (right side) should have more than 60cm of clearance.
- Do not place animals and plants in the path of the air inlet or outlet.
- Take the air conditioner weight into account and select a place where noise and vibration will not be an issue.
- Select a place so that the warm air and noise from the air conditioner do not disturb neighbors.



Picture 2

INSTALLATION INSTRUCTIONS

Rooftop installation

- If the outdoor unit is installed on a roof structure, be sure to level the unit.
- Ensure the roof structure and anchoring method are adequate for the unit location.
- Consult local codes regarding rooftop mounting.
- If the outdoor unit is installed on roof structures or external walls, this may result in excessive noise and vibration, and may also be classed as a non-serviceable installation.

Tools needed for installation

- Level gauge
- Screwdriver
- Electric drill, Hole core drill (65mm)
- Flaring tool set
- Specified torque wrenches: 18 Nm, 42 Nm, 55 Nm, 66 Nm (different depending on model No.)
- Spanner (half union)
- Hexagonal wrench of suitable dimensions
- Gas-leak detector, Vacuum pump, Gauge manifold
- Thermometer, Multimeter, Pipe cutter, Measuring tape
- User's manual

INSTALLATION INSTRUCTIONS

Accessories

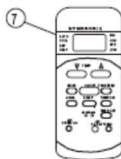
Nr.	Name	Quantity		
1	Installation Plate	1		
2	Clip Anchor	2 – 8 (depends on a model)		
3	Self-tapping Screw A ST3.9X25	2 – 8 (depends on a model)		
4	Seal (picture 14)	1		
5	Drain Joint (picture 14)	1		
6	Connecting pipe Assembly	Liquid side	1/4" (Ø 6,35)	Parts you must purchase (A minimum pipe wall-thickness 0.7mm is required.)
Gas side		3/8" (Ø 9,52) (≤ 3,5 kW)		
1/2" (Ø 12,7) (> 3,5 kW)				
7	Remote controller	1		
8	Self-tapping Screw B ST2.9X10	2		
9	Remote controller holder	1		

Note: Except the parts mentioned in accessories table, you must purchase all other parts needed during installation.

CAUTION

- Ensure that the space around the left and right of the indoor unit is more than 12cm. The indoor unit should be installed allowing a minimum clearance of 15cm from the ceiling.
- Use a stud finder to locate studs to prevent unnecessary damage to the wall.
- A minimum pipe run of 3 metres is required to minimise vibration & excessive noise.
- The indoor unit should be installed on the wall at a height of 2.3 metres or more from the floor.
- Two of the A, B and C directions should be free from obstructions.

Remote Controller



Self-tapping screw B
ST2.9x10-C-H



Remote controller
holder

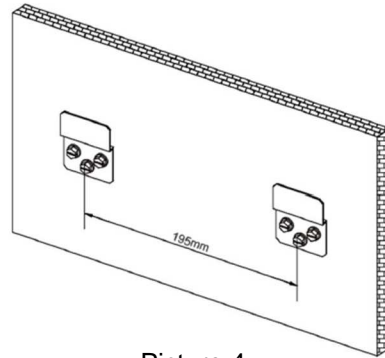
- This illustration is for explanation purposes only.
- Copper lines must be insulated independently.

INSTALLATION INSTRUCTIONS

Indoor unit installation

1. Fit the Installation Plate

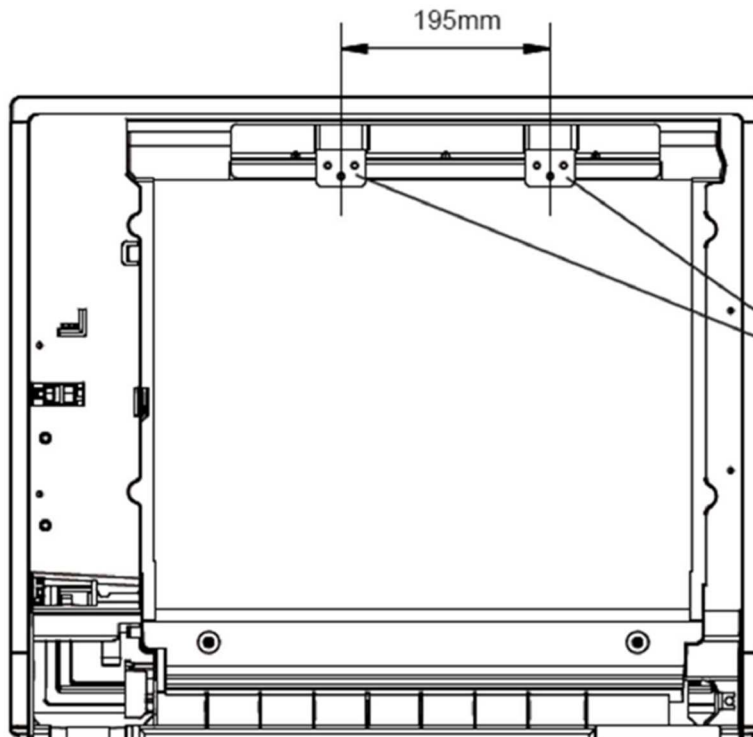
- a) Fit the installation plate horizontally on structural parts of the wall with spaces around the installation plate.
- b) If the wall is made of brick, concrete or the like, drill eight (8) 6mm diameter holes in the wall. Insert Clip anchor for appropriate mounting screws.
- c) Fit the installation plate on the wall with eight (8) type "A" screws.



Picture 4

Note:

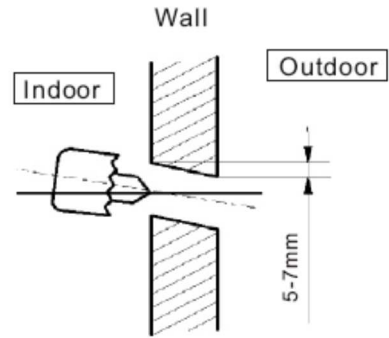
Fit the Installation Plate and drill holes in the wall according to the wall structure and corresponding mounting points on the installation plate. Dimensions are in "mm" unless otherwise stated.



INSTALLATION INSTRUCTIONS

2. Drill a hole in the wall

- Determine hole positions according to the diagram detailed in Fig.5. Drill one (1) hole (65mm) slanting slightly to outdoor side.
- Always use wall hole conduit when drilling metal grid, metal plate or similar materials.

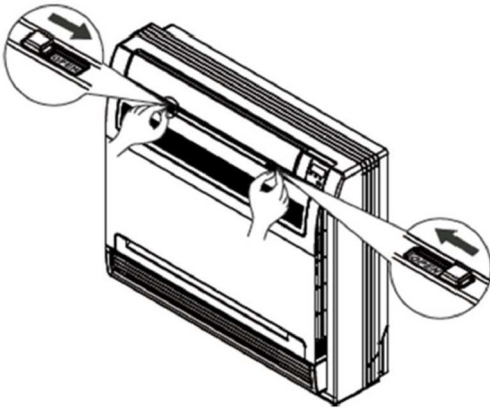


3. Connective pipe and drainage installation

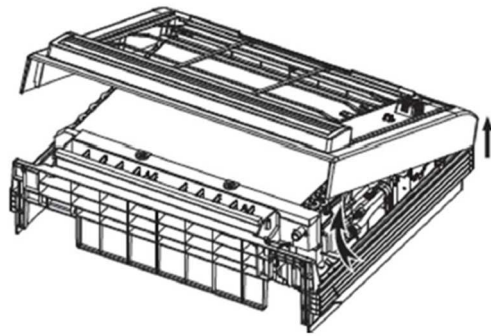
Connective pipe

- Open the front panel

Slide the two stoppers on the left and right sides inward until they click.

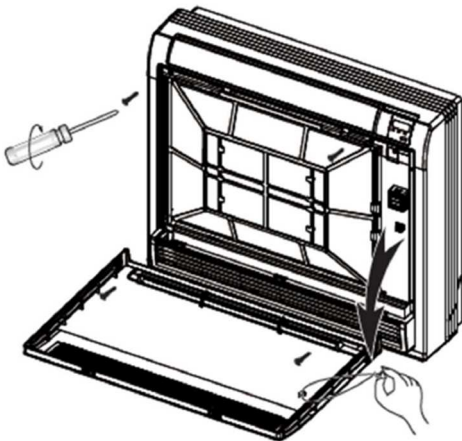


- Remove the face plate . Remove the four screws. Opening bottom of face plate for an angle of 30 degrees and remove the plate



- Remove the front panel

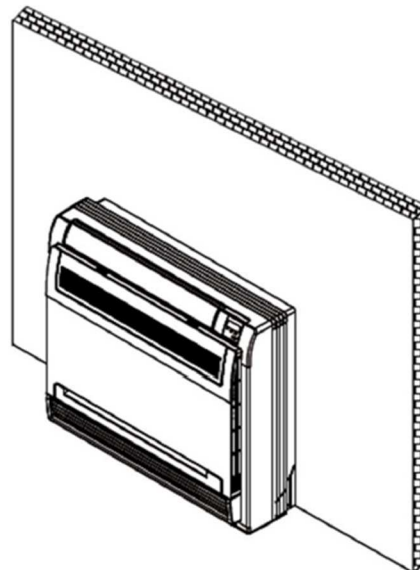
Remove the string. Allowing the front panel to fall forward will enable you to remove it.



INSTALLATION INSTRUCTIONS

4. Indoor unit installation

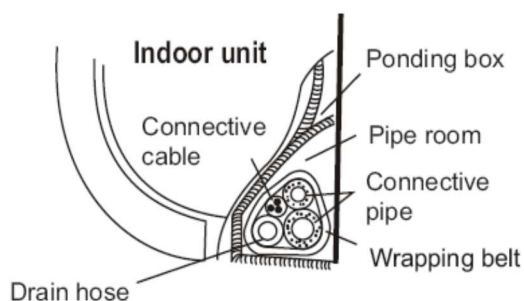
- a) Pass the piping through the hole in the wall.
- b) Put the upper claw at the back of the indoor unit on the upper hook of the installation plate, move the indoor unit from side to side to see that it is securely hooked.
- c) Piping can easily be made by lifting the indoor unit with a cushioning material between the indoor unit and the wall. Get it out after finish piping.
- d) Push the lower part of the indoor unit up on the wall, Then move the indoor unit from side to side, up and down to check if it is hooked securely.



5. Piping and wrapping

Bundle the tubing, connecting cable, and drain hose with tape securely, evenly as shown in picture 11.

Because the condensed water from rear of the indoor unit is gathered in ponding box and is piped out of room. Do not put anything else in the box.



INSTALLATION INSTRUCTIONS

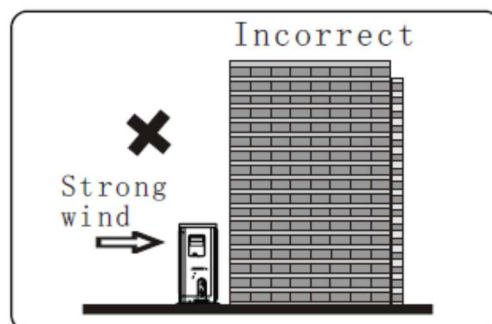
CAUTION

- Connect the indoor unit first, then the outdoor unit.
- Do not allow the piping to let out from the back of the indoor unit..
- Be careful not to let the drain hose slack.
- Insulate both of the auxiliary pipes.
- Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.
- Never intercross nor intertwist the power wire with any other wiring.
- Run the drain hose sloped downward to drain out the condensed water smoothly.
- For wrapping the pipes and cables use reinforced tape.

Outdoor unit installation

Precautions

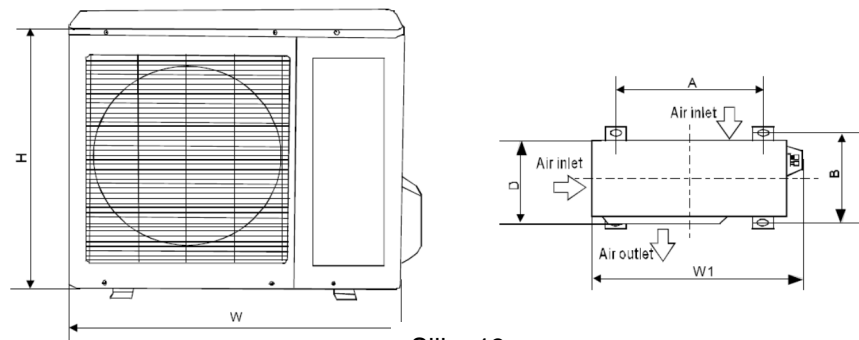
- Install the outdoor unit on a rigid base to prevent increasing noise level and vibration.
- In the case that the installation place is exposed to strong wind such as a seaside, make sure the fan operating properly. If there are problems put the unit lengthwise along the wall or use a barrier (picture 12).
- Especially in windy area, install the unit in a way to protect unit from the wind.
- If need suspending installation, the installation bracket should accord with technique requirement in the installation bracket diagram. The installation wall should be solid brick, concrete or the same intensity construction, or actions to reinforce, damping supporting should be taken. The connection between bracket and wall, bracket and the air conditioner should be firm, stable and reliable.



INSTALLATION INSTRUCTIONS

Fixing outdoor unit

- Anchor the outdoor unit with a bolt and nut 10 or 8 tightly and horizontally on a concrete or rigid mount.
- In case of fixing outdoor unit to a console, use suitable bolts, nuts and rubber shock absorbers.

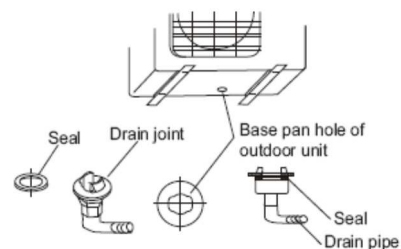


Slika 13

W	D	H	A	B
670 to 845	240 to 320	430 to 700	458 to 600	250 to 335

Drain joint installation

Fit the seal into the drain elbow, then insert the drain joint into the base pan hole of outdoor unit, rotate 90 to securely assemble them. Connecting the drain joint with an extension drain hose (need to be purchased separately), in case of the water draining off the outdoor unit during the heating mode.



ELECTRICAL CONNECTION

Electrical connection



CAUTION!

Electric safety regulations for the initial Installation:

1. If there is serious safety problem about the power supply, the technicians should refuse to install the air conditioner and explain to the client until the problem is solved.
2. Power voltage should be in the range of 90%~110%of rated voltage.
3. The overload protector and main power switch with a 1.5 times capacity of max. current of the unit should be installed in power circuit.
4. Ensure the air conditioner is grounded well.
5. Use Electrical Connection Diagram located on the panel of the outdoor unit to connect the wires.
6. All wiring must comply with local and national electrical codes and be installed by qualified and skilled electricians.
7. An all pole disconnection device which has at least 3 mm separation distance in all pole and residual current device (RCD) with the rating of not exceeding 30 mA shall be incorporated in the fix wiring according to the national rule.
8. An individual branch circuit and single receptacle used only for this air conditioner must be available. See following table for suggested wire sizes and fuse specifications:

Model	Power supply	Suggested fuse	Suggested wire cross section
KAS35DCINVC/U	207-253 VAC, 50Hz	1p/16A/C	≥1,5 mm ²

Note:

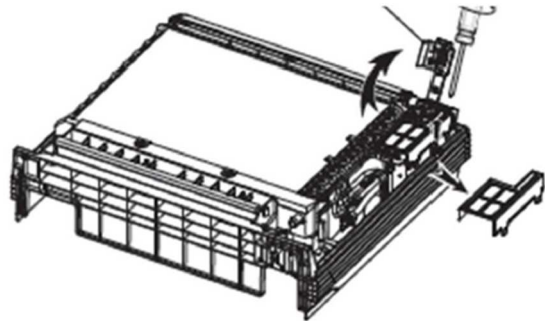
- The cable size and the current of the fuse or switch are determined by the maximum current indicated on the nameplate which is located on the side panel of the unit.

ELECTRICAL CONNECTION

Connecting the cable to the indoor unit

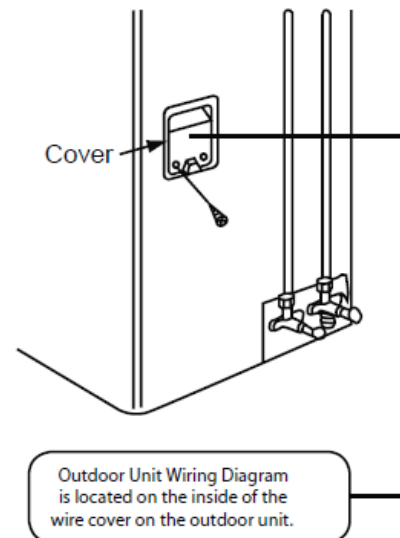
⚠ Warning:
Before performing any electrical work, turn off the main power to the system.

1. The inside and outside connecting cable can be connected without removing the front grille.
2. Connecting cable between indoor unit and outdoor unit shall be approved flexible cable, type designation H07RN-F or stronger.
3. Lift the indoor unit panel up, remove the electrical box cover by loosening the screw.
4. Ensure the color of connected wires of outdoor unit and the terminal numbers are the same at the indoor unit.
5. Wrap those cables not connected with terminals with insulation tapes, so that they will not touch any electrical components. Secure the cable onto the control board with the cord clamp.



Connect the cable to the outdoor unit

1. Remove the electrical control board cover from the outdoor unit.
2. Connect the connective cables to the terminals as identified with their respective matched numbers on the terminal block of indoor and outdoor units.
3. Secure the cable onto the control board with the cord clamp.
4. To prevent the ingress of water, from a loop of the connective cable as illustrated in the installation diagram of indoor and outdoor units.
5. Insulate unused cords (conductors) with PVC-tape. Process them so they do not touch any electrical or metal parts.



ELECTRICAL CONNECTION

CAUTION

After the confirmation of the above conditions, prepare the wiring as follows:

- 1) Never fail to have an individual power circuit specifically for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control cover.
- 2) The screws which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could cause burn-out of the wires.)
- 3) Specification of power source.
- 4) Confirm that electrical capacity is sufficient.
- 5) See to that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- 6) Confirm that the cable thickness is as specified in the power source specification.
- 7) Always install an earth leakage circuit breaker in a wet or moist area.
- 8) The following would be caused by voltage drop:
Vibration of a magnetic switch, which will damage the contact point, fuse breaking, disturbance of the normal function of the overload.
- 9) The means for disconnection from a power supply shall be incorporated in the fixed wiring and have an air gap contact separation of at least 3mm in each active(phase).
- 10) If used as MONO unit, for the standby control needs, the cross section of the cable connected to L(1), 1, 2(N) must be sufficient for the maximum system current. The maximum system current is equal to the sum of indoor unit and outdoor unit rated current.
- 11) **If indoor unit is used as MULTI unit, only terminals 1, 2(N), S and PE needs to be connected. Terminal L(1) is not connected.**

REFRIGERANT PIPE CONNECTION

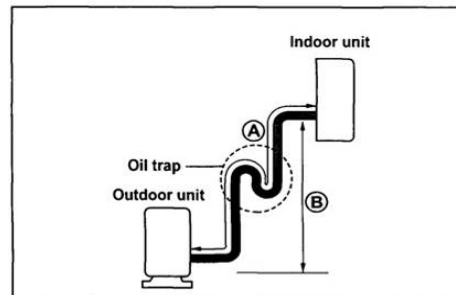
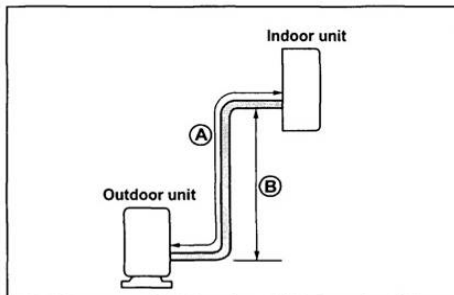
Refrigerant pipe connection

WARNING!

Maximum height and distances between indoor and outdoor unit are limited!
Oil trap should be installed per 5-7 meters!

Model	Pipe dimensions		Standard length [m]	Max. height B [m]	Max. length A [m]	Additional charge * [g/m]
	Gas	Liquid				
KAS26DCINVC/U	3/8" (Φ9.52)	1/4" (Φ6.35)	5	8	20	20

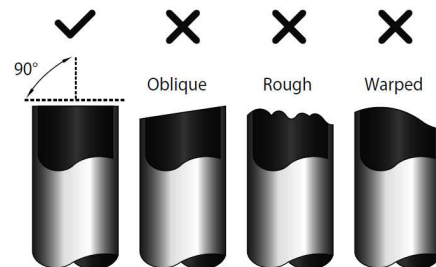
*Additional charge is necessary, if length of connecting pipes is longer than 5m!



Preparation of the pipes

Flaring work

Main cause for refrigerant leakages due to defect in the flaring work. Carry out correct flaring work using the following procedure:

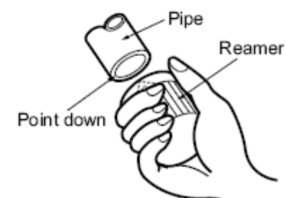


A: Cut the pipes and the cable.

- Use the piping kit accessory or pipes purchased locally.
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than the measured distance.
- Cut the cable 1.5m longer than the pipe length.

B: Burr removal

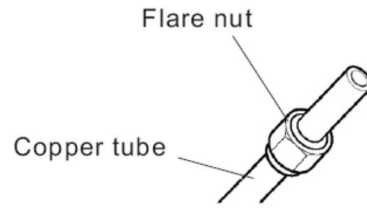
- Completely remove all burrs from the cut cross section of pipe/tube.
- Put the end of the copper tube/pipe in a downward direction as you remove burrs in order to avoid dropping burrs into the tubing.



REFRIGERANT PIPE CONNECTION

C. Putting nut on

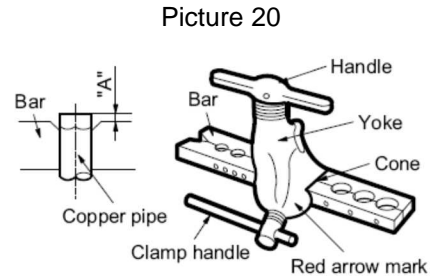
Remove flare nuts attached to indoor and outdoor unit, then put them on pipe/tube having completed burr removal (not possible to put them on after flaring work).



D. Flaring work

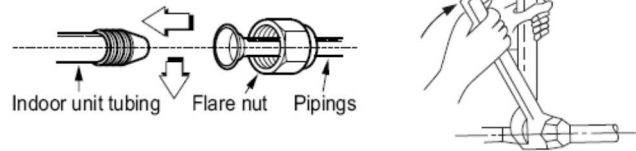
Firmly hold copper pipe in a die in the dimension shown in the table below.

Out. diameter	A [mm]	
	Max.	Min.
1/4" (Φ6.35 mm)	1,3	0,7
3/8" (Φ9.52 mm)	1,6	1,0
1/2" (Φ12.7 mm)	1,8	1,0



Tightening connection

- Align the center of the pipes..
- Sufficiently tighten the flare nut with fingers, and then tighten it with a spanner and torque wrench as shown.



Warning

- Excessive torque can break nut depending on installation conditions.

Out. Diam.	Tightening torque [Nm]	Additional tightening torque Nm
1/4" (Φ6.35 mm)	15	16
3/8" (Φ9.52 mm)	25	26
1/2" (Φ12.7 mm)	35	36

Recommendations:

- If refrigerant pipe connections on indoor and outdoor unit are different use adjustment piece.
- To prevent unwinding and leakage on the screw connections because of vibrations use pipe joint sealant 'Leak Lock'.
- After finishing connections between indoor and outdoor unit we recommend to fill the Ø 65 mm hole with flexible sealant masses (do not use concrete, plaster, ...)

ATTENTION!

Pay attention to the cleanliness!
Use prescribed tools!

Installation must be done by authorized installer!

AIR PURGING

Air purging

Warning

Outside unit is prefilled with refrigerant, which is sufficient for operation of the AC when connection pipes between indoor and outdoor unit are max 5m long.

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 tubing between the indoor and outdoor unit must be leak tested and evacuated to remove any moisture from the system.

Air purging with vacuum pump

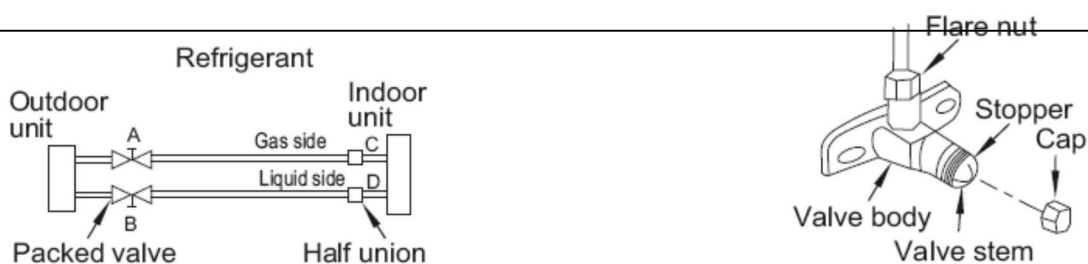
Preparation

Check that each tube (both liquid and gas side tubes) 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.

- When relocate the unit to another place, perform evacuation using vacuum pump.
- Make sure the refrigerant added into the air conditioner is liquid form in any case.

Caution in handling the packed 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 the like.
- Valve stem cap tightening torque.

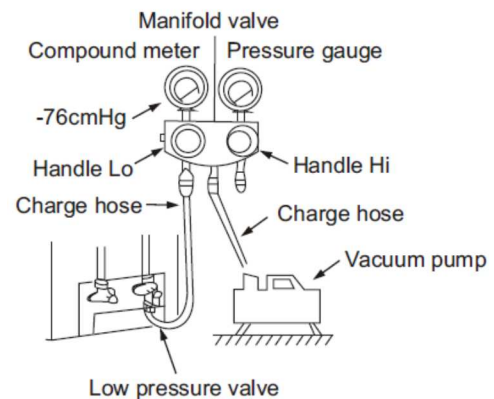


AIR PURGING / TEST RUNNING

Use of a vacuum pump

(For method of using a manifold valve, refer to its operation manual.)

1. Completely tighten the flare nuts, A, B, C, D, connect the manifold valve charge hose to a charge port of the low-pressure valve on the gas pipe side.
2. Connect the charge hose connection to the vacuum pump.
3. Fully open the handle Lo of the manifold valve.
4. Operate the vacuum pump to evacuate. After starting evacuation, slightly loose the flare nut of the Lo valve on the gas pipe side and check that the air is entering (Operation noise of the vacuum pump changes and a compound meter indicates 0 instead of minus).
5. After the evacuation is complete, fully close the handle Lo of the manifold valve and stop the operation of the vacuum pump. Make evacuation for 15 minutes or more and check that the compound meter indicates -76cmHg (-1x10 Pa).
6. Turn the stem of the packed valve B about 45°counterclockwise for 6~7 seconds after the gas coming out, then tighten the flare nut again. Make sure the pressure display in the pressure indicator is a little higher than the atmosphere pressure.
7. Remove the charge hose from the Low pressure charge hose.
8. Fully open the packed valve stems B and A.
9. Securely tighten the cap of the packed valve.



Test running

Safety and leakage test

Electric safety check

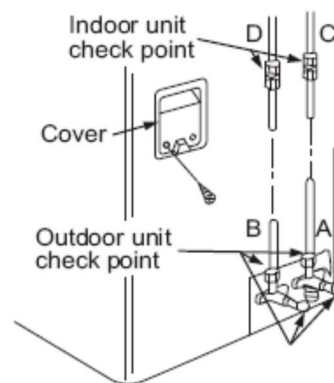
Perform the electric safe check after completing installation:

- Insulated resistance
The insulated resistance must be more than 2 MΩ.
- Grounding work
After finishing grounding work, measure the grounding resistance by visual detection and grounding resistance tester. Make sure the grounding resistance is less than 4 Ω.
- 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 find out the solution ways till the unit operate properly.

TEST RUNNING

Gas leak check

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



Caution:

- A: Lo packed valve
- B: Hi packed valve
- C and D are ends of indoor unit connection.

Test running

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

- Check that all tubing and wiring have been properly connected.
- Check that the gas and liquid side service valves are fully open.
- Connect the power, press the ON/OFF button on the remote controller to turn the unit on.
- Use the MODE button to select COOL, HEAT, AUTO and FAN to check if all the functions works well.
- When the ambient temperature is too low (lower than 17 C), the unit cannot be controlled by the remote controller to run at cooling mode, manual operation can be taken. Manual operation is used only when the remote controller is disable or maintenance necessary.
- Press the Manual control button to select the AUTO or COOL, the unit will operate under Forced AUTO or COOL mode (see User Manual for details).
- The test operation should last about 30 minutes.