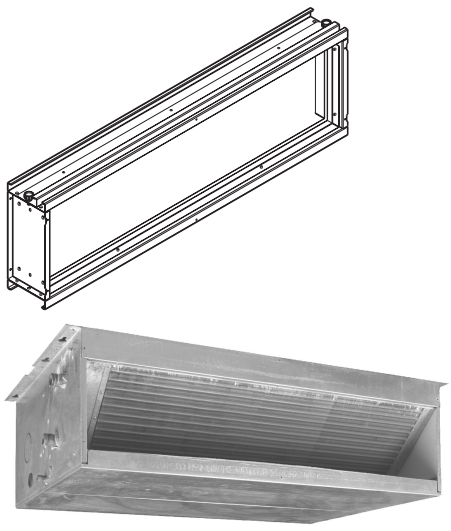
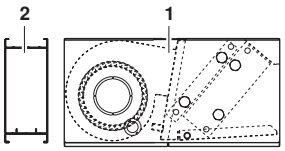
DAIKIN

INSTALLATION AND OPERATION MANUAL

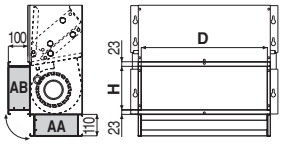
Ducted fan coil units

FWD



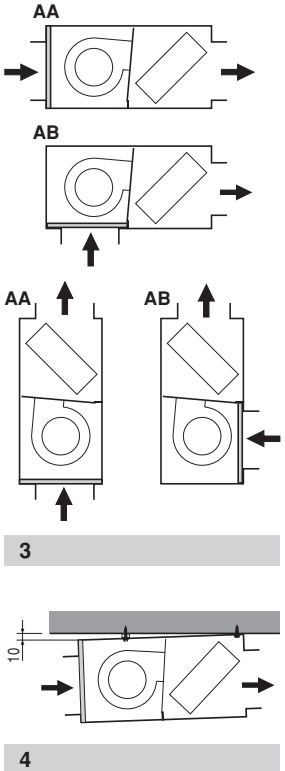


1



	D	H
FWD04	646	223
FWD06	856	223
FWD08+10	1066	223
FWD12	1066	296
FWD16+18	1276	296

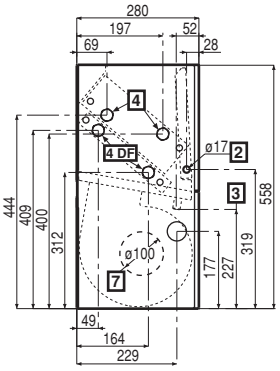
2

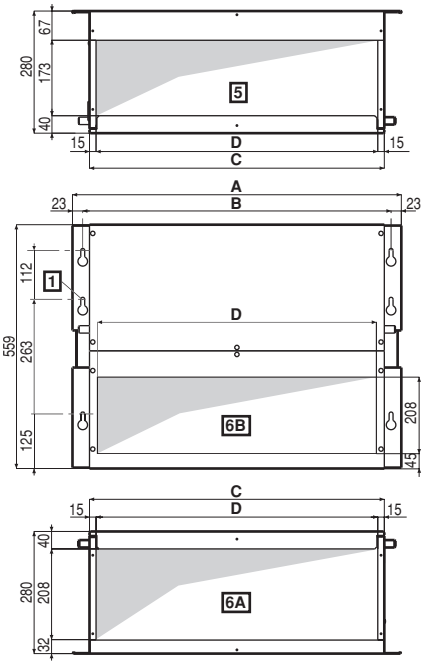


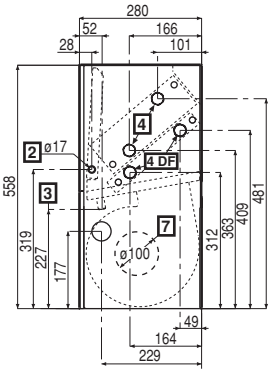
3

4

FWD04~10

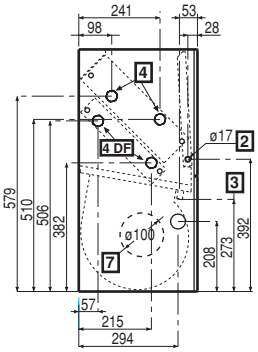


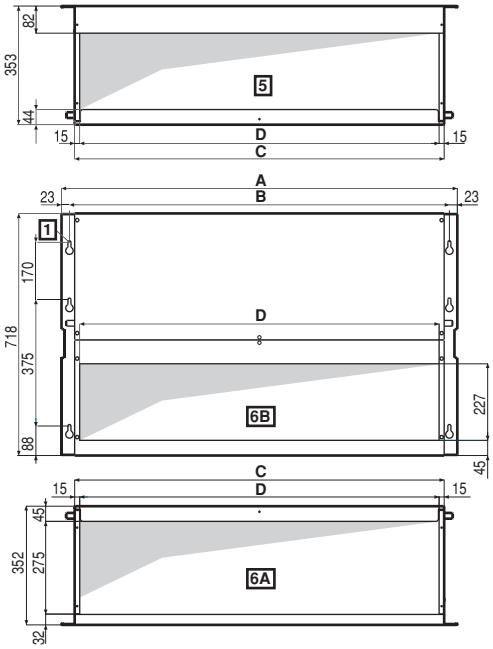


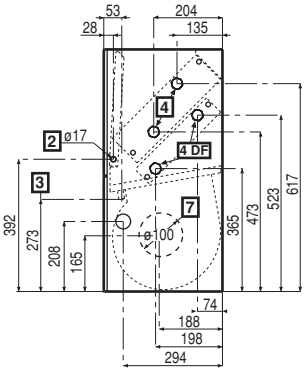


	A	B	C	D
FWD04	754	707	676	646
FWD06	964	917	886	856
FWD08+10	1174	1127	1096	1066

FWD12~18

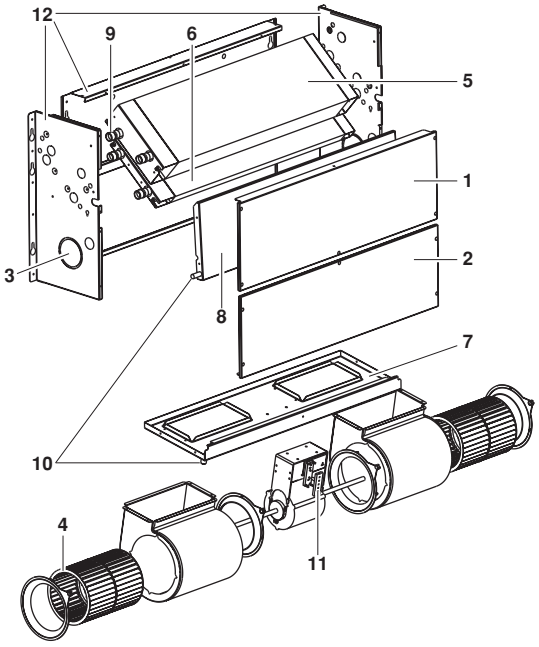






	A	B	C	D
FWD12	1174	1127	1096	1066
FWD16+18	1384	1337	1306	1276

5



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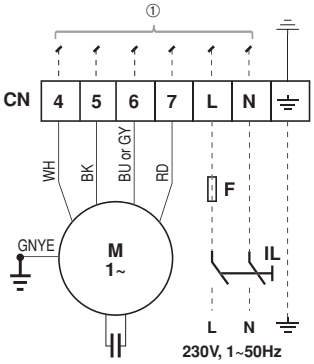

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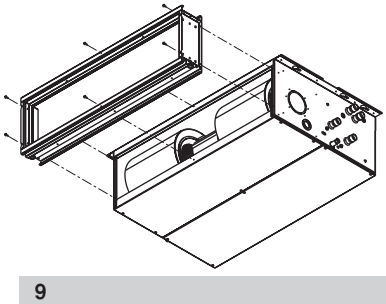

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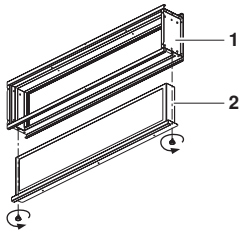

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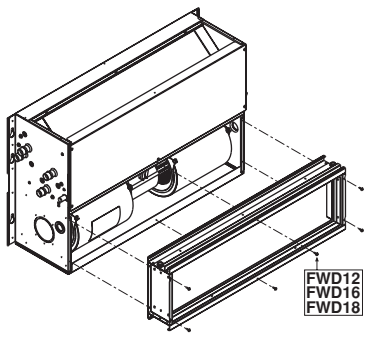

10

CE - DECLARATION-OF-CONFORMITY
CE - KONFORMITÄTSERKLÄRUNG
CE - DECLARATION-DE-CONFORMITE
CE - CONFORMITEITSVERKLARING

CE - DECLARACION-DE-CONFORMIDAD
CE - DICHIARAZIONE-DI-CONFORMITA
CE - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ

CE - DECLARAÇÃO-DE-CONFORMIDADE
CE - ЗАЯВЛЕНИЕ-О-СООТВЕТСТВИИ
CE - OPFYLDELSESERKLÆRING

CE - FÖRSÄKRAN-OM-ÖVERENSTÄMMELSE
CE - ERKLÆRING OM-SAMSVAR
CE - ILMOITUS-YHDENMUKAISUUDESTA
CE - PROHLÁŠENÍ-O-SHODĚ

CE - IZJAVA-O-USKLAĐENOSTI
CE - MEGFELELŐSÉGI-NYILATKOZAT
CE - DEKLARACJA-ZGODNOŚCI

CE - DECLARAŢIE-DE-CONFORMITATE
CE - IZJAVA O SKLADNOSTI
CE - VASTAVUSDEKLARATSIOON

CE - ДЕКЛАРАЦИЯ-ЗА-СЪОТВЕТСТВИЕ
CE - ATITIKTIES-DEKLARACIJA
CE - ATBILSTĪBAS-DEKLARĀCIJA
CE - VYHLÁSENIE-ZHODY

Daikin Europe N.V.

01 (GB) declares under its sole responsibility that the air conditioning models to which this declaration relates:
02 (D) erklärt auf seine alleinige Verantwortung daß die Modelle der Klimageräte für die diese Erklärung bestimmt ist:
03 (F) déclare sous sa seule responsabilité que les appareils d'air conditionné visés par la présente déclaration:
04 (NL) verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de airconditioning units waarop deze verklaring betrekking heeft:
05 (E) declara baja su única responsabilidad que los modelos de aire acondicionado a los cuales hace referencia la declaración:
06 (I) dichiara sotto sua responsabilità che i condizionatori modello a cui è riferita questa dichiarazione:
07 (GR) δηλώνει με αποκλειστική της ευθύνη ότι τα μοντέλα των κλιματιστικών συσκευών στα οποία αναφέρεται η παρούσα δήλωση:
08 (P) declara sob sua exclusiva responsabilidade que os modelos de ar condicionado a que esta declaração se refere:
09 (RUS) заявляет, исключительно под свою ответственность, что модели кондиционеров воздуха, к которым относится настоящее заявление:
10 (DK) erklærer under eneansvar, at klimaanlægmodellerne, som denne deklaration vedrører:
11 (S) deklarerar i egenskap av huvudansvarig, att luftkonditioneringsmodellerna som berörs av denna deklaration innebär att:
12 (N) erklærer et fullstendig ansvar for at de luftkondisjoneringsmodeller som berøres av denne deklarasjon innebærer at:
13 (FIN) ilmoittaa yksinomaan omalla vastuullaan, että tämän ilmoituksen tarkoittamat ilmastointilaitteiden mallit:
14 (CZ) prohlašuje ve své plné odpovědnosti, že modely klimatizace, k nimž se toto prohlášení vztahuje:
15 (HR) izjavljuje pod isključivo vlastitom odgovornošću da su modeli klima uređaja na koje se ova izjava odnosi:
16 (H) teljes felelősségе tudatában kijelenti, hogy a klímaberendezés modellek, melyekre e nyilatkozat vonatkozik:
17 (PL) deklaruje na własną i wyłączną odpowiedzialność, że modele klimatyzatorów, których dotyczy niniejsza deklaracja:
18 (RO) declară pe proprie răspundere că aparatele de aer condiţionat la care se referă această declaraţie:
19 (SLO) z vso odgovornostjo izjavlja, da so modeli klimatskih naprav, na katere se izjava nanaša:
20 (EST) kinnitab oma täielikul vastutusel, et käesoleva deklaratsiooni alla kuuluvad kliimaseadmete mudelid:
21 (BG) декларира на своя отговорност, че моделите климатична инсталация, за които се отнася тази декларация:
22 (LT) visiška savo atsakomybe skelbia, kad oro kondicionavimo prietaisų modeliai, kuriems yra taikoma ši deklaracija:
23 (LV) ar pilnu atbildību apliecina, ka tālāk uzskaitīto modeļu gaisa kondicionētāji, uz kuriem attiecas šī deklarācija:
24 (SK) vyhlasuje na vlastnú zodpovednosť, že tieto klimatizačné modely, na ktoré sa vzťahuje toto vyhlásenie:

FWD*AATN6V3, FWD*AAFN6V3,
* = 04, 06, 08, 10, 12, 16, 18

01 are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
02 der/den folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
03 sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:
04 conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:
05 están en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativo(s), siempre que sean utilizados de acuerdo con nuestras instrucciones:
06 sono conformi al(i) seguente(i) standard(s) o altro(i) documento(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:
07 είναι σύμφωνα με το(α) ακόλουθο(α) πρότυπο(α) ή άλλο έγγραφο(α) κανονισμών, υπό την προϋπόθεση ότι χρησιμοποιούνται σύμφωνα με τις οδηγίες μας:
08 estão em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s), desde que estes sejam utilizados de acordo com as nossas instruções:
09 соответствуют следующим стандартам или другим нормативным документам, при условии их использования согласно нашим инструкциям:
10 overholder følgende standard(er) eller andet/andre retningsgivende dokument(er), forudsat at disse anvendes i henhold til vore instrukser:
11 respektive utrustning är utförd i överensstämmelse med och följer följande standard(er) eller andra normgivande dokument, under förutsättning att användning sker i överensstämmelse med våra instruktioner:
12 respektive utstyr er i overensstemmelse med følgende standard(er) eller andre normgivende dokument(er), under forutssetning av at disse brukes i henhold til våre instrukser:
13 vastaavat seuraavien standardien ja muiden ohjeellisten dokumenttien vaatimuksia edellyttäen, että niitä käytetään ohjeidemme mukaisesti:
14 za předpokladu, že jsou využívány v souladu s našimi pokyny, odpovídají následujícím normám nebo normativním dokumentům:
15 u skladu sa slijedećim standardom(ima) ili drugim normativnim dokumentom(ima), uz uvjet da se oni koriste u skladu s našim uputama:
16 megfelelnek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azokat előírás szerint használják:
17 spełniają wymogi następujących norm i innych dokumentów normalizacyjnych, pod warunkiem że używane są zgodnie z naszymi instrukcjami:
18 sunt în conformitate cu următorul (următoarele) standard(e) sau alt(e) document(e) normativ(e), cu condiţia ca acestea să fie utilizate în conformitate cu instrucţiunile noastre
19 skladni z naslednjimi standardi in drugimi normativi, pod pogojem, da se uporabljajo v skladu z našimi navodili:
20 on vastavuses järgmis(t)e standardi(te)ga või teiste normatiivsete dokumentidega, kui neid kasutatakse vastavalt meie juhenditele:
21 съответстват на следните стандарти или други нормативни документи, при условие, че се използват съгласно нашите инструкции:
22 atitinka žemiau nurodytus standartus ir (arba) kitus norminius dokumentus su sąlyga, kad yra naudojami pagal mūsų nurodymus:
23 tad, ja lietoti atbilstoši ražotāja norādījumiem, atbilst sekojošiem standartiem un citiem normatīviem dokumentiem:
24 sú v zhode s nasledovnou(ými) normou(ami) alebo iným(i) normatívnym(i) dokumentom(ami), za predpokladu, že sa používajú v súlade s našim návodom:

EN60335-1, EN60335-2-30, EN60204-1, EN55014-1, EN55014-2, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-4, EN61000-4-5, EN61000-4-11,

01 following the provisions of:
02 gemäß den Vorschriften der:
03 conformément aux stipulations des:
04 overeenkomstig de bepalingen van:
05 siguiendo las disposiciones de:
06 secondo le prescrizioni per:
07 με τήρηση των διατάξεων των:
08 de acordo com o previsto em:
09 в соответствии с положениями:
10 under iagttagelse af bestemmelserne i:
11 enligt villkoren i:
12 gitt i henhold til bestemmelsene i:
13 noudattaen määräyksiä:
14 za dodržení ustanovení předpisu:
15 prema odredbama:
16 követi a(z):
17 zgodnie z postanowieniami Dyrektyw:
18 în urma prevederilor:
19 ob upoštevanju določb:
20 vastavalt nõuetele:
21 следвайки клаузите на:
22 laikantis nuostatų, pateikiamų:
23 ievērojot prasības, kas noteiktas:
24 održiavajúc ustanovenia:

73/23/EEC	92/31/EEC
89/336/EEC	93/44/EEC
89/392/EEC	93/68/EEC
91/368/EEC	98/37/EEC

01 Directives, as amended.
02 Direktiven, gemäß Änderung.
03 Directives, telles que modifiées.
04 Richtlijnen, zoals geamendeerd.
05 Directivas, según lo enmendado.
06 Direttive, come da modifica.
07 Οδηγιών, όπως έχουν τροποποιηθεί.
08 Directivas, conforme alteração em.
09 Директив со всеми поправками.
10 Direktiver, med senere ændringer.
11 Direktiv, med företagna ändringar.
12 Direktiver, med foretatte endringer.
13 Direktiivejä, sellaisina kuin ne ovat muutettuina.
14 v platném znění.
15 Smjernice, kako je izmijenjeno.
16 irányelv(ek) és módosításaik rendelkezéseit.
17 z późniejszymi poprawkami.
18 Directivelor, cu amendamentele respective.
19 Direktive z vsemi spremembami.
20 Direktiivid koos muudatustega.
21 Директиви, с техните изменения.
22 Direktyvose su papildymais.
23 Direktīvās un to papildinājumos.
24 Smernice, v platnom znení.

01	Note	judged positively by **NEMKO ALFLAB** according to the **Certificate SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
02	Hinweis	wie von **NEMKO ALFLAB** positiv ausgezeichnet gemäß **Zertifikat SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
03	Remarque	tel que jugé positivement par **NEMKO ALFLAB** conformément au **Certificat SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
04	Bemerk	zoals in orde bevonden door **NEMKO ALFLAB** overeenkomstig **Certificaat SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
05	Nota	tal como juzgado positivamente por **NEMKO ALFLAB** según el **Certificado SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
06	Nota	como giudicato positivamente da **NEMKO ALFLAB** secondo il **Certificato SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
07	Σημείωση	με τη θετική κρίση της **NEMKO ALFLAB** σύμφωνα με το **Πιστοποητικό SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
08	Nota	com o parecer positivo de **NEMKO ALFLAB** de acordo com o **Certificado SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
09	Примечание	в соответствии с положительным решением **NEMKO ALFLAB** согласно **SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
10	Bemærk	som vurderet positivt af **NEMKO ALFLAB** i henhold til **Certifikat SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
11	Information	som av **NEMKO ALFLAB** bedömts uppfylla **Certifikat SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
12	Merk	gjennom positiv bedømmelse av **NEMKO ALFLAB** ifølge **Sertifikat SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
13	Huom	jotka **NEMKO ALFLAB** on hyväksynyt **Sertifikaatin SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
14	Poznámka	jak bylo pozitivně zjištěno **NEMKO ALFLAB** v souladu s **osvědčením SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
15	Napomena	kako je pozitivno ocijenjeno od strane **NEMKO ALFLAB** prema **Certifikatu SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
16	Megjegyzés	a megfelelést a(z) **NEMKO ALFLAB** igazolta a(z) **SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02 tanúsítvány** szerint.
17	Uwaga	zgodnie z pozytywną opinią **NEMKO ALFLAB** i **Świadectwem SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
18	Notă	apreciate pozitiv de **NEMKO ALFLAB** în conformitate cu **Certificatul SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
19	Opomba	kij je odobril **NEMKO ALFLAB** v skladu s **certifikatom SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
20	Märkus	nagu on heaks kiidetud **NEMKO ALFLAB** järgi vastavalt **sertifikaadile SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
21	Забележка	според положителната оценка на **NEMKO ALFLAB** съгласно **Сертификат SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
22	Pastaba	kaip patvirtino **NEMKO ALFLAB** pagal **pažymėjimą SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
23	Piezīmes	atbilstoši **NEMKO ALFLAB** pozitīvajam lēmumam, ko apliecina **sertifikāts SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.
24	Poznámka	ako je to kladne posúdené **NEMKO ALFLAB** podľa **Certifikátu SAF2210-1/02, SAF2210-5/02, EMC2210-2/02, EMC2210-3/02, EMC2210-3A/02**, **EMC2210-7/02**.

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DAIKIN

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Read this manual attentively before starting up the unit. Do not throw it away. Keep it in your files for future reference.

Improper installation or attachment of equipment or accessories could result in electric chock, short-circuit, leaks, fire or other damage to the equipment. Be sure only to use accessories made by Daikin which are specifically designed for the use with the equipment and have them installed by a professional.

If unsure of installation procedures or use, always contact your Daikin dealer for advice and information.

Before installation

Installation and maintenance should be carried out by technical personnel qualified for this type of machine, in compliance with current safety regulations.

When receiving the unit please check its state, verifying if any damage occurred during transport.

Refer to the relevant technical sheets for installation and use of possible accessories.

Identify model and version of the unit from the indications stated on the carton package.

Use and operating limits

Daikin shall not be held liable
- if the unit has been installed by non-qualified personnel,
- if the unit has been used improperly,
- if the unit has been used under conditions that are not permitted,
- if maintenance operations specified in this manual have not been carried out,
- if non original spare parts have been used.

Keep the unit in its packaging until it is ready to be installed, to prevent dust getting inside.

Air sucked by the unit must always be filtered. Always use the supplied air filter.

If the unit is not used during winter, drain the water from the system to prevent damage caused by the formation of ice. If antifreeze solutions are used, check the freezing point.

Do not change the internal wiring or other parts of the unit.

Operating limits are shown here below; all other uses are considered improper:

- thermal carrier: water/glycol
- water temperature: 5°C~95°C
- maximum operating pressure: 10 bar
- air temperature: –20°C~43°C
- voltage tolerance: ±10%

Selection of location:

- do not install the unit in rooms where inflammable gases are present
- do not let water spray directly on the unit;
- install the unit on ceilings or walls that bear its weight. Leave enough space all around for proper operation and maintenance of the unit, taking into account all installed optional accessories.
- never place the heating unit immediately under an electric plug-socket.

Description of the equipment

The FWD range of air conditioning and hot-air heating units has been implemented for conditioning rooms that require the installation of ducted units.

Main components

- **Load bearing structure** made of galvanized steel sheet of suitable thickness, duly insulated with noise-proof/anti-condensing material, self-extinguishing in class 1. Complete with inspection panels.
- **Fan unit** with single or dual fan wheel, dual intake centrifugal type, with statically and dynamically balanced impellers, coupled directly to the 3-speed electric motor, equipped with permanently fit condenser and thermal safety device
- **Terminal strip**.
- **Heat exchanger**: high efficiency, made of copper tube and aluminium fins secured to the tubes by mechanical expansion. They are fit with brass manifolds and contain air valves. The heat exchanger, normally supplied with left-hand attachments, may be turned 180°.
- **System for collecting and discharging condensate**, setup either for ceiling or wall mounting. All FWD range models may be installed either in a horizontal or in a vertical position.
- **Air intake module with air filter**

  - **Air intake module**

  Made of galvanised steel sheet. These modules permit to filter the air sucked up by the unit and also to connect the unit to the intake channelling.

  - **Air filter**

  Made of acrylic material, self-extinguishing in class 1, with filtering class EU 2.

  The filter may be inserted or removed and is fixed by means of 2 knobs with M4 threaded stems.
  The filtering material may be washed and regenerated to maintain the rated filtering efficiency with limited charge leaks.

  - **The accessory kit** comprises
  - Load-bearing structure made of galvanised steel sheet
  - Removable cassette-type filter (to be pulled out like a drawer)
  - Self-tapping fixing screws

Example for installation

See figure 1.

1 FWD unit

2 Intake module with air filter

DIMENSIONS

- Intake module with flat filter class EU 2 (See figure 2)
- Standard unit (See figure 5)
  The dimensions mentioned on the left side are related to left-hand hydraulic attachments and the dimensions mentioned on the right side are related to right-hand hydraulic attachments.

1 6 fast-coupling slots

2 Condensate discharge - horizontal installation

3 Condensate discharge - vertical installation

4 Hydraulic connections
4 = standard heat exchanger
4 DF = additional heat exchanger

5 Air delivery

6 Air intake
6A = supply terms
6B = changeable during installation

7 Round pre-sheared element (Ø100 mm) for fresh air intake

INSTALLATION

The FWD air conditioning and hot-air heating units may be installed either in horizontal or vertical position. Check that the desired installation complies with one of the pictures shown in figure 3 in which both possible configurations (AA or AB) are suitable to work for heating and cooling.

Horizontal or vertical installation

(See figure 3)

AA Inlet and outlet of air are in a straight line

AB Inlet of air is not in a straight line with the outlet of air

Configuration of the unit

The units are always supplied in AA configuration, but the air inlet position may be changed during the installation.

Description of the kit (See figure 6)

1 Upper closing panel

2 Lower closing panel

3 Pre-sheared element for external air inlet

4 Centrifugal fans

5 Standard heat exchanger

6 Additional heat exchanger (DF)

7 Condensate tank for wall mounting (tube Ø3/8")

8 Condensate tank for ceiling mounting (tube Ø3/8")

9 Heat exchanger hydraulic attachments

10 Condensate discharge attachments

11 Terminal strip

12 Load-bearing structure

It is advisable to install any accessories on the standard equipment before positioning it, referring to the technical sheets.

The sections of the inlet and delivery pipes are rectangular and drilled with holes for fixing the available accessories. A round pre-sheared element (Ø100 mm) is present on both side panels of the unit for the direct inlet of fresh air.

If the installation differs from the supply terms, the layout must be changed by dismantling the unit as shown in figure 6.
It is possible to orient the exchanger's attachments on the opposite side as follows:

1 remove the upper and lower closing panels (1+2),

2 remove the condensate tank for the horizontal installation (8),

3 loosen the 4 fixing screws of the motor support, without unscrewing them all the way (7),

4 remove the heat exchanger (5) by unscrewing the 4 fastening screws, pull it out and turn it; eliminate the pre-sheared elements on the opposite side panel, re-insert the heat exchanger and tighten the screws,

5 reassemble the previously listed components,

6 stop the outlet holes of the previously used manifolds with anticondensing insulating material.

Installing the unit

Fix the standard unit to the ceiling or wall using at least 4 of the 6 slots;

- **For horizontal installation (ceiling mounting)** it is advisable to use M8 threaded bars, screw anchors suitable for the unit's weight and to arrange for the positioning of the unit using 2 M8 bolts and a washer the diameter of which is suitable for inserting the slot and for then fixing the unit.
  Before tightening the check nut, adjust the closing of the main nut so that the unit will slant correctly, i.e. for facilitating the discharging of the condensate (see figure 4).
  The correct slant is achieved by tilting the inlet downwards as compared to the outlet until a difference in level of about 10 mm is obtained from one end to the other. Make the hydraulic connections with the heat exchanger and, for cooling operations, with the condensate discharge. Use one of the 2 drains of the auxiliary tank, visible on the outside of the unit's side panels (see figure 5): horizontal (tank) and vertical condensate discharge.
- **For vertical installations (wall mounting)**, fix the unit so that water flow out toward the condensate discharge used. A slant equivalent to a difference in level between the two side panels of about 5 mm is enough.
  The two condensate discharge tubes of the main tank are located inside the side panels and may be accessed through a membrane type passage that should be perforated for passing the discharge tube through it.
  It is advisable not to remove the aforesaid membrane type passage because it prevents the sharp edge of the hole on the side panel from damaging the condensate discharge tube over time.
- **To connect the unit to the condensate discharge line**, use a flexible rubber tube and fix it to the chosen discharge tube (Ø3/8") by means of a metal clamp (use the discharge that is located on the hydraulic attachments side).
  To assist the draining of the condensate, slant the discharge tube downwards by at least 30 mm/m making sure that its entire route is clear and free from bends or blockages.
- **Installation of air filter**. For inlet, the filter module may be installed either in the same line as the outlet (configuration AA) or at 90° as compared to the unit (configuration AB). In the latter case the front lower closing panel must be moved by adjusting the 6 screws that fix it to the unit. The panel will then be installed at the bottom of the unit.
  Both ends of the filtering module are drilled to match the holes on the intake inlet of the unit.
  As such, it will be possible to couple the module to the unit and achieve, at the other end, a positioning of the holes that is identical to that of the intake inlet of the air handling unit.
  The drilled holes at one end of the module are Ø5 mm; this is the part that is to be coupled directly to the unit.
  At the other end the diameter of the holes is 3.5 mm to ensure that the screws, which will be used for fixing other parts (field supply) will be tight.
  The overall dimensions are shown in figure 2.

- The installation of the filter module is schematically shown in:
  - figure 9: installation of filter intake modules on FWD with configuration AA.
  - figure 10: installation of filter intake modules on FWD with configuration AB.

  Use the self-tapping screws supplied with the kit.

A few rules to follow

- Purge the air from the heat exchanger, with pumps stopped, by means of the air valves located adjacent to the attachments of the heat exchanger itself.
- When implementing a duct type system, it is advisable to place vibration damping joints (field supply) between the channelling and the unit.
- If you wish to install an electrical resistance module (EDEH) as accessory, the delivery vibration damping joint should be heat resistant.
- The ducting, especially the delivery one, should be insulated with anticondensing material.
- Provide an inspection panel adjacent to the equipment for the maintenance and cleaning operations.
- Install the control panel on the wall. Choose a position that is easy to access for the setting of the functions and for detecting of the temperature. Try to avoid positions that are directly exposed to sun rays, or positions subject to direct hot or cold air currents. Do not place obstacles in the way that would prevent the correct reading of the temperature.

FIELD WIRING

All field wiring and components must be installed by a licensed electrician and must comply with relevant local and national regulations.

Carry out the electrical wiring after having turned the power off. For options, refer to the appropriate manual.

Check that the power supply corresponds to the nominal power supply stated on the unit nameplate.

Each unit requires a switch (IL) on the power supply with a distance of at least 3 mm between the opening contacts and a suitable safety fuse (F).

Power consumption is shown on the data plate fixed to the unit.

Make sure to carefully execute the wiring in function of the combination unit/controller and this according to the correct wiring diagram delivered with every accessory.

In order to make the electrical connections you must remove the lower closing panel (see figure 6) to access the terminal strip.

The power cables (power supply and control) must be routed to the terminal strip through the membrane passage that is on the side panel of the unit on the side opposite the hydraulic attachments.

Figure 7 shows the FWD wiring diagram without control panel.

The motors of the units run at 3 speeds.

The common wire of the motor is the white one (WH).

If the common wire is not connected correctly, the motor would be damaged irreparably.

Wiring parts table (See figure 7)

BK..... Black = maximum speed

BU or GY ..... Blue or Gray = medium speed

GNYE ..... Green-Yellow = earth

RD ..... Red = minimum speed

WH ..... White = common wire

- - - -..... Field wiring

CN ..... Connector

F ..... Fuse (field supply)

IL ..... Line switch (field supply)

M ..... Motor

① ..... Connections to controller

TEST RUN

Check that the equipment has been installed so that it guarantees the required slant.

Check that the condensate discharge is not clogged (by rubble deposits, etc.).

Check the seal of the hydraulic connections.

Check that the electrical wiring is perfectly tight (perform this check with voltage OFF).

Be sure that the air purge of the heat exchanger has been carried out correctly.

Turn on the power supply and check the unit running.

USE

To use the unit, refer to the instructions in the installation and operation manual of the controller. Dedicated controllers are available as accessory.

MAINTENANCE AND CLEANING

For safety reasons before carrying out any maintenance or cleaning operation, turn off the unit and cut the voltage by turning the line switch to OFF.

Maintenance

The maintenance operations for the FWD air conditioner and hot-air heating units are limited to the periodic cleaning of the air filter and the heat exchanger, and the checking of the working efficiency of the condensate discharge.

Only skilled personnel may perform the maintenance.

Pay utmost attention during the maintenance operations: accidentally coming into contact with some of the metallic parts might cause injuries, therefore use safety work gloves.

Every time the units are started after a long idle period, make sure that air is NOT present in the heat exchanger.

The motor is maintenance-free since it is equipped with self-lubricating bearings.

Cleaning the air filter

Cut voltage to the unit by turning the line switch to OFF.

For cleaning the air filter proceed as follows (see figure 6)

- Access the equipment through the inspection panel and remove the air filter as shown in figure 8 by unscrewing the fixing knobs.
- Otherwise, if the filter is inside the intake grid, remove the grid and carry out the operations described below.
  (See figure 8)

  1 Intake module with filter

  2 Air filter, secured to the intake module by means of screws, it is pulled out like a drawer.

- Wash the filter with lukewarm water or, for dry powders, with compressed air.
- Reassemble the filter after having it dried up.

Cleaning the heat exchanger

It is advisable to check the condition of the heat exchanger before the start of the summer season. Also check if the fins are not clogged by impurities.

To access the heat exchanger, remove the delivery panel and the condensate tank. Upon having accessed the heat exchanger, clean with compressed air or low pressure steam, without damaging the fins of the heat exchanger.

Before operating it in the summer, check the condensate discharges regularly.

NOTE Adequate and regular maintenance and cleaning means energy conservation and cost saving.

DISPOSAL REQUIREMENTS

Dismantling of the unit should be done in accordance with the relevant local and national regulations.

TROUBLESHOOTING

If the unit does not work properly first check the points reported in the table below before requesting service.

If the problem cannot be solved contact your dealer or service centre.

Symptom 1: The unit does not run at all

POSSIBLE CAUSES	CORRECTIVE ACTION
Power failure	Restore power
The automatic circuit breaker tripped	Contact service centre
The switch is on STOP ("0") position	Turn ON the unit, select "I"

Symptom 2: Poor cooling or heating performance

POSSIBLE CAUSES	CORRECTIVE ACTION
Dirty or clogged air filter	Clean the air filter
Obstacle near the air inlet or outlet	Remove the obstacle
Air inside the heat exchanger	Contact the installer
Doors and windows are open	Close doors and windows
The unit is running at low speed	Select medium or high fan speed

Symptom 3: The unit leaks

POSSIBLE CAUSES	CORRECTIVE ACTION
The unit is not installed with the correct inclination	Contact the installer
The condensate discharge is clogged	Contact the installer

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