

USER AND MAINTENANCE MANUAL

BACKWARD INCLINED BLADE FANS DIRECT DRIVE WITH IMPELLER AND MOTOR

This manual is designed to inform the user about the proper assembly and use of the device. The user is advised to get fully acquainted with the contents of the manual before installation of the device and to handle the device according to the manual.



CONTENTS

Page

SECTION

I. General informations.	3
II. Model numbering system	3
III. Purpose.	3
IV. Reservations of the manufacturer.	3
V. Technical data.	4
VI. Construction, unit assembly.	6
VII. Installation.	7
VIII. Use and maintenance instruction.	10
IX. Troubleshooting.	11
X. Safety Guidelines.	11
XI. Storage and transportation.	12
WARRANTY CERTIFICATE	14

LIST OF DRAWINGS:

1. Overall dimensions.
2. Wall mounted installation example.
3. Fan in central ventilating ducting.
4. Fan assembled together with swing boom.
5. Assembly of fan.

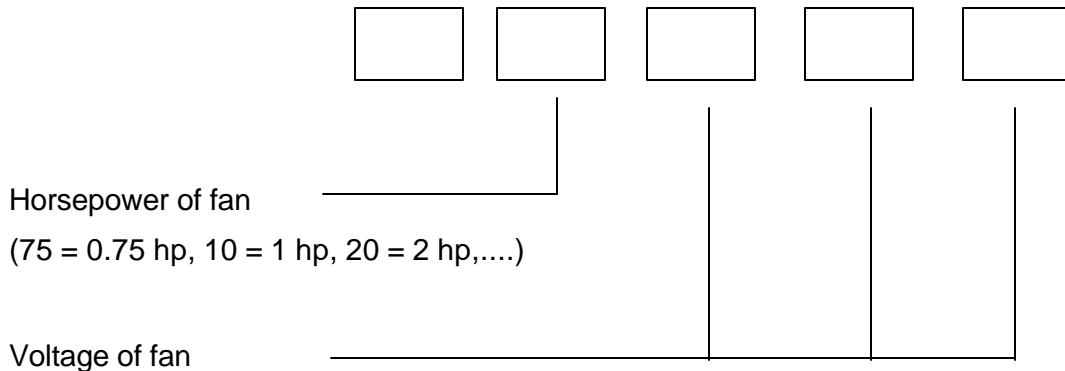


I. GENERAL INFORMATIONS.

This manual contains basic technical data of OsKar Backward Inclined Blade, direct drive fans and necessary information about installing, startup and use of them. Before installing or using the fans it is necessary to read this manual.

II. MODEL NUMBERING SYSTEM

Stationary suction units have the indication code as follows:



III. PURPOSE.

OsKar Backward Inclined Blade fans include impellers which are used to exhaust contaminated air to the outside or to a filtering device.

Our standard models make it possible to “pump” air and non-explosive gases with temperature to 104F (40°C).

IV. RESERVATIONS OF THE MANUFACTURER.

The Manufacturer reserves the right to make design and technological changes, which may improve the device.

Before assembly and use of the fan the owner and operator should read this manual carefully in order to understand fully the construction of the device, the principles of its operation, as well as its service and safety features. This will permit safe, efficient operation and assembly of the device.



V. TECHNICAL DATA.

Table 1. Primary technical data (for versions with standard motor).

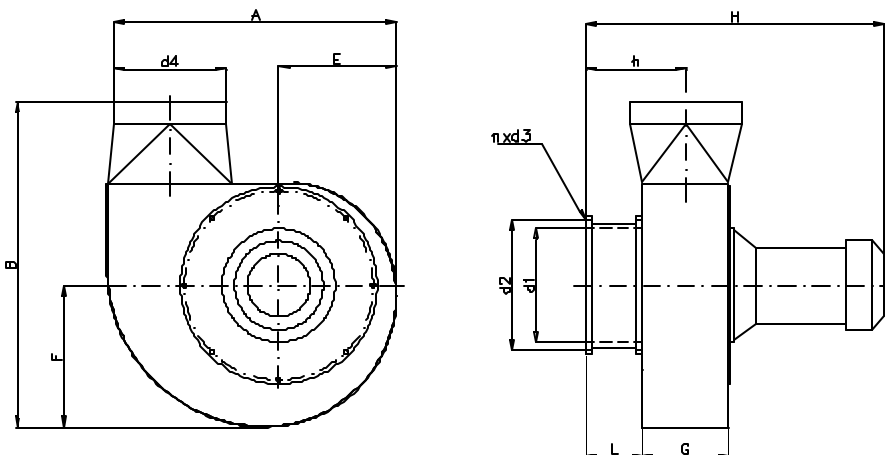
Motor data			Nominal point of work		Inlet diameter [in.]/[mm]	Outlet diameter [in.]/[mm]	Weigh kg/ [lb]	Noise level [dB(A)]
Power [HP]	Rotational speed	Power supply	V [cfm]/[m ³ /h]	Dp [in.w.g.]/[Pa]				
0,55	3450	1 phase/60Hz	-	3/750	6.3" / 160	6" / 150	22/48	75
0,75	3450	1 phase/60Hz	676/1100	3/750	6.3" / 160	6" / 150	26/57	83
1,0	3450	1 phase/60Hz	861/1400	3/750	8" / 200	8" / 200	28/62	85
2,0	3450	1 phase/60Hz	1414/2300	3/750	10" / 250	10" / 250	32/70	87
3,0	3450	1 phase/60Hz	2460/4000	3/750	12" / 300	12" / 300	38/84	90
5,0	3450	1 phase/60Hz	3075/5000	3/750	12" / 300	12" / 300	41/90	90

The fan impellers are balanced to class G 6.3.

NOTE : The fans should be used within the ranges of delivery and power demand which are in accordance with the characteristics.

Table 2. Primary dimensions.

Fans type	0.55 hp	0.75 hp	1 hp	2.0 hp	3.0 hp	5.0 hp
A [in.]/[mm]	14.4/367	18.0/459	20.2/513	22.7/577	25.6/651	25.6/651
B [in.]/[mm]	17.8/453	20.8/529	22.6/575	24.8/629	27.3/693	27.3/693
E [in.]/[mm]	5.7/149	7.3/186	8.3/209	9.2/234	10.4/265	10.4/265
F [in.]/[mm]	7.1/180	8.8/224	9.8/251	11.0/280	12.5/318	12.5/318
H [in.]/[mm]	18.5/470	19.2/488	21.1/535	24.8/630	25.4/645	27.3/693
L [in.]/[mm]	3.1/80	3.1/80	3.9/100	4.9/125	4.9/125	4.9/125
G [in.]/[mm]	5.1/129	5.8/147	5.9/151	6.3/161	6.9/174	7.8/197
h [in.]/[mm]	5.7/146	6.1/154	6.9/176	7.4/188	8.4/212	8.8/224
d1 [in.]/[mm]	6.3/160	6.3/160	7.8/200	9.8/250	11.8/300	11.8/300
d2 [in.]/[mm]	7.67/195	7.67/195	9.68/246	11.41/290	13.5/343	13.5/343
d3 [in.]/[mm]	0.28/7	0.28/7	0.35/9	0.35/9	0.35/9	0.35/9
d4 [in.]/[mm]	5.9/150	5.9/150	7.8/198	9.8/248	11.9/303	11.9/303
n [pcs]	6	6	8	8	8	8





Drawing 1. Overall dimensions.



VI. CONSTRUCTION, UNIT ASSEMBLY.

OsKAR Backward Inclined Blade fans consist of the following components (see Drawing 5):

1. The Connection Flange (item **3**)
2. The housing (item **1**) – made of welded sheets
3. The impeller (item **4**) – the centrifugal drum impeller fabricated of zinc coated steel causes flow of air and together with the housing and the motor determines the parameters of the fan
4. The inlet to the impeller (item **5**) made of steel sheet ensures proper direction of air stream which comes to the impeller

Table 3. List and indications of the parts (standard version).

Item	Part/Type of unit	Q-ty	705000	775000	71000	72000	73000	75000
			Art. no	Art. no	Art. no	Art. no	Art. no	Art. no
1	Housing	1 piece	705000 - 1	775000 - 1	710000 - 1	72000 - 1	73000 - 1	75000 - 1
2	Impeller	1 piece	705000 - 2	775000 - 2	710000 - 2	72000 - 2	73000 - 2	75000 - 2
3	Motor	1 piece	705000 - 3	775000 - 3	710000 - 3	72000 - 3	73000 - 3	75000 - 3
4	Inlet to impeller	1 piece	705000 - 4	775000 - 4	710000 - 4	72000 - 4	73000 - 4	75000 - 4
5	Flange for connecting	1 piece	705000 - 5	775000 - 5	710000 - 5	72000 - 5	73000 - 5	75000 - 5
6	Motor plate	1 piece	705000 - 6	775000 - 6	710000 - 6	72000 - 6	73000 - 6	75000 - 6
7	Bolt	4 pieces	705000 - 7	775000 - 7	710000 - 7	72000 - 7	73000 - 7	75000 - 7
8	Nut	4 pieces	705000 - 8	775000 - 8	710000 - 8	72000 - 8	73000 - 8	75000 - 8
9	Washer	4 pieces	705000 - 9	775000 - 9	710000 - 9	72000 - 9	73000 - 9	75000 - 9
10	Lock washer	4 pieces	705000 - 10	775000 - 10	710000 - 10	72000 - 10	73000 - 10	75000 - 10
11	Bolt	8 pieces	705000 - 11	775000 - 11	710000 - 11	72000 - 11	73000 - 11	75000 - 11
12	Washer	8 pieces	705000 - 12	775000 - 12	710000 - 12	72000 - 12	73000 - 12	75000 - 12
13	Lock washer	8 pieces	705000 - 13	775000 - 13	710000 - 13	72000 - 13	73000 - 13	75000 - 13
14	Bolt	8 pieces	705000 - 14	775000 - 14	710000 - 14	72000 - 14	73000 - 14	75000 - 14
15	Washer	8 pieces	705000 - 15	775000 - 15	710000 - 15	72000 - 15	73000 - 15	75000 - 15
16	Lock washer	8 pieces	705000 - 16	775000 - 16	710000 - 16	72000 - 16	73000 - 16	75000 - 16
17	Bolt	2 pieces	705000 - 17	775000 - 17	710000 - 17	72000 - 17	73000 - 17	75000 - 17

NOTE: The drawing numbers are given in accordance to the Manufacturer's documentation.

Sequence of unit assembly (see Drawing 5):

1. Attach the motor (**3**) to the motor plate (**6**) by means of the bolts (**7**) and the nuts (**8**) by means of washer (**9**) and the lock washer (**10**),



-
2. Tight the adjusting key type A with motor axle. Next put the impeller (2) and protect against slipping of screws of the bolt (17),
 3. Attach the motor (3) with plate (6) and impeller (2) to the housing (1) by means of the bolts (11) protecting them against loosening by means of the washer (12) and the lock washer (13),
 4. From the suction side put on the inlet (4) and the connecting stub pipe (5) and bolt them up to the housing (1) using the bolts (14), which are bolted into the special rivet-nuts and protected by means of the flat and lock washers (15, 16).
Before bolting down above mentioned items, their flanges should be covered with a thin silicone layer for sealing.

VII. INSTALLATION.

OsKar Backward Inclined Blade fans have (on the inlets of the housing) a flange for duct or hose connection, which may be bolted directly to a bracket or fume arm sockets by means of bolts.

The air outlet of the fans is adaptable to connection of the flexible hose fixed with a gear clamp.

In order to limit vibration transfer flexible connections to the ducting should be used.

Fan Uses for ventilation of the work area:

1. **The Oskar Backward Inclined Blade Fan installed on a bracket** - only for **0.75Hp** or **1.0Hp** Oskar fan connected with **6"** or **8"** Oskar Fume Arm.

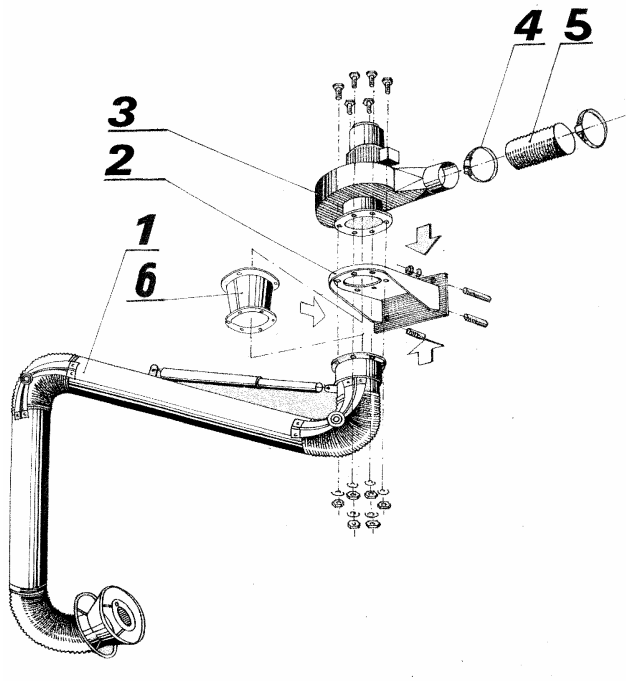
Refer to Drawing 2 for this method of installation. For this type of fan installation a special brackets is used.

The sequence of the assembly:

- a) Mount the bracket (2) to the wall, beam or floor stand by means of four bolts and proper support. The bracket should be horizontal.
- b) Install the fan (3) and OSKAR fume arm (1) – hanging version on the bracket (2). Use six bolts M6x25. Between the flange of the fan and the bracket, install the sealing ring – type "O-ring" 170 x 5.



c) Connect the outlet of the fan to the system with the flexible hose (5), and join by means of the gear clamp (4). Further installation depends on the user's needs.

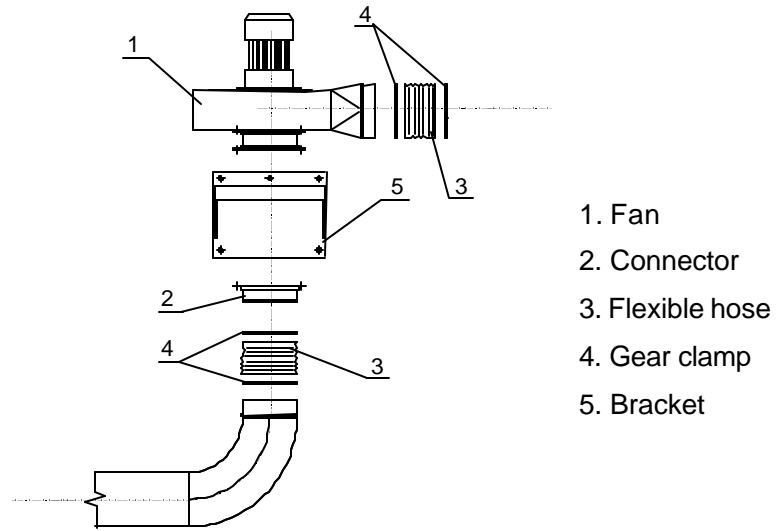


1. Self-supporting arm OSKAR
2. Bracket
3. Fan
4. Gear Clamp
5. Flexible hose
6. Connecting components

Drawing 2. Wall mounted installation example.

2. Fan central (connected to ducting) installation (see Drawing 3).

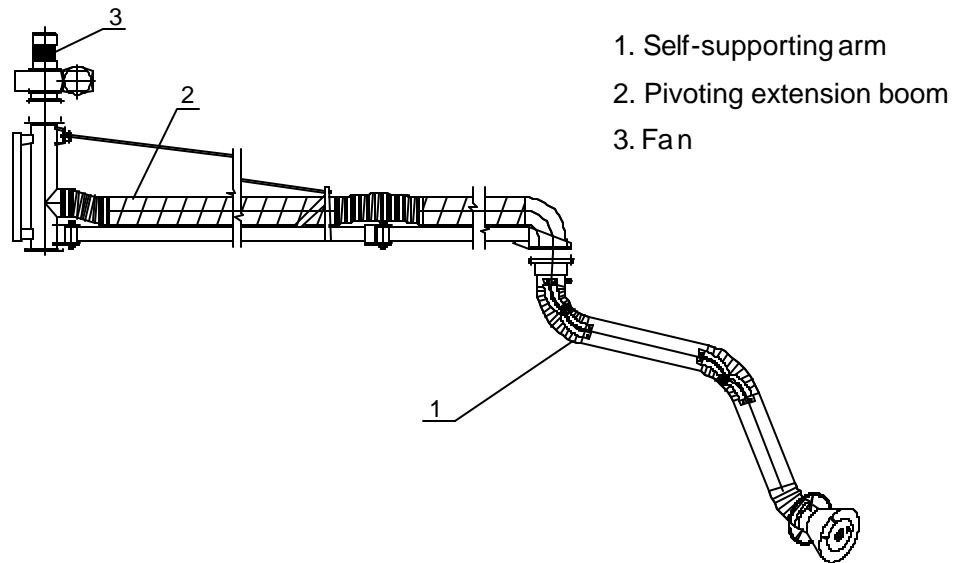
Follow assembly instructions above. Instead the OSKAR fume arm you may install the connector and the flexible hose which is connected to the connector by means of the gear clamp.



Drawing 3. Fan in central ventilating ducting.



3. The fans with the pivoting extension boom.



Drawing 4. Fan assembled together with swing boom.

OsKar pivoting extension booms with a range from 2 to 6 metres (6 to 19ft) are made by O.A.A. and equipment with the OsKar Backward Inclined Blade fans must be chosen in order to suit the particular ducting.

Fix the fan to the pivoting extension boom by means of six bolts M6x25. Connect the outlet as in Drawing 3.

NOTE : CONCERNING ALL BACKWARD INCLINED BLADE FANS.

Upon initial start up of fan or after disconnection from power supply, ALWAYS verify that the impeller of the unit and the motor direction is the same as the arrow on the fan. If not the electrician must reverse rotation by inverting the phases. This is by far the most common cause of low airvolumes as the fan capacity is reduced by as much as 2/3rd with improper rotation.

VIII. USE AND MAINTENANCE INSTRUCTION.

OsKar Backward Inclined Blade fans do not require continuous inspection of their performance. The Manufacturer recommends inspection of all bolt joints between the fan and the housing. On an annual basis, fans blades should be cleaned and



checked. Any damaged impellers **must** be replaced with a new one from OsKar. The electric motor should have periodic inspection.

IX. TROUBLESHOOTING.

Symptoms	POSSIBLE Reasons	Solution
Low Fan air volume	Fan Rotation is incorrect	Reverse Motor polarity Check if hose is plugged.
The fan is vibrating	Unbalanced fan impeller. Worn or damaged bearings. Loosened bolts of motor or of whole fan.	Balance the fan to Amca class G 6.3 or replace with a new one. Replace the bearings. Tighten the bolts.
The fan makes noise	Lose or damaged motor bearings. Forgien Item jammed in impeller.	Replace the bearings. Remove forgien matter, clean up and inspect for damage, balance or replace if needed.

X. SAFETY GUIDELINES.

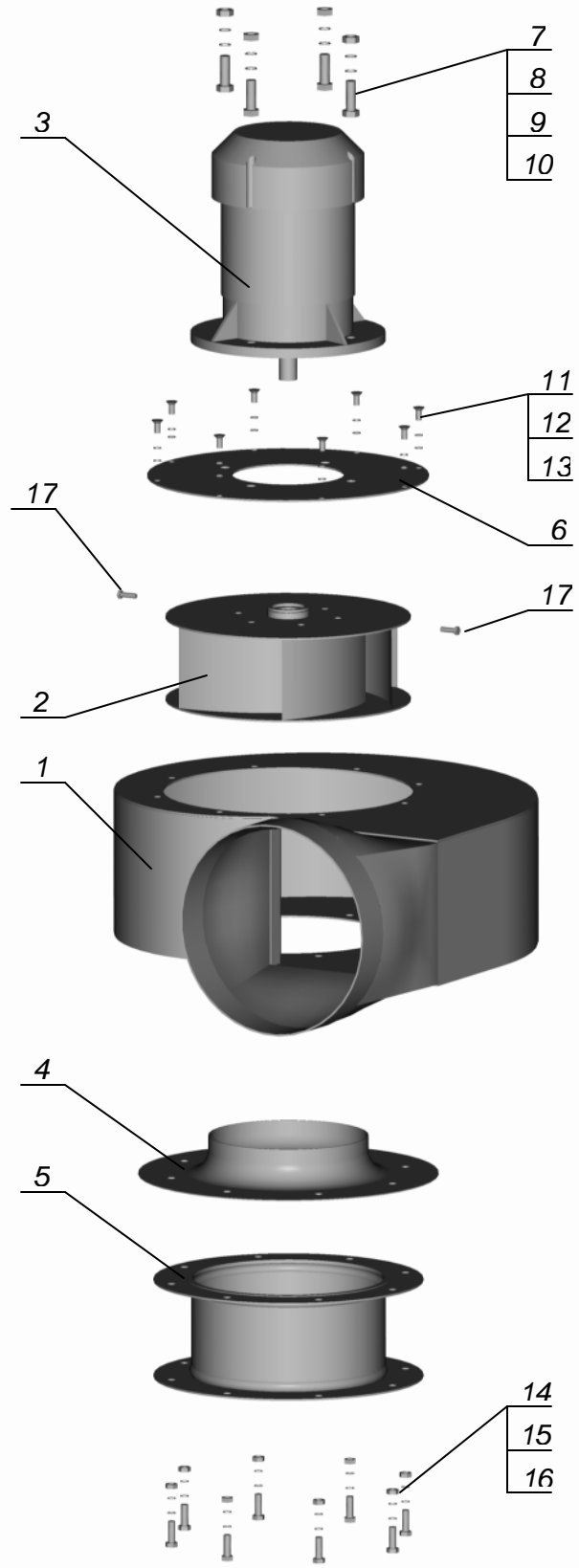
During use of the Backward Inclined Blade fans it is necessary to abide by rules as follow:

1. The motor of the fan should be installed according to the recommendations of the Manufacturer and wiring should be carried out by a qualified electrician.
2. Do not perform repairs or renovations while fan is in operation.
3. All damaged electric leads or any components of the fan – supply system of the fan – the repair must be repaired immediately.
4. Before starting the after any repairs, it is necessary to verify that no tolls or forgotten items were left inside the fan housing.



XI. STORAGE AND TRANSPORTATION.

The Backward Inclined Blade fans should be stored in dry rooms. The fans can't be stored in the rooms where gases and caustic vapours or aggressive fumes may occur and damage the housing or fan component.



Drawing 5. Assembly of fan.

WARRANTY CERTIFICATE

The Manufacturer provides the warrantee for a period of 12 months from the date of purchase, but not more than 18 months from the date of manufacture for the product as follows:

Name and type:

Model No :

Manufacture date:

Date of purchase:.....

The warranty covers defects, in material or workmanship. The warrantee does not cover any damages caused by the Buyer, especially arisen as a result of not following the rules of use and maintenance or arising during the Buyer's transportation. Complaints should be brought to the attention of the Manufacturer's agent or the Manufacturer together with the warrantee certificate. Repair or replacement will be determined by the manufacturer or his appointed agent and at his discretion upon proper inspection of the goods if deemed necessary by the manufacturer or his appointed agent. In the case of such replacement or any replacement of a very important component of the device the warrantee period restarts from the date of repair or replacement. In the case of losing or destroying of warrantee certificate – the Buyer loses the right to complaints.

Date of a defect

The warrantee is extended for a repair period of ending

Date of a defect

The warrantee is extended for a repair period of ending

Manufacturer's stamp

For the agent

Product quality control stamp