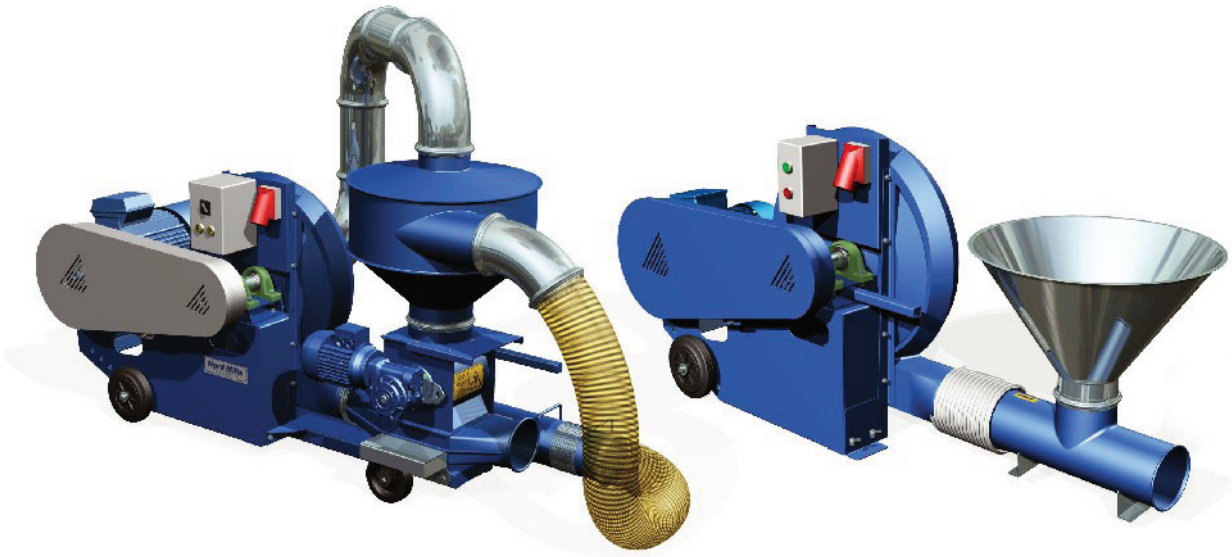
USER MANUAL



BELT DRIVEN BLOWERS AND SUCTION-BLOWERS

HV-55, HV-75, HV-110, HV-150 and IP-75, IP-110, IP-150

FURAB AB
-SILOSPECIALISTEN

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Contents

Chapter 1 General

Congratulations on your selection! It is characteristic of Furab AB products to be reliable, to have simple functions and to be easy to use. We have carefully selected the components and materials for our product, for the product to be at your service for as long as possible.

Regular monitoring of the machine's functioning and its maintenance guarantee a trouble-free use and a long lifespan for the equipment. Before using the machine, read this manual through carefully. This will give you a good start and an idea of what is required for the equipment to work correctly. Keep this manual in such a way that it is easily available when necessary.

1.1. Warranty conditions

Furab Aktiebolag gives this device a **1-year warranty** starting from the date of delivery. **The warranty covers any possible material and component faults evident in the machine.** The manufacturer does not have any warranty liability in case the fault has been caused by errors in installation, improper use, and negligence regarding cleaning, accident, modifications or misuse. The warranty does not cover any parts for normal wear and tear; and does not indemnify any possible injuries or physical damage, damages caused indirectly or the cost of replacing parts, unless the manufacturer decides so separately.

Furab Aktiebolag will not be liable for any possible faults that will become evident after the end of the warranty period, but these can be agreed upon separately on a case by case basis.

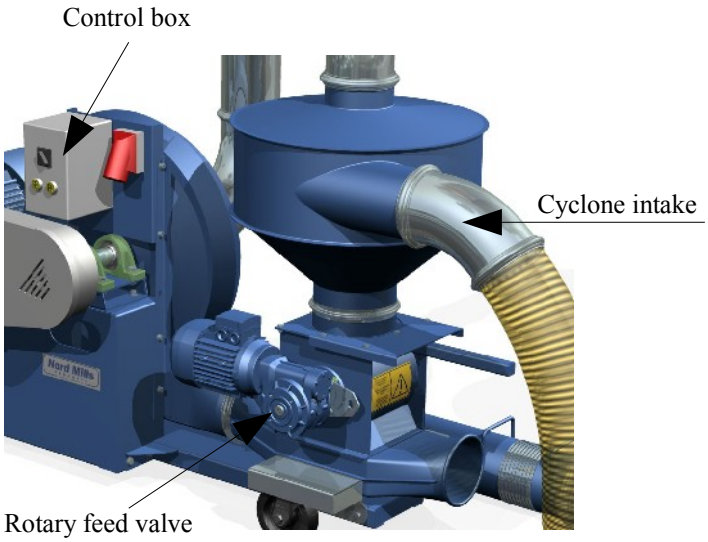
1.2. Safety instructions

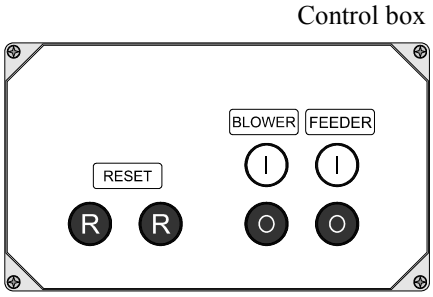
Take care that all guards are in place and fixed during operation. Blower noise can be irritating. Ear protection should be used under long-term continuous exposure. Use eye protection when working in vicinity of the intake or outtake. Particles can fly out from the air opening, causing eye damage if proper protection is not worn.

Avoid open suction pipes. Clothing or other foreign objects can be drawn into the machine, causing injury to a person and/or property. Always use a discharge cyclone to decelerate the grain and separate it from the air stream.

Always stop the machine prior to greasing, adjustments or repair. After use, clean up the machine and the pipe system.

1.3. Machine description





Chapter 2 Operation

2.1. Piping instructions

The capacity of the blower depends to a large extend on the arrangement of the pipe layout. The following points should be observed:

1. Suction piping should be kept as short as possible. Increasing the suction piping from 5m to 10m will result 33% decrease in efficiency. If possible, it is advised to use a steel pipe to extend the pipe line, as this is more robust and gives less performance decrease compared to the flexible pipe.*
2. The flexible pipe is to be kept in as straight line as possible. Curves will get worn faster and affects to the performance. Avoid connecting the flexible pipe directly to the suction cyclone, as this may put too much of stress on the pipe and may cause a sharp bend.*
3. Always use 160mm diameter pipes. Changing the pipe size to a smaller and bigger may cause unwanted effects and will reduce conveying capacity considerably.
4. Air leaks between pipes will reduce the efficiency. Take extra care to avoid leaks on the suction line.
5. If possible, all blowing pipes should run either vertically or horizontally. Sloping pipes reduce capacity and increase pipe wear.

2.2. Starting and stopping

Before starting the machine, ensure that the air regulator of the blower rotor is in closed position. If necessary, also open the slide of the suction head or remove it from grain.* Push the blower start button. After few seconds the motor will switch from running in Y configuration to D and begins to run at full speed. Now speed, push the feeder start button and the air regulator can be opened again and usage may begin.

Stop conveying by removing the suction head from the grain or open the slide on the suction head completely*. Run blower and the piping system clean and only after that stop the blower.

* Suction-blowers only

2.3. Adjusting

2.3.1. Suction-blowers

Open the slide on the suction head fully before placing the intake in the grain. Then slowly close the slide while monitoring the operation. The function of the slide is to ensure correct balance between air and grain.

If the slide is too open, there will be too little or no grain conveyed at all. If the slide is closed too far, there will be too little air and the grain will settle in the pipe system and may block the pipe system completely.

2.3.2. Grain blowers

Unlike suction-blowers, plain grain blowers do not include any adjustment for grain transport. User needs to take care that proper amount of grain is being feed to the grain intake.

2.4. Clearing a Blocked Pipe System

Open the slide on the suction head completely, or raise the intake clear of the grain to see if the blower itself can clear the system. If this is not possible, separate and empty the pipe system. Adjust the slide on the suction head for maximum conveying capacity (suction-blowers only).

2.5. Trouble shooting

Poor capacity	Suction head not correctly adjusted	Adjust the valve in suction head for correct air and grain balance (suction-blowers only)
	Belts worn or need tightening	Replace or tighten the belts
	Pipe system not correctly arranged	The pipeline should be kept as short as possible. Do not user more bends or diverters than necessary. Make sure that conveying air gets released from the silo – add vents and dust filters.
	Moist or dirty grain	High moisture rate reduces the capacity. Handling of dirty grain will also reduce the capacity.
	Rubber blades in rotary valve worn	Replace the rubber blades. Worn blades also causes grain to flow thru rotor blades.
	Wrong direction of rotation	Ask a qualified electrician to reverse the direction or use specific adapter between electric cord (see arrows on blower and rotary valve for direction).
No capacity but the blower is running	Blocked pipe system	Clear the pipe system, see chapter “2.4 Clearing a Blocked Pipe System“
	Rotary valve stopped due to a foreign object jamming the drum	Remove the object and check for damage to the rotary valve

Chapter 3 Maintenance

WARNING! Always stop the machine prior to greasing, adjustment or repair.

3.1. Greasing and cleaning

Grease the bearings on the blower belt side every 150 working hours. Never over-grease the bearings. If the casing is filled with too much of grease, the bearing will get hot. Greasing the bearings of the slot feeder is not necessary but once an year.

The material conveyed will determine how often the cleaning is required.

3.2. Motors and belt pulleys

Please do not cover up the motors. Keep them free of dirt for the best cooling.

Check the tension of the blower belt regularly, especially when they are new. If the belts are too tight, both the bearings and the belt will be overloaded and their life considerably reduced. If the belts are too slack they will slide on the belt pulleys and wear quickly. At the same time the blower will run too slowly reducing the conveying capacity.

To inspect the belt remove the guard and check the belt with tension tester for best results. Adjusting, when necessary, is done by opening the four (4) bolts holding the motor assembly and sliding it towards or away from the blower.

If it is not possible to adjust one set of belts so that all the belts have the proper tension, the whole set must be replaced.

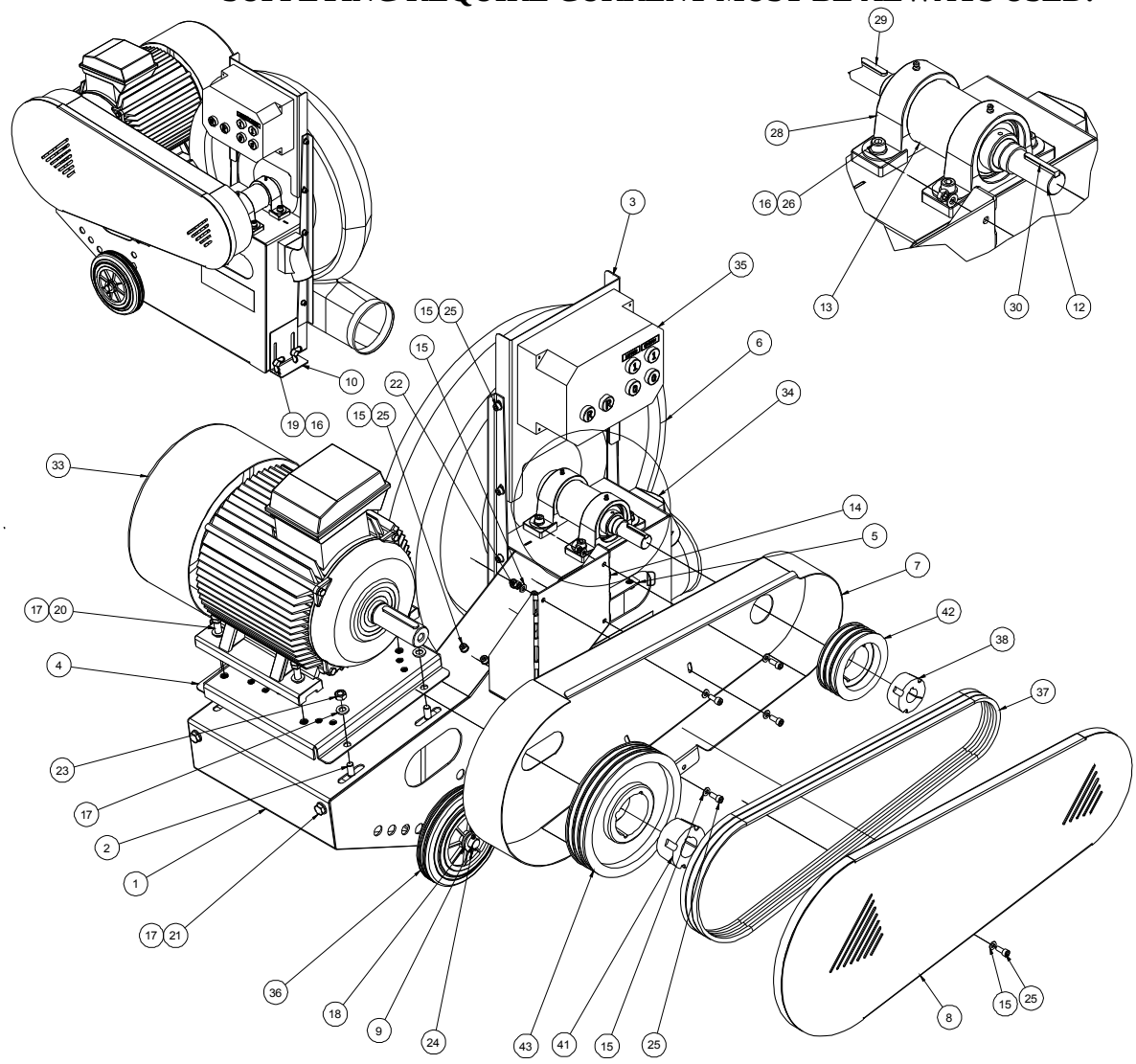
3.3. Storage

Clean and grease the machine before storage. To prevent rust, store the machine in a dry place protected against wind and moisture.

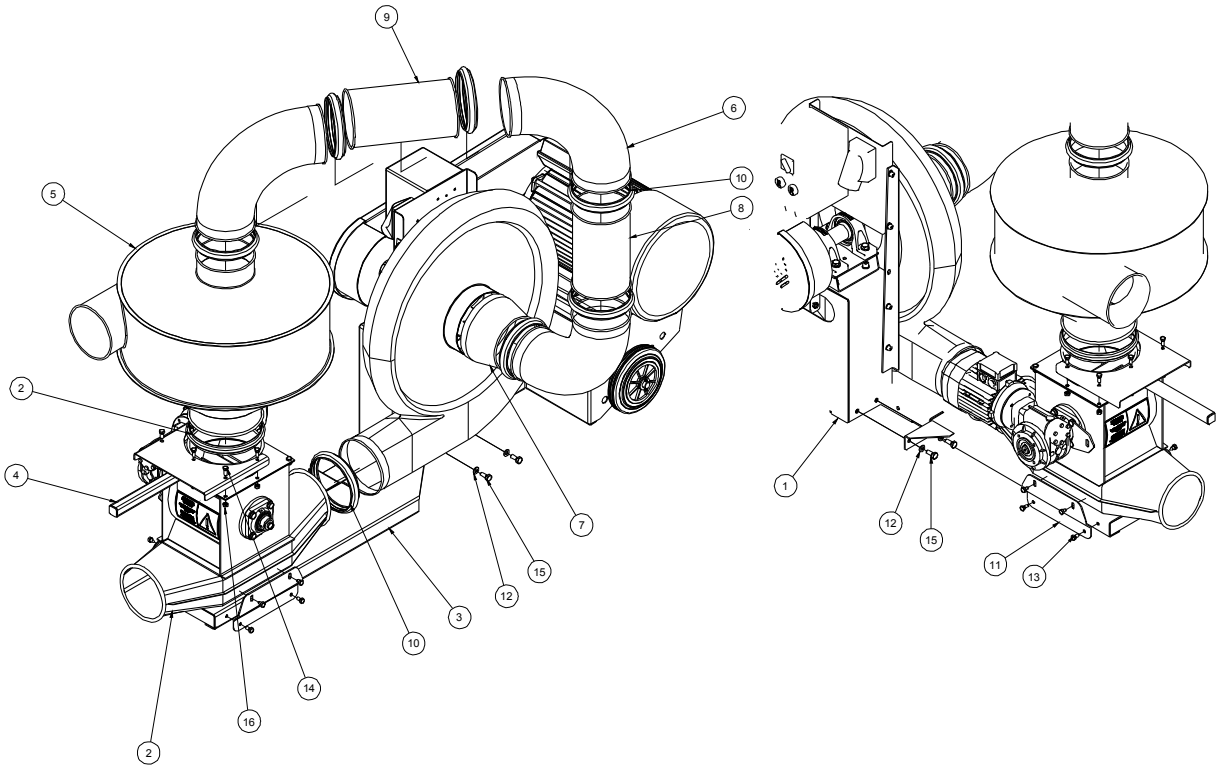
Chapter 4 Technical data

	HV-55	HV-75	HV-110	HV-150	IP-75	IP-110	IP-150
Motor power (blower)	5,5 kW	7,5 kW	11 kW	15 kW	7,5 kW	11 kW	15 kW
Electrical connection	3x380/50	3x380/50	3x380/50	3x380/50	3x380/50	3x380/50	3x380/50
Recommeded min fuse size	25	25	35	35	25	35	35
Motor RPM	1500	1500	1500	1500	1500	1500	1500
Blower RPM	4000	4000	4000	4000	4000	4000	4000
Weight, approximately					220	250	290
Conveying pipe size	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm

ATTENTION! FOR CORRECT OPERATION, A POWERLINE CAPABLE SUPPLYING REQUIRE CURRENT MUST BE ALWAYS USED!



ITEM	PART NUMBER	DESCRIPTION	QTY
1	NM17-03-3-01	Frame	1
2	NM17-03-3-02	Belt tightener	2
3	NM17-03-3-03	Control box attachment plate	1
4	NM17-03-3-04	Motor mounting plate	1
5	NM17-03-3-05	Bearing mount	2
6	NM17-05-3-01	Rotor	1
7	NM17-08-3-01	Belt safeguard frame	1
8	NM17-08-3-02	Belt safeguard cover	1
9	NM17-03-1-04	Wheel axle ø20	1
10	NM17-03-1-08	Adjustment foot	1
11	NM17-07-1-05	Spacer	1
12	NM17-07-1-10	Axle	1
13	NM17-07-1-11	Plastic tube ø75 - 85	1
14	NM17-08-1-05	Belt safeguard attachment	1
15	DIN 125 - A 8,4	Spacer	22
16	DIN 125 - A 10,5	Spacer	6
17	DIN 125 - A 13	Spacer	10
18	DIN 125 - A 21	Spacer	4
19	DIN 316 - M10 x 30	Wing-bolt	2
20	DIN 933 - M12 x 50	Bolt	4
21	DIN 933 - M12 x 100	Bolt	2
22	DIN 934 - M8	Hex nut	5
23	DIN 934 - M12	Hex nut	4
24	ISO 1234 - 4 x 28	Pin	2
25	ISO 4762 - M8 x 20	Allen bolt	17
26	ISO 4762 - M10 x 35	Allen bolt	4
27	ISO 4762 - M12 x 20	Allen bolt	1
28	UCP-207	Bearing UCP 207	2
29	SFS 2636 - A 8x7x40	Wedge	1
30	SFS 2636 - C 8x7x50	Wedge	1
33	160 B3 / 1500	7,5 kW 1500 RPM	1
33	160 B3 / 1500	11 kW 1500 RPM	1
33	160 B3 / 1500	15 kW 1500 RPM	1
34	Power socket 3+N+PE	Power socket	1
35	Control box 4kW - 11kW	Control box (with/without feeder)	1
36	LTU-200 PK	Manner Wheel LTU-200 PK	2
37	XPA13X1732	V-Belt (7,5 kW – 11 kW)	3
37	XPA13X1800LA	V-Belt (15 kW)	3
38	SPA 1610-35	Taper Lock (7,5 kW – 11 kW)	1
41	SPA 2517-38	Taper Lock (7,5 kW)	1
41	SPA 2517-42	Taper Lock (11 – 15 kW)	1
42	SPA 90-3-1610	V-Belt pulley (7,5 kW – 15 kW)	1
43	SPA 224-3-2517	V-Belt pulley (7,5 kW blowing)	1
43	SPA 236-3-2517	V-Belt pulley (7,5 kW suction-blower)	1
43	SPA 250-3-2517	V-Belt pulley (11 kW)	1
43	SPA 280-3-2517	V-Belt pulley (15 kW)	1



1	NM17-06-03-01	Belt driven blower
2	NM20-01-01-03-01	Rotary valve
3	NM22-01-3-01	Frame extension
4	NM22-05-3-01	Handle
5	NM22-03-1-01	Cyclone
6	NM22-04-1-01	Curve k16-9
7	NM22-04-1-02	Choke ø200-ø160
8	NM22-04-1-03	Pipe ø160 -262
9	NM22-04-1-04	Pipe ø160 -300
10	NM22-04-1-05	Clamp ø160
11	NM22-01-1-05	Rotary valve attachment
12	DIN 125 – A 10,5	Spacer
13	DIN 933 – M8 x 16	Allen bolt
14	DIN 933 – M8 x 20	Allen bolt
15	DIN 933 – M8 x 25	Allen bolt
16	DIN 934 – M8	Hex nut
17	ISO 1479 – ST8 x 16 – C	Sheet metal tapping screw

EC DECLARATION OF CONFORMITY

herewith declares that

GRAIN TRANSPORT BLOWER

model no. _____

is in conformity with the EC Machinery Directive 2006/42/EC,
Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EEC

This machinery has been designed and manufactured
in accordance with the following standards:

Low Voltage Directive:

1. EN 60204-1/A1 Electric Controls for Machines

EMC Directive:

1. EN 61000-6-2:2006 Emission standard for residential, commercial and light industrial environments
2. EN 61000-6-2:2005 Immunity for industrial environments.

This declaration is not anymore valid if the technical features or other features
of the tool are changed without manufacturer's permission.