



ERGO Extraction arms ERGO-M/Z
ERGO-K/Z
ERGO-L/Z
ERGO-D/Z

Maintenance Manual

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1. How it works

ERGO extraction arms are designed for capturing the welding dusts and gases and also fine dusts, directly at the emission source, in order to avoid expanding the impurities in the workspace and being inhaled by people.

The arms are manufactured in hanging and standing versions. The extraction arms can work independently with an extraction fan, or in a group of devices connected to the main ductwork with a central fan.

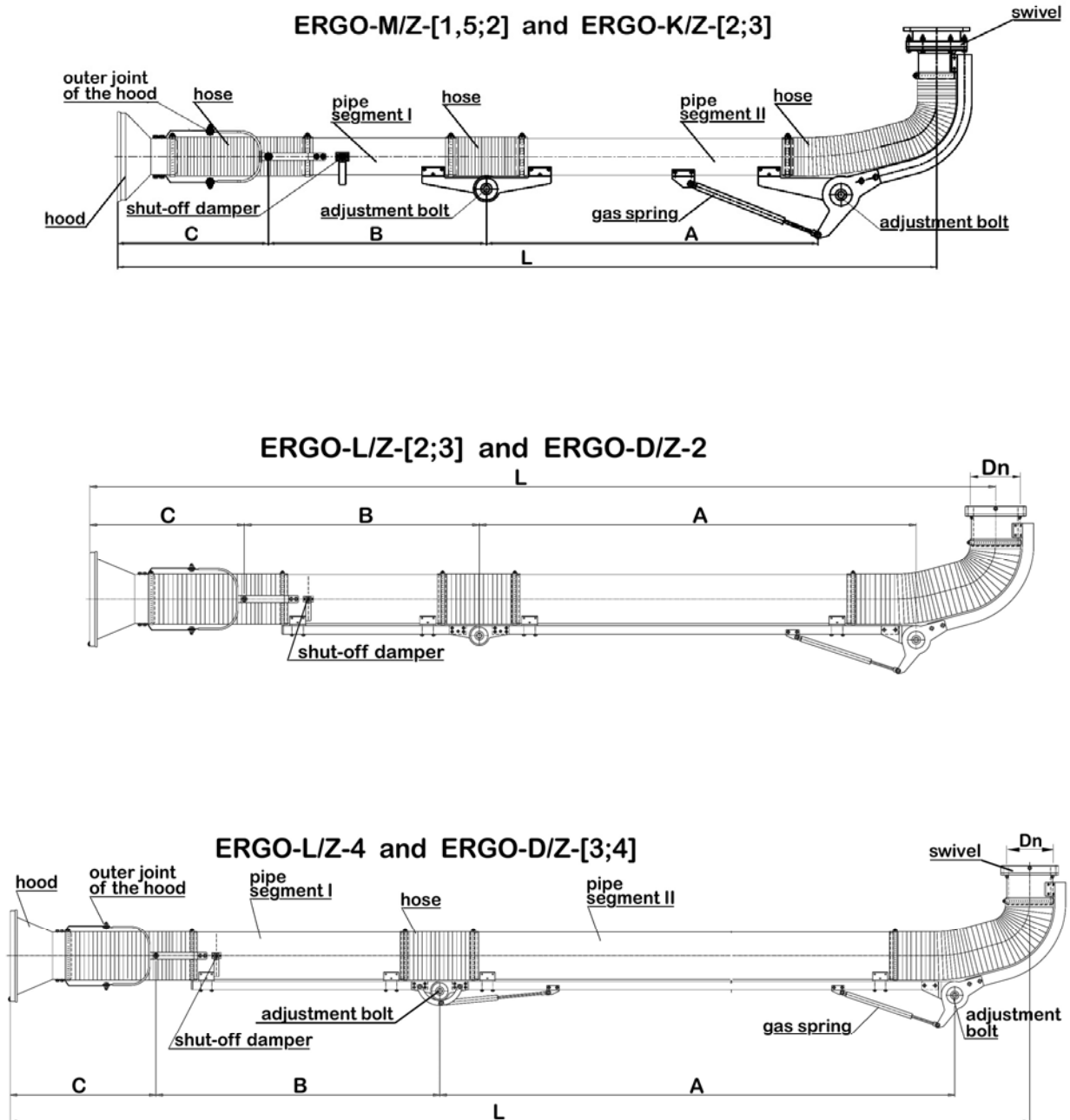
2. Technical Datasheets

Extraction arms are manufactured in different versions and sizes:

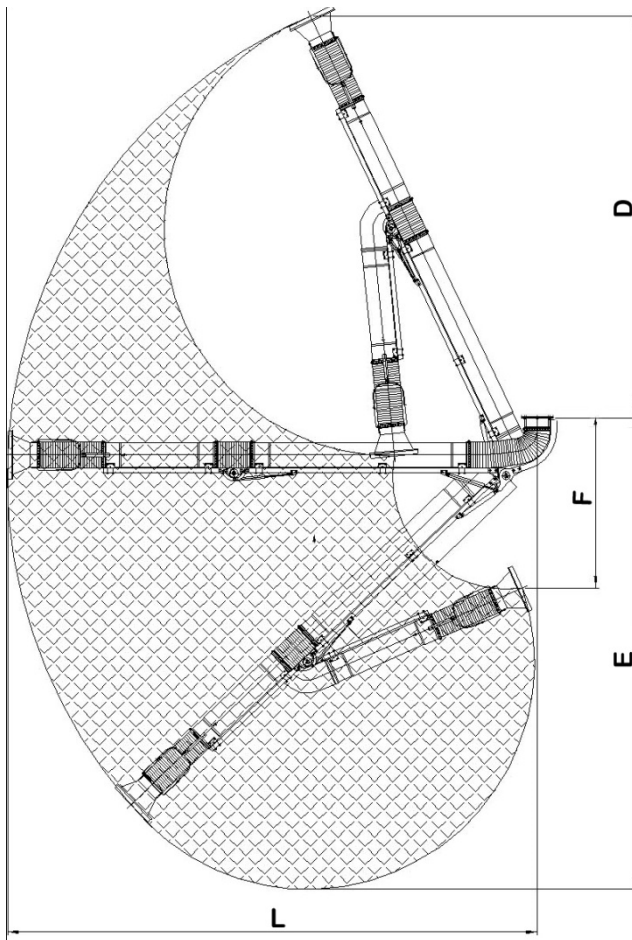
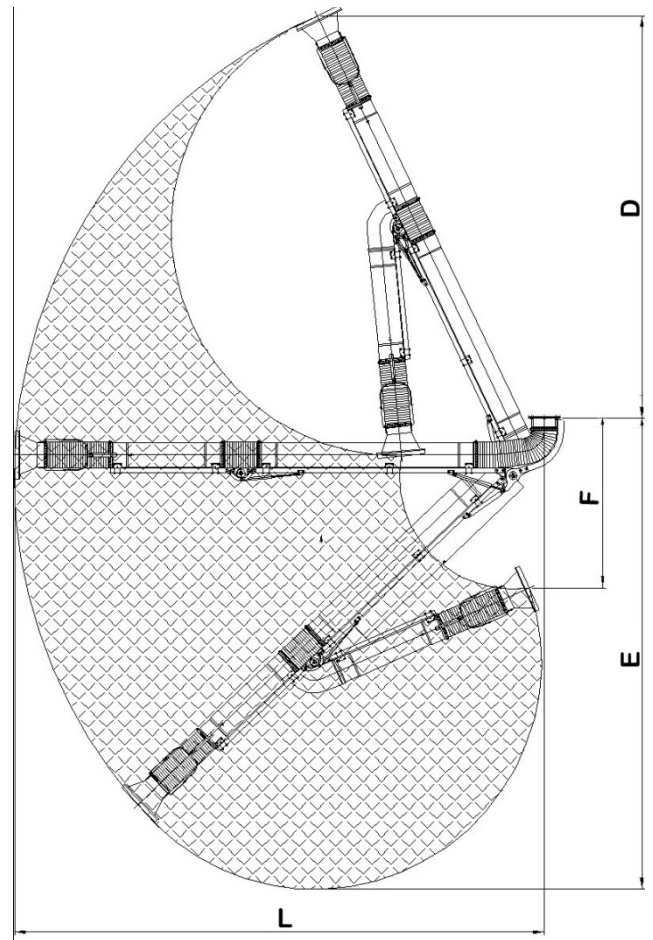
Table No.1

type	dimensions					weight [kg]
	Dn [mm]	L [mm]	A [mm]	B [mm]	C [mm]	
ERGO-M/Z-1,5	100	1773	673	472	409	10,1
ERGO-M/Z-2		2223	900	592		10,9
ERGO-K/Z-2	125	2287	1054	592	394	12,5
ERGO-K/Z-3		3032	1539	852		14,0
ERGO-L/Z-2	160	2306	907	582	540	17,0
ERGO-L/Z-3		3166	1527	822		19,5
ERGO-L/Z-4		3776	1907	1052		22,0
ERGO-L/Z-2	200	2286	907	579	543	19,0
ERGO-L/Z-3		3146	1527	819		22,5
ERGO-L/Z-4		3756	1907	1049		25,0

ERGO extraction arms in versions ERGO-LL/Z and ERGO-DL/Z are equipped with hoods with halogen spotlights. A connection diagram is enclosed with the *User's Manual* TR-ERGO (230V; 50Hz).

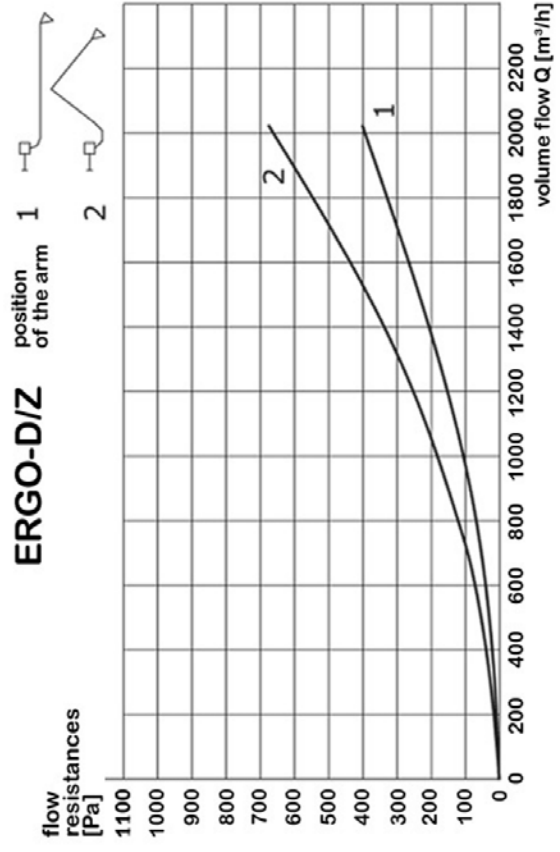
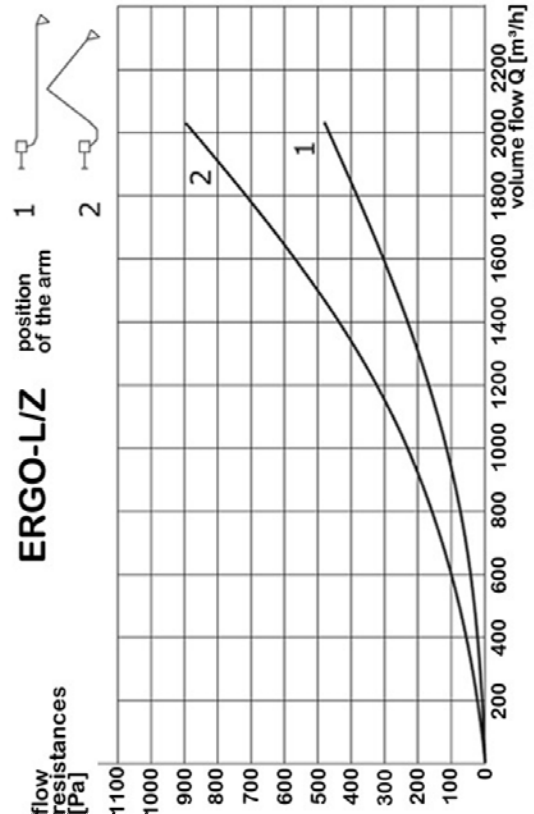
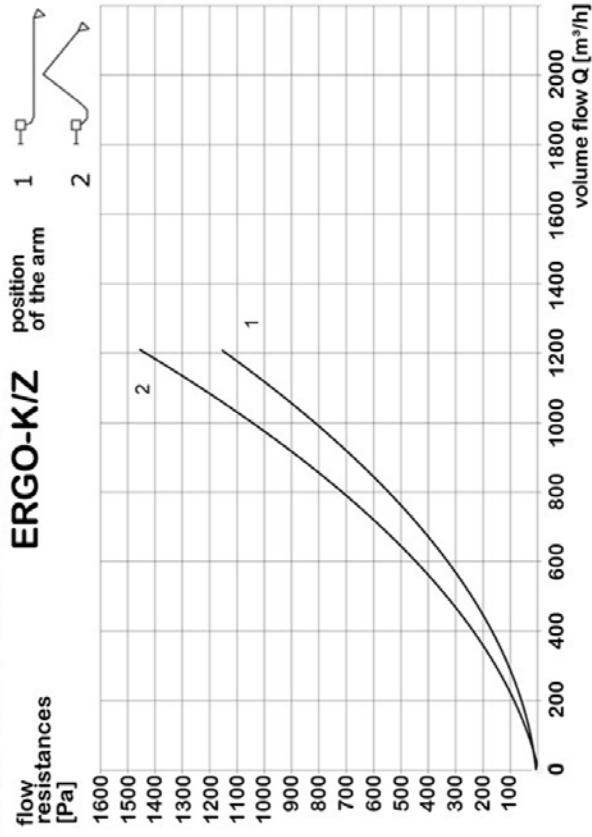
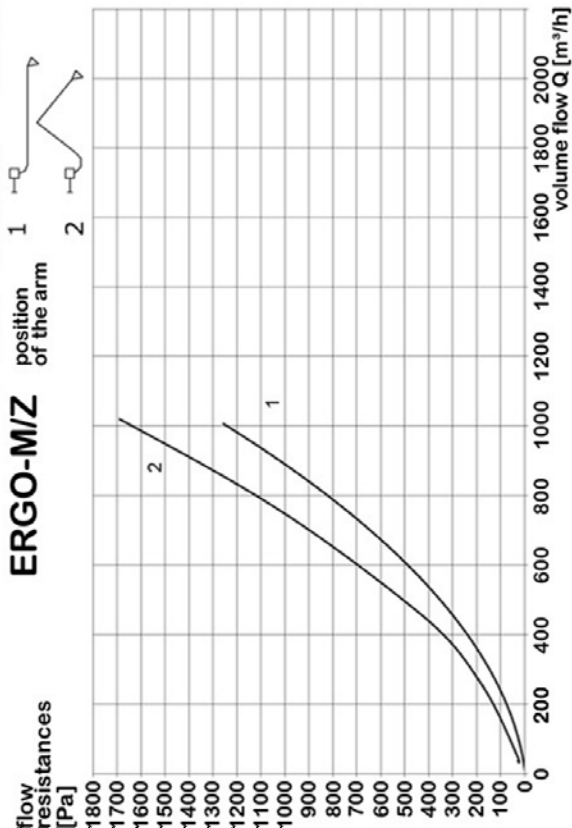


Dwg No.1 ERGO Extraction arms – dimension-conceptual drawings

Dwg No.2 Ranges of the extraction arms

**ERGO-M/Z-[1,5;2]
 ERGO-K/Z-[2;3]**

**ERGO-L/Z-[2;3;4]
 ERGO-D/Z-[2;3;4]**
Table No.2 Ranges of the extraction arms

type	D [mm]	E [mm]	F [mm]	L [mm]
ERGO-M/Z-1,5	1241	1596	590	1773
ERGO-M/Z-2	1556	2001	759	2223
ERGO-K/Z-2	1600	2058	761	2287
ERGO-K/Z-3	2122	2728	1009	3032
ERGO-L/Z-2	1664	2025	718	2306
ERGO-L/Z-3	2224	2745	984	3106
ERGO-L/Z-4	2694	3348	1207	3776
ERGO-D/Z-2	1650	2007	709	2286
ERGO-D/Z-3	2252	2781	997	3146
ERGO-D/Z-4	2679	3330	1200	3756

Flow charts – extraction arms ERGO-.../Z



3. Structure and Function

ERGO extraction arms are assembled with different elements presented in the Dwg No.1:

- swivel
- two pipe segments (“I” and “II”) connected together with frictional joints
- gas springs – to equilibrate the segment weights
- shut-off damper
- suction hood with wire mesh avoiding the burning rests and chippings from getting in.

The swivel guarantees a full rotation of the device around its vertical axis and therefore ensures an easy positioning in the requested point at the work station.

The swivel and the pipe segments integrated together with hose sections (flexible connectors) along with the attached hood form a **ventilation duct** to extract the dust laden air. This configuration can be changed within the work range of the given type of the extraction arm.

Additionally, the intake air volume can be adjusted by means of the shut-off damper (installed in the pipe segment “I”).

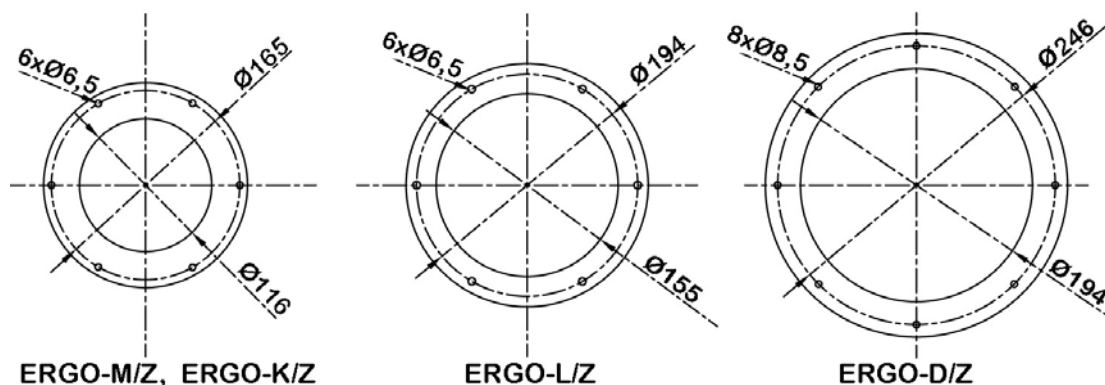
Adequately adjusted frictional joints in co-function with the gas springs ensure a comfortable manoeuvring of the extraction arm. The suction hood can be equipped with a halogen spotlight to light up the workspace.

In order to install the extraction arm on a wall or column use a wall bracket.

It can also be suspended at the end of the RO-type extension arm.

4. Assembly

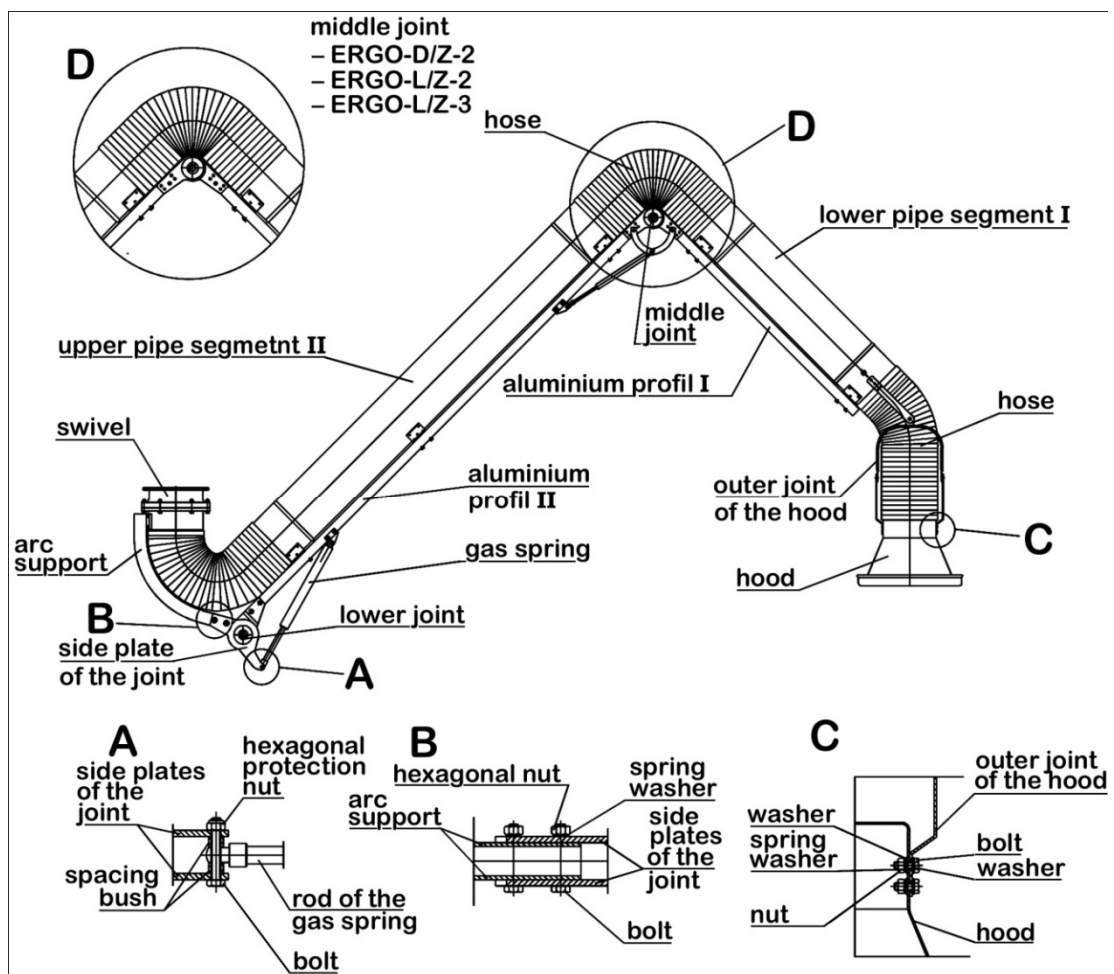
ERGO extraction arms are delivered partly assembled in cardboard Boxes. Before the extraction arm is installed in the workplace – it is important to completely assemble it according to the enclosed instruction. The diameter and placement of the mounting holes in the bracket and in the arm swivel are the same.

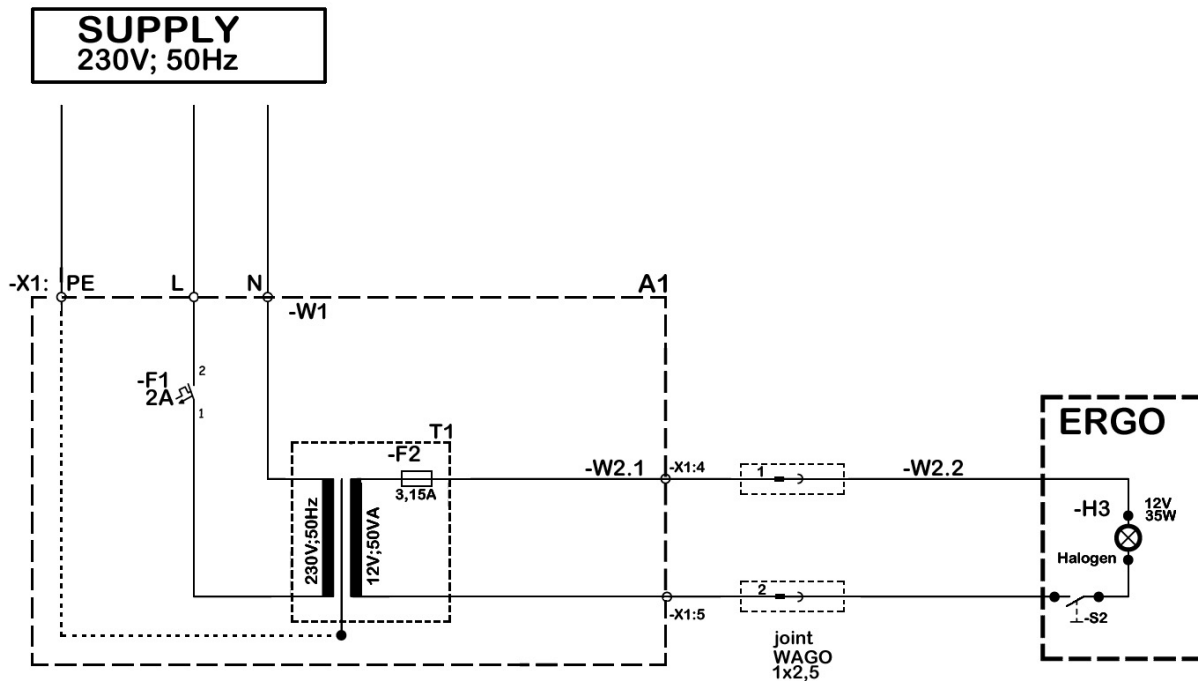


- | | | |
|----------------|--------------|-----------------------|
| • for ERGO-M/Z | (Dn Ø100 mm) | – 6 bolts M6x40 – 8,8 |
| • for ERGO-K/Z | (Dn Ø125 mm) | – 6 bolts M6x40 – 8,8 |
| • for ERGO-L/Z | (Dn Ø160 mm) | – 6 bolts M6x40 – 8,8 |
| • for ERGO-D/Z | (Dn Ø200 mm) | – 8 bolts M8x40 – 8,8 |

5. Installing the extraction arms – types ERGO-M/Z, ERGO-K/Z, ERGO-L/Z, ERGO-D/Z (hanging version)

1. Take out the ERGO extraction arm from the package and put it stably on an even surface.
2. Pull the arm segments apart until you obtain a 45° angle.
3. Bolt the swivel support to the plate of the lower joint (see detail “B”)
4. Fold in the loose fabric edge, at the end of the flexible hose – then sleeve the hose onto the swivel ferrule and secure it with a hose clamp.
5. Fasten the end of the gas spring with a screw to the plate of the lower joint — (see detail “A”).
6. Connect the **upper segment II** with the **lower segment I** using a flexible hose (following point 4).
7. Screw up the outer joint to the hood (see detail “C”).
8. Using a flexible hose, connect the **lower segment I** with the hood (following point 4).
9. The ERGO extraction arm is ready to be mounted on a wall bracket or onto a filtering unit.





Connection diagram – TR-ERGO		<h1>KLIMAWENT</h1>
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6. Start-up

How to start the device:

- Prior to work, start the extraction fan and make sure the ventilation discharge ductwork is functioning.
- Set the hood in the desired position: not more than 30 cm from the welding arc, and not less than 20 cm – as the welding chippings could affect the hood and additionally the hood suction could interrupt the protection gas shield (CO₂, argon). It is important that the hood is effectively capturing the fume and does not cause any obstacle to the user.
- Adjust the intake air volume with the damper lever to eliminate the dust / fume most efficiently.
- The position of the hood and the damper lever can be changed many times during the work, so the user can adjust them best to the current needs.
- After the work is completed – the extraction arm can be left in the open position (operational state), or if it causes an obstacle – set the arm in the folded position.
- Stop the extraction fan, if the device works in a ventilation system – close the appropriate shut-off damper.

7. Use

The construction guarantees a safe and reliable functioning without continuous servicing or special handling. The adjustment of the ERGO extraction arm consists mainly in the

adjustment of the frictional joints. The frictional brakes are placed in each joint of the extraction arm and their function is to ensure balance and self-supporting properties for an easy manoeuvring during the operation.

The adjustment of the frictional brakes is carried out by increasing or reducing the tension of the nuts upon the frictional elements.

The brake adjustment in the following joints ought to be set in such a way that it guarantees the stability and self-supporting ability of the extraction arm (which is important to keep the stable arm position), but it may not cause any excessive resistance while the user is changing the arm position. Having completed the adjustment, tighten-up the counter-nut.

The placement of the adjustment nuts is illustrated in the “ERGO Extraction Arms – Dimensional-conceptual Drawings” (Dwg. No1).

8. Trouble Shooting Guide

	problem	possible reason corrective action
1.	The extraction arm keeps falling.	Improperly adjusted frictional brake. Increase the tension on frictional disks by tightening the adjustment nuts.
2.	The extraction arm is always settling in the same position.	The rotation axis of the arm is not positioned vertically. Carry out the positioning of the mounting flange of the ERGO extraction arm to set the rotation axis vertically.
3.	Drop in the air suction rate along with increased noise level.	Improper impeller rotation sense of the extraction fan. Change the phase connection sequence (only 3-phase motor).

9. Maintenance and Repair

The maintenance is to be executed periodically :

- In order to obtain appropriate suction efficiency of the suction hood, clean its surface and the inlet wire-mesh grill from the deposited dusts and impurities.
- In case the extraction arm is no longer self-supporting – undertake the adjustment of its frictional brakes (see point 5).
- Lubricate the swivel every 3 months using solid grease (lubrication nipple is located in the swivel flange).
- After 1 operational year submit the device to a technical revision and repair or replace the faulty elements.
- Clean the internal surfaces of the extraction ducts from the deposited impurities

10. Safety

The ERGO extraction arms will not bring any risk under the condition they are firmly and correctly mounted to the wall or another structural element of the building.

WARNING Unsure installing could result in an uncontrolled detachment of the device and cause serious risk to personnel / people in the vicinity.

Once the work finished, you may leave the extraction arm in the open position. If it should constitute an obstacle to personnel, or become a hazard, set in into the close position.

Prior to installing check the load carrying capacity of the building structure.

11. Storage and Transport

ERGO extraction arms have to be stored and transported in partly disassembled state in special packages. The devices ought to be stored in a dry and well ventilated area. During the transport / reloading protect the device from scratches, indents and pay attention that the markings and labels do not get detached.

12. Reservations of Producer

- A. It is unacceptable to install on the structure of the unit any additional elements that don't belong to its normal construction or accessory set.
- B. It is inadmissible to install the ERGO extraction arm directly to the ventilation installation, as it is usually not constructed to carry such charges during the operational use of the device.
- C. Protect the flexible elements as well as the pipes of the suction duct from mechanical damage.
- D. Prior to installing check the load capacity of the wall or other building structure where the device shall be mounted.

13. Terms of Warranty

The period of warranty for the purchased device is indicated in the "Card of Warranty". The warranty does not comprise:

- Producer accepts no liability for any consequences following from the operation: use that is in contradiction to the purpose of application.
- Defects and damages arising during the incorrect use and in application that is inconsistent with the present manual,
- Mechanical and electrical damages being caused during improper storage and transport or incorrect maintenance,
- Structural modifications, or changes / adaptations introduced by the user on one's own, are not permitted.
- Inefficiency following from the normal operational exhaustion.

Infringement of the section 3 "**Reservations of producer**" of the *User's Manual* and especially modifications undertaken by the user on one's own shall cause the loss of warranty validity.

14. Spare parts

For spare parts please contact Formula Air Group.

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