

komfovent

AGRJ /
AGUJ

Air regulating
and shut-off
dampers



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Receiving, handling and pre-installing of the AGRJ/AGUJ air reaguating dampers and shut-off dampers

Check for damage when the dampers are received. If any damages are found, record all necessary information on the bill of lading and file a claim with the final carrier. Check to be sure that all parts of the shipment are accounted for.

To aid in completing the damper installation in a timely and efficient manner, please follow the preinstallation guidelines:

1. Read these instructions carefully. Failure to follow them could damage the damper or even cause a hazardous situation;
2. Check the installation and maintenance options given in these instructions and on the product to ensure the damper is suitable for your projected application type;
3. Please ensure installer is a trained and experienced HVAC service technician.

Locate and install dampers in an easily accessible location for further maintenance and checkout.

Pre-installation testing of the operation of the dampers is recommended: wire the actuator (for AGRJ-M and AGUJ-M dampers) per correct wiring diagrams, to ensure proper actuator and damper operation. During any operating, inspection or testing of control dampers, KOMFOVENT recommends the following:

1. Caution is advised when removing power from the damper's actuator. Actuators may have very strong internal springs that may slam closed causing an abrupt interruption of airflow. As this could cause damage to ductwork, consideration should be given to conducting these tests without system airflow.
2. When checking damper operation, be sure to keep fingers, hands and any other body parts out of the blade travel path to prevent injury.
3. Check proper actuator operation. If defective, contact for replacement procedures.

General information

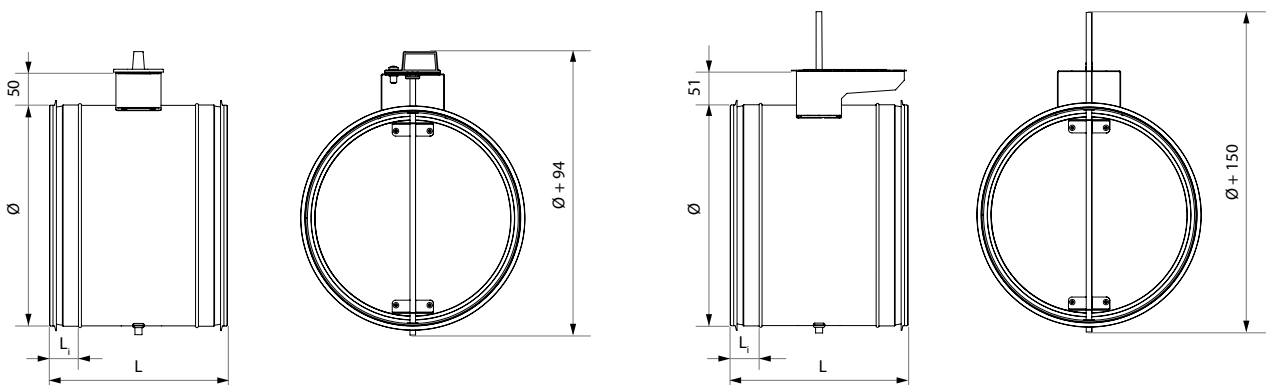
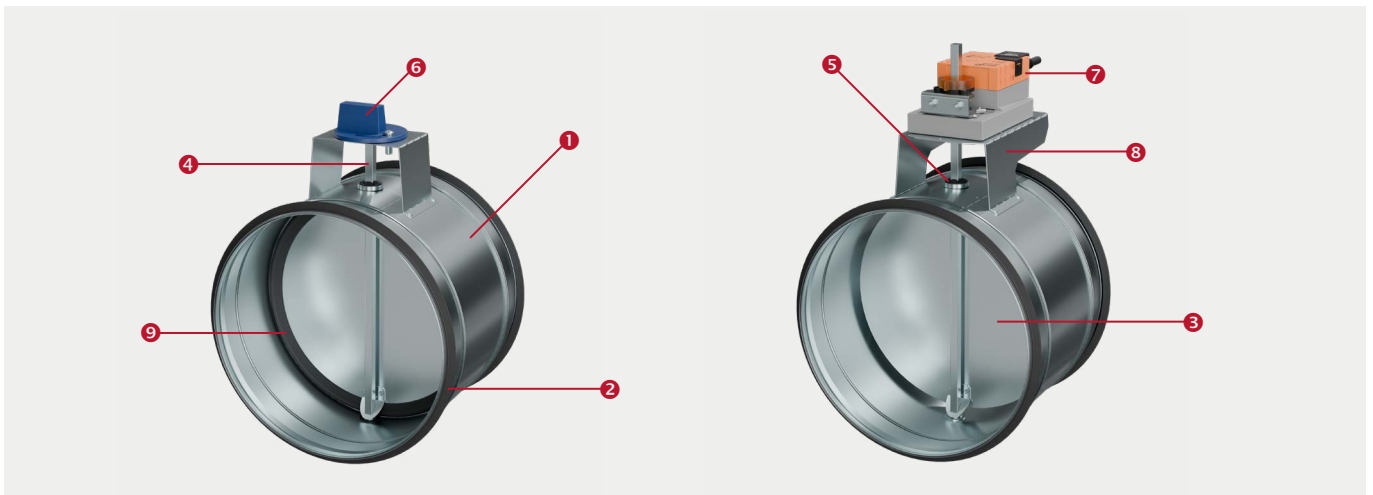
These installation instructions apply to AGRJ-M and AGUJ-M dampers of the opposed and parallel types most commonly installed in ductwork. The dampers are designed for operation in the vertical orientation with blade running horizontal or vertical or sloping position. It is important to note that control damper materials, sizes and applications vary widely.

DESIGN FEATURES

The AGRJ/AGUJ-R (manual regulating) and AGRJ/AGUJ-M (motorized regulating) regulating dampers are designed for the smooth control of the volume of airflow. Dampers are used in ducts, air conditioning units as well as in mixing chambers of air conditioning devices. The AGRJ/AGUJ dampers are designed to operate at temperatures ranging from 0 to 50 °C and at pressure differential of up to 2000 Pa and 80 % humidity. The maximum airflow velocity is 10 m/s. The design of AGRJ/AGUJ dampers enables their installation to the airduct using spigot connection.

Casing leakage class for AGUJ and AGRJ dampers is rated as C, blade leakage class (for shut-off AGUJ dampers) is rated as Class 3 in acc. with EN1751 standard requirements.

The air regulating dampers consist of circular casing [1] with two nipple connections [2]. The blade [3] is connected via rotation axle [4]. In the ends the blades are fitted with sealing rings [5]. The adjusting manual handle [6] or actuator [7] are installed on the mounting bracket [8]. AGUJ dampers are additionally equipped with blade sealing ring [9].

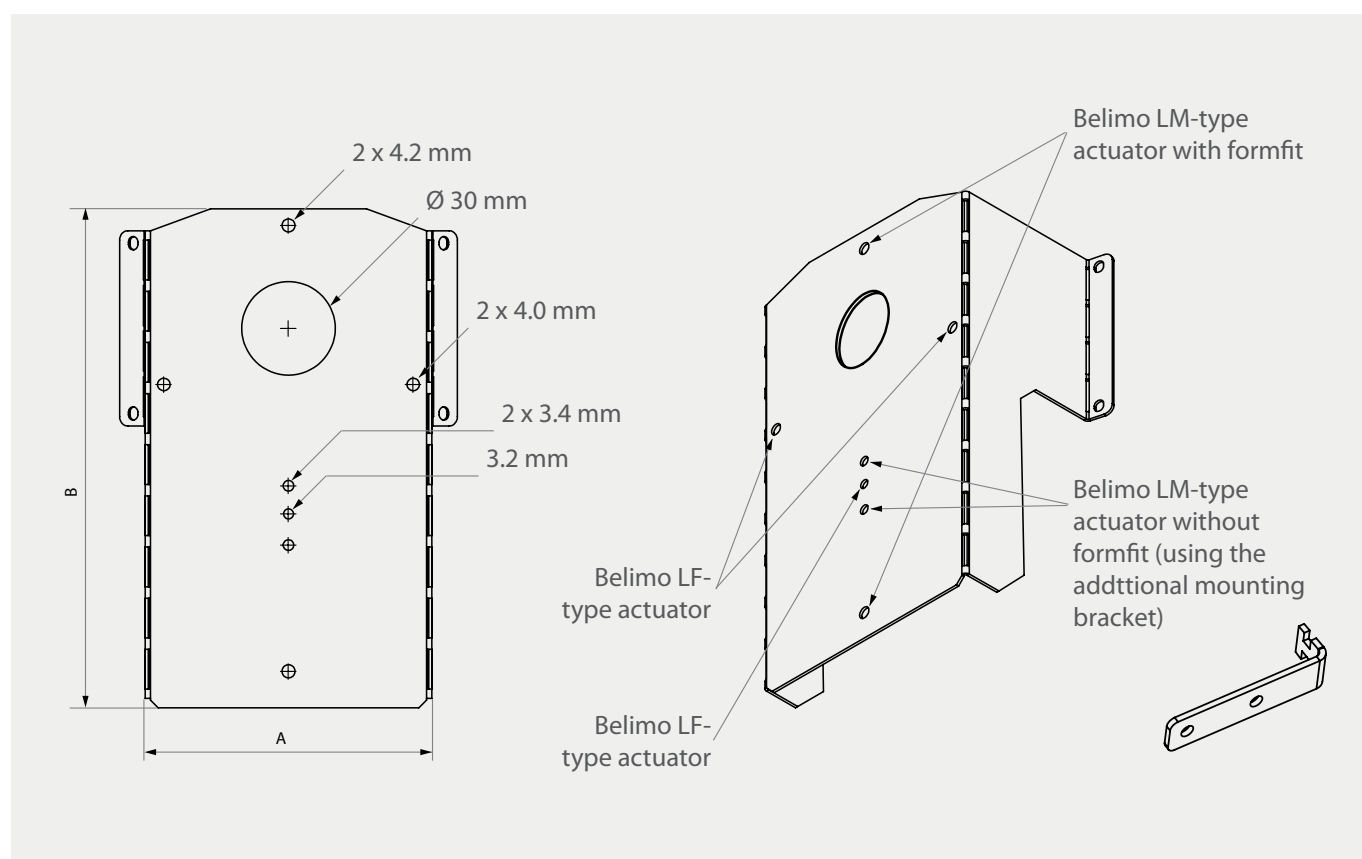


Main dimensions and weights for AGxJ dampers are shown in the table below.

Ø, mm	100	125	160	200	250	315	355	400	450	500	560	630	710	800	900	1000
Li, mm	40	40	40	40	40	40	40	65	65	65	65	65	65	65	100	100
L, mm	156	156	156	156	196	246	293	316	370	385	457	507	568	610	836	836
A, m²	0.008	0.012	0.020	0.031	0.048	0.077	0.098	0.124	0.158	0.195	0.245	0.310	0.394	0.500	0.633	0.782
m, kg	0.7	0.9	1.1	1.4	2.1	3.1	4.3	5.9	7.2	8.6	11.0	13.0	17.0	21.0	26.0	32.0

	AGUJ and AGRJ dampers		AGRJ dampers
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Actuator mounting bracket for the motorized version of the damper is designed to cover the most of the actuator model installations:



Ø, mm	100	125	160	200	250	315	355	400	450	500	560
A, mm	92	92	92	92	92	92	92	92	92	148	148
B, mm	160	160	160	160	160	160	160	160	160	160	160

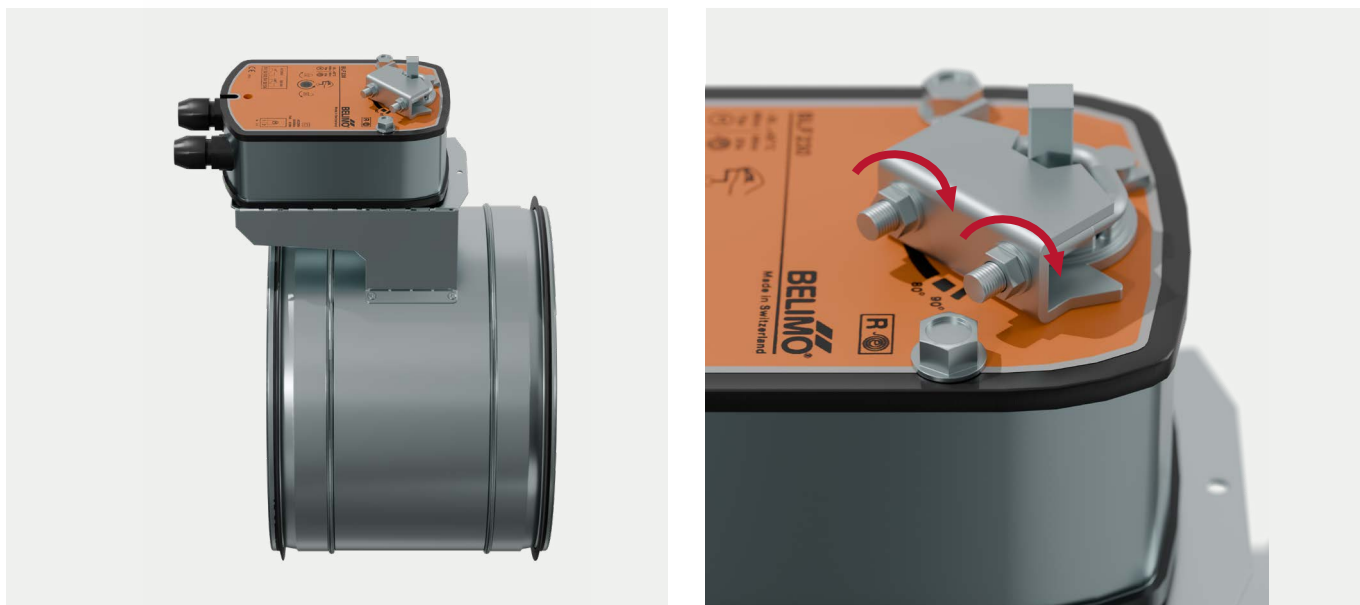
Actuators are installed using self-drilling screws, placing clamping element on the axle of the damper.

SHORT INSTRUCTIONS FOR ACTUATOR INSTALLATION ON THE EXAMPLE OF LF-TYPE ACTUATOR

1. Place the actuator on to the platform, aligning it to the position of the axle. Insert two 6.3×80 selfdrilling screws, preferable with flanged head (e.g. DIN7504K) to the installation holes located near to the axis and screw them in:

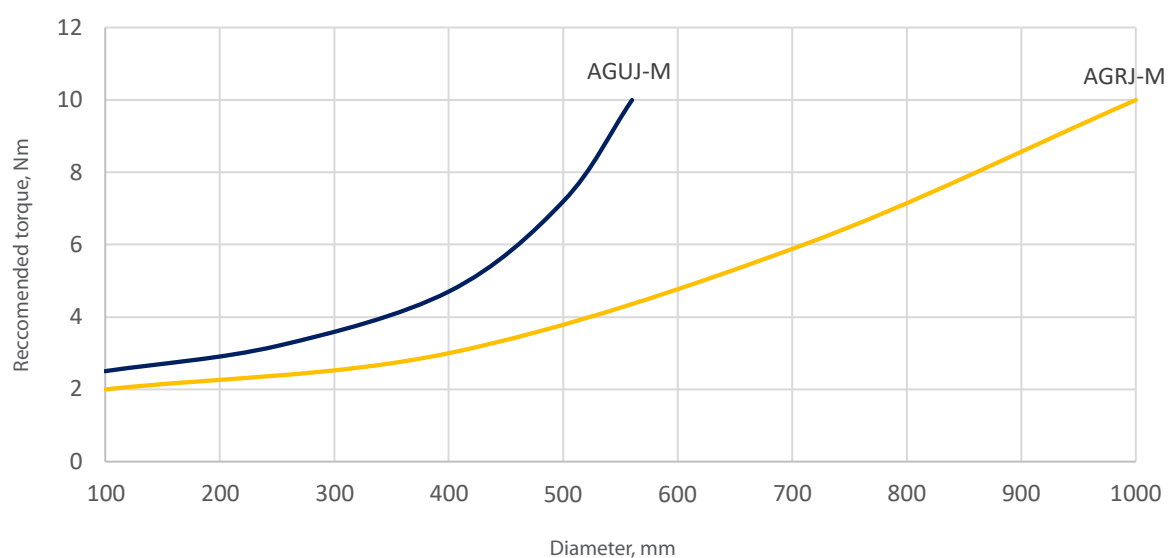


2. Tighten two nuts to lock the clammer tightly onto the axle:

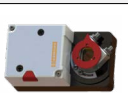


ACTUATOR TYPES AND OPTIONS

Type of the actuator is to be selected based on the required torque (Nm). Graph data shows the minimal required actuator torque data for specific dimension and type of the damper:

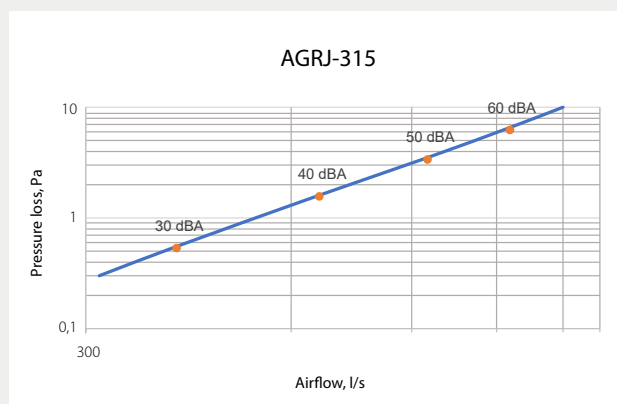
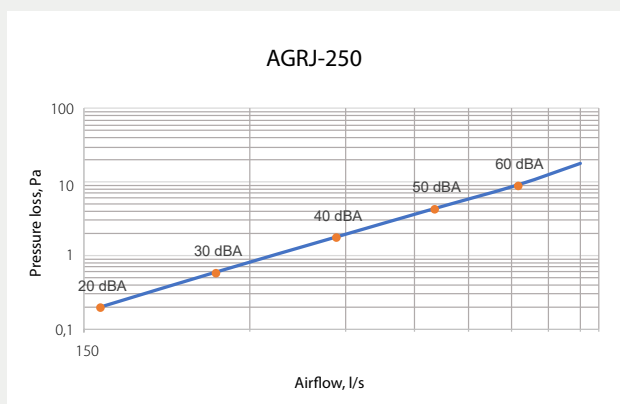
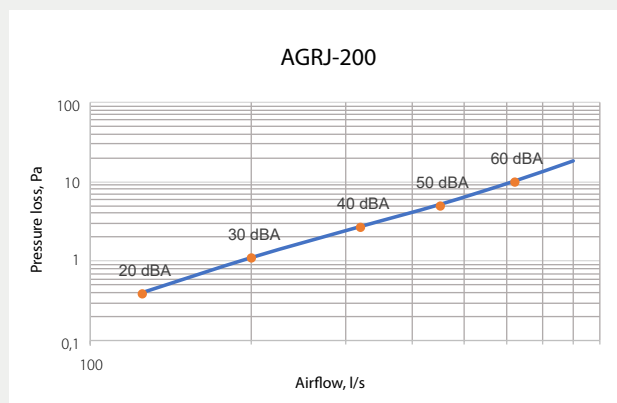
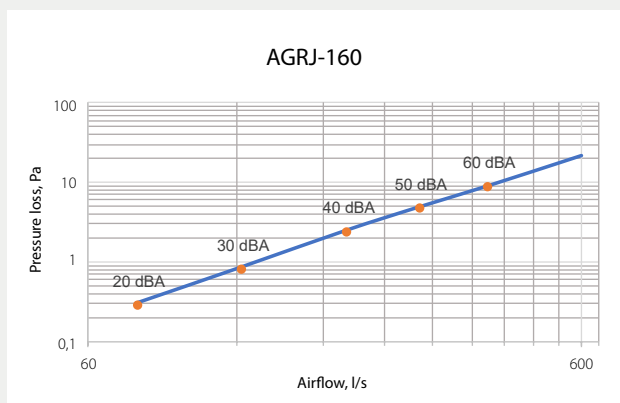
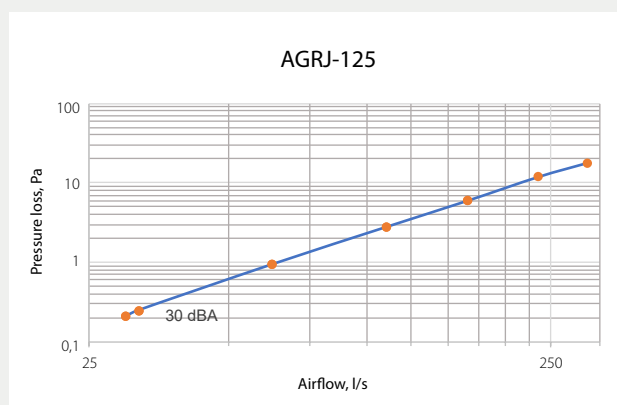
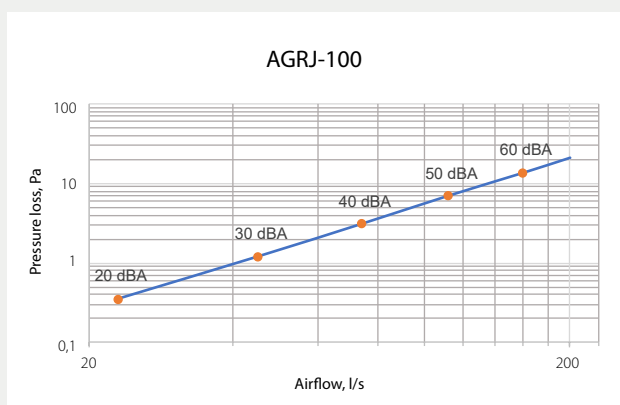


The variety of actuators can be used for installation on the AGxJ air regulating damper: Belimo, Gruner and Siemens:

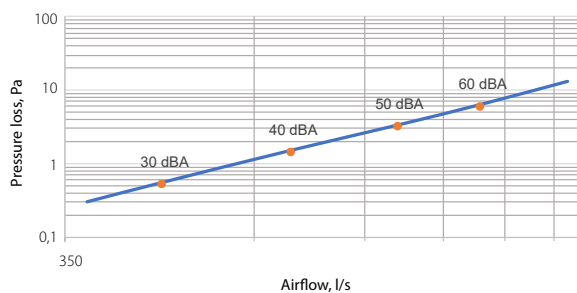
		Air damper size, m ²	Torque, Nm	Nominal voltage, V	Sound level, dB(A)	Running time	Weight, kg	Position accuracy	Angle of rotation
Belimo CM		0.4	2	AC 100 ... 240 V AC/DC 24 V	35	75 s / 90°	0.22	-	Endless or fixed at 315° / 0 ... 287.5
Belimo TF		0.5	2.5	AC 100...240 V AC/DC 24 V	50	150 s / 90°	0.78	±5%	max. 95°
Belimo NF		2	10	AC 230 V AC/DC 24 V	40	150 s / 90°	2.0	±5%	max. 95°
Belimo SF		4	20	AC 230 V AC/DC 24 V	45	75 s / 90°	2.1	-	max. 95°
Belimo LF		0.8	4	AC 230 V AC/DC 24 V	50	40...75 s / 90°	1.6	-	max. 95°
Belimo LM		1.0	5	AC 230 V AC 24 V	35	150 s / 90°	0.46	± 5%	max. 95°
Belimo NM		2.0	10	AC 230 V AC/DC 24 V	35	150 s / 90°	0.74	± 5%	max. 95°
Belimo SM		4.0	20	AC 230 V AC/DC 24 V	45	150 s / 90°	1.1	± 5%	max. 95°
Gruner 225		1.0	5	230 VAC/DC 24 VAC/DC	35	60...120 s / 90°	0.53	-	max. 95°
Gruner 227		1.6	8	230 VAC/DC 24 VAC/DC	35	60...120 s / 90°	0.53	-	max. 95°
Gruner 232		3.0	15	230 VAC/DC 24 VAC/DC	-	40...80 s / 90°	0.7	-	max. 95°
Siemens GDB		0.8	5	AC 24 V / AC 230 V	-	125...150 s / 90°	0.48	-	max. 95°
Siemens GMA		1.5	7	AC 24 V / AC 230 V	-	15...90 s / 90°	1.2	-	max. 95°
Siemens GEB		3.0	15	AC 24 V AC 230 V	-	125...150 s / 90°	1.0	-	max. 95°

PRESSURE LOSS DATA

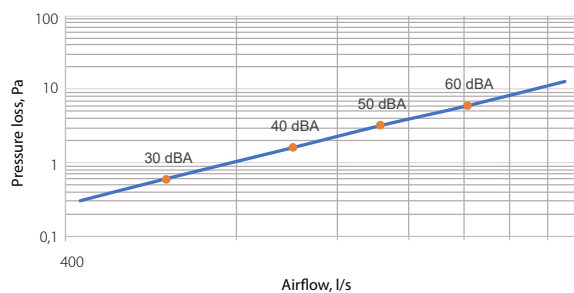
Pressure loss and sound power level data for regulating AGRJ dampers (for fully opened position of the blade):



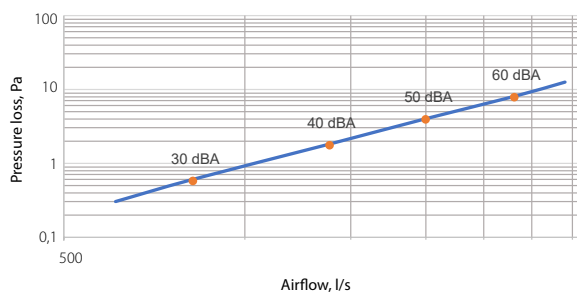
AGRJ-355



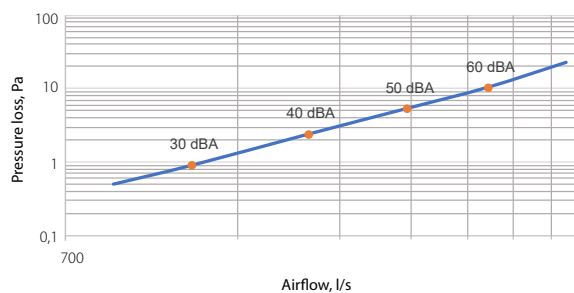
AGRJ-400



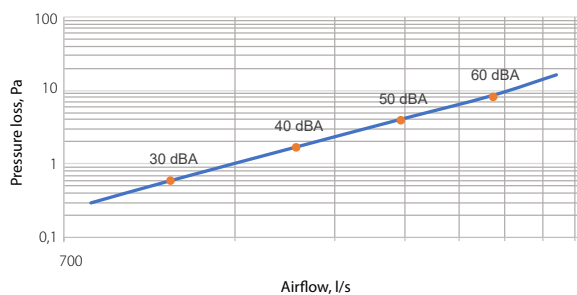
AGRJ-450



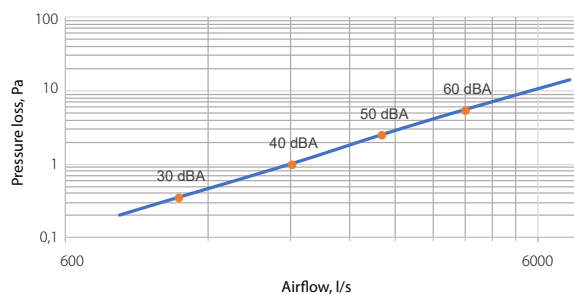
AGRJ-500



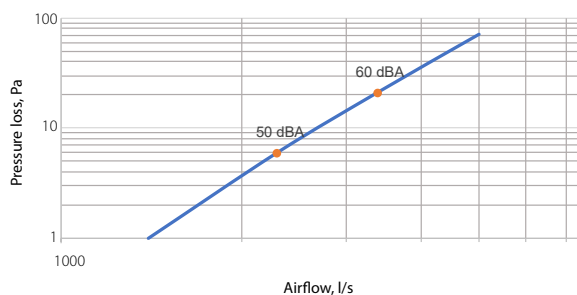
AGRJ-560



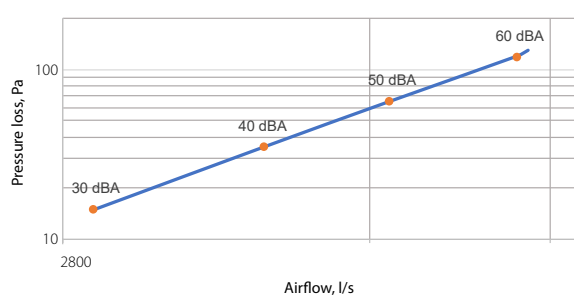
AGRJ-630



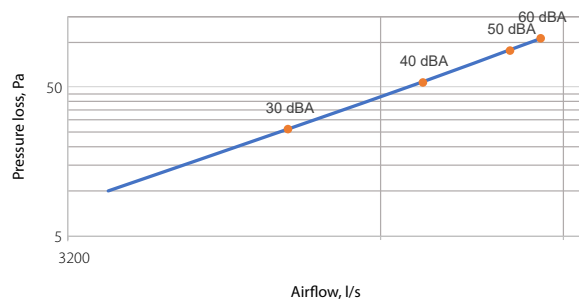
AGRJ-710



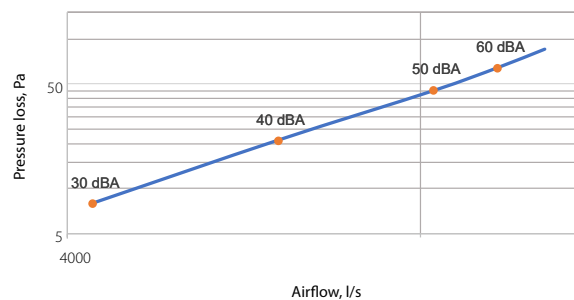
AGRJ-800



AGRJ-900

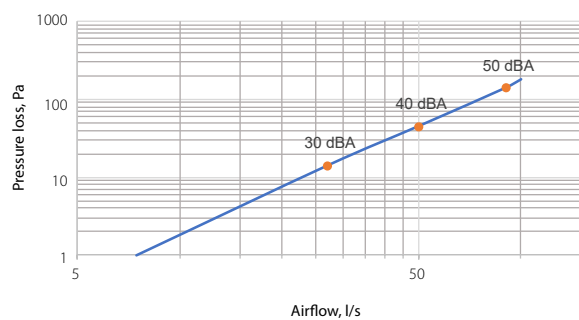


AGRJ-1000

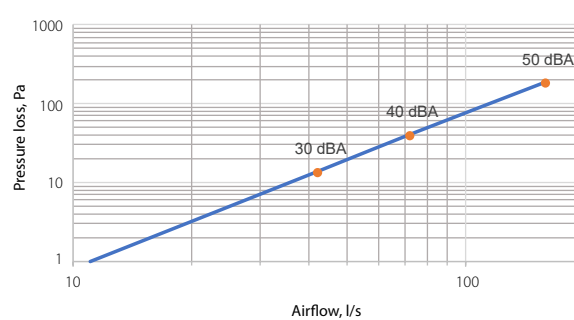


Pressure loss and sound power level data for regulating AGUJ dampers:

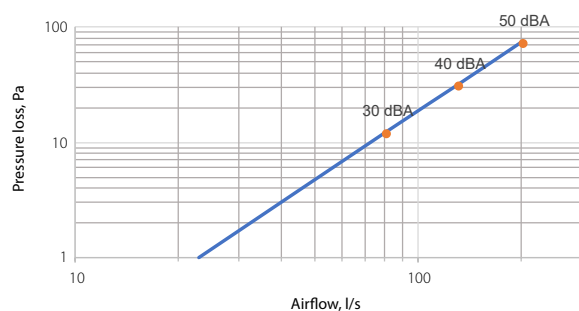
AGUJ-100



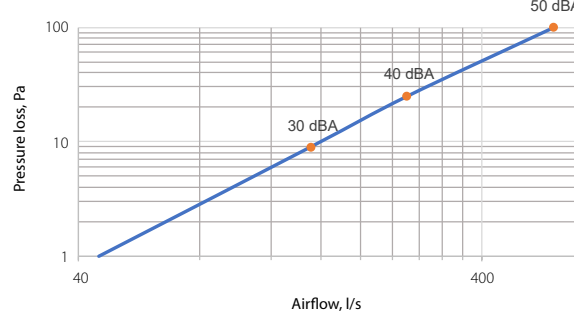
AGUJ-125



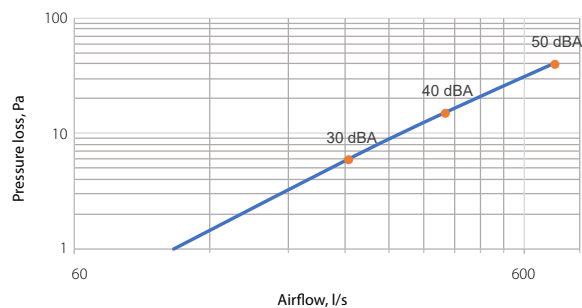
AGUJ-160



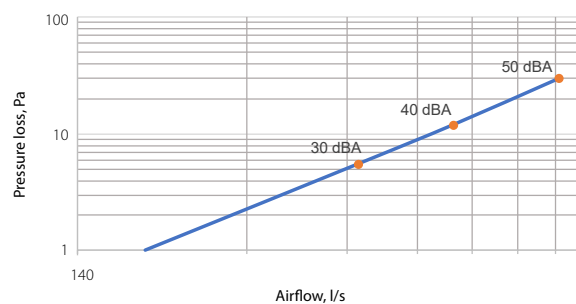
AGUJ-200



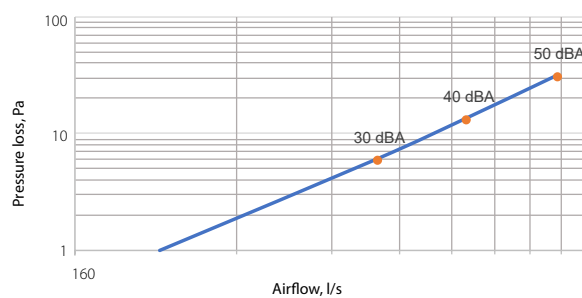
AGUJ-250



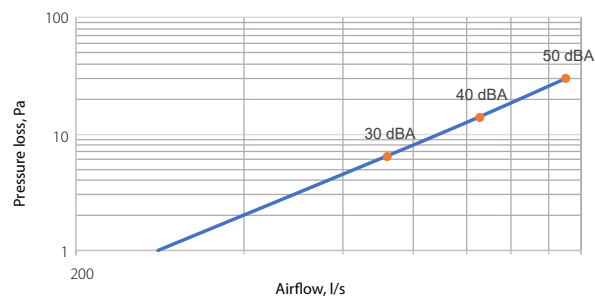
AGUJ-315



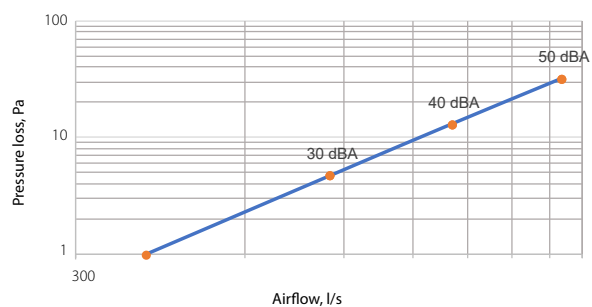
AGUJ-355



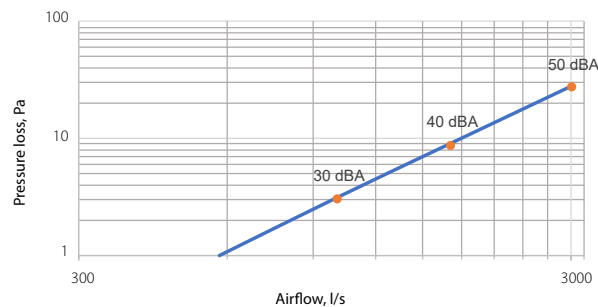
AGUJ-400



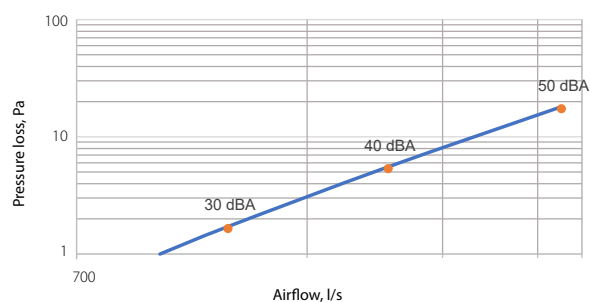
AGUJ-450



AGUJ-500



AGUJ-560



General requirements for safety

WARNING! Danger of serious damage to health and risk of damage to property due to incorrect use!

It is forbidden to modify the actuator or replace any unit part. Only original replacement parts submitted by Komfovent are allowed to be used. Qualified staff only are allowed to replace parts or service the air damper:

1. Sharp edges may cause serious injury from cuts. Use care when cutting openings and handling duct work.
2. A zone control system may not control temperature properly unless the HVAC system is correctly sized and balanced.
3. Install dampers in supply ducts only, and as close to the heating and cooling equipment as possible.
4. Do not force damper blades closed by hand, as damage may occur.



Incorrect use of the electrical component could result in the creation of a dangerous situations.

Never use the actuating device:

- in explosion protected junctions;
- in any aircrafts;
- unless efficient protection against weather conditions not assured;
- in wet conditions (swimming pools, bathrooms, boats).

Personal protective equipment must be worn for such types of work: air damper electrical installation, air damper mechanical connection to the air duct system (ductwork) and any type of service or maintenance works.



Protective gloves must be worn

Protective gloves protect hands against abrasion, oily environment, sharp metal parts and contact with hot surfaces.



Protective industrial helmet must be worn

Industrial helmets protect the head against impact from objects falling from above, by resisting and deflecting blows to the head.



Protective boots must be worn

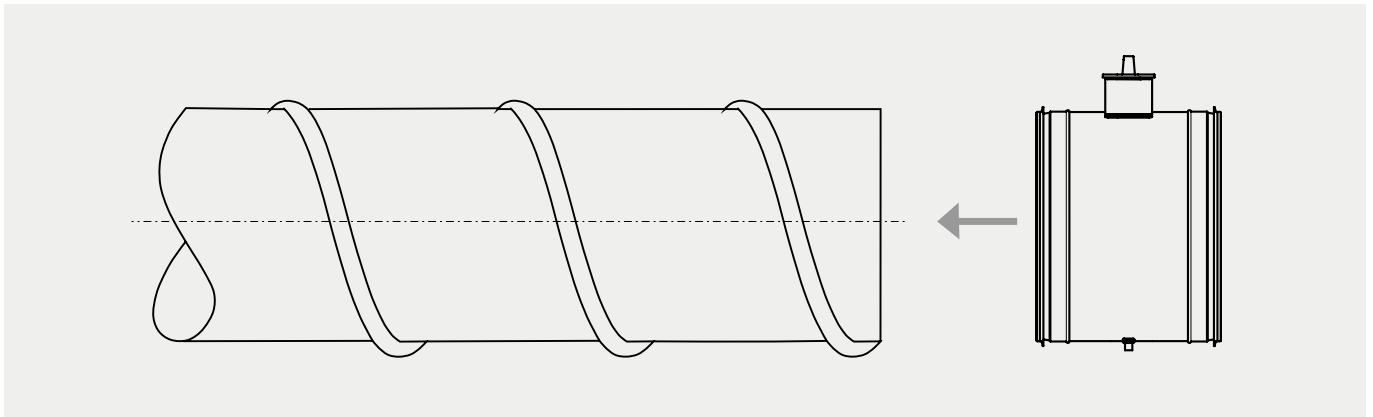
Protective boots protect the foot from falling objects or compression and prevent slipping on a slippery floor.



1. The actuator must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
2. It may only be installed by suitably trained personnel. Any legal regulations or regulations issued by authorities must be observed during installation.
3. The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
4. The cable must not be removed from the device.
5. When calculating the required torque, the specifications supplied by the damper manufacturers (cross-section, design, installation site), and the air flow conditions must be observed.
6. The device contains electrical and electronic components and is not permitted to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

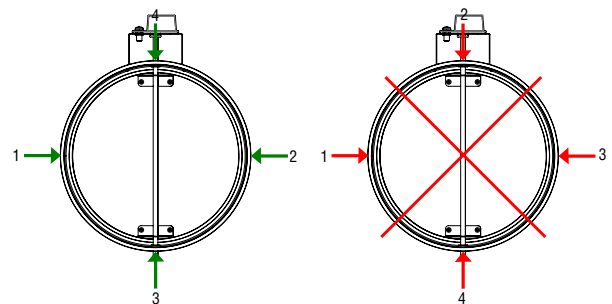
Installation procedure

The AGxJ dampers are used in-line with the airduct and can be installed on a take-off or in-line at any point in the duct. It is recommended the damper be installed as close to the air handler as practical. Make sure the airducts used for assembly are clean, without emulsion residues, have smooth edges and surfaces.



1. Insert the damper to the appropriate diameter of the airduct up to the formed groove on the casing of the damper.

2. Use an appropriate fastening (see below) to fasten the damper in place: order of the fastening installation is opposite (not one after another) to ensure the pulling is even throughout the entire circumference:



3. Recommended distance from the duct edge to the fastening is 15 mm in order not to damage the sealing gasket. Number of the fastening elements used for fixation of the damper depends on its diameter: for dampers up to 250 mm 4 fastening elements should be used, up to 500 mm – 6, up to 800 mm – 10 and up to 1250 mm – 12. Length of the fastening is selected in a way not to block the opening of the blade.

4. Type of the fastenings is selected depending on the common approach or specifically to the construction project. The required leakage class for the airduct system should also be taken into account: casings of the dampers are classified with leakage class C and to provide the same air tightness level the following fastenings are recommended for use:



◀ Self-drilling screw (type DIN7504) with sealing nylon washer, available in Head types: pan, flat, round, oval, truss, hex, socket, button.



◀ Tapping self-drilling screw with collar (type DIN 968), available in Head types: Phillips, square, pozidriv.



◀ Pan head blind steel/steel rivet (type DIN 7337)

5. When using flexible airducts, slip the duct over end of the casing of the damper casing and secure with duct straps (not provided).

Maintenance procedures

RECOMMENDED MAINTENANCE PROCEDURES ARE DESCRIBED BELOW:

1. **Regular Inspection:** Conduct routine inspections to check for wear, damage, or corrosion in both the damper blades and housing. Inspect for any signs of misalignment or obstructions that could hinder proper operation. Frequency of the inspections depends on the degree of pollution of the system, specifics of the building (e.g., hospital, laboratory, industrial kitchen, woodworking) and is determined by project owner.
2. **Cleaning:** Keep the dampers free from dust, debris, and other particles that could impede movement. Use a soft brush or cloth to clean the blades and housing. Pay extra attention to actuator-driven dampers to ensure cleanliness around the actuator and electrical/pneumatic connections.
3. **Lubrication (AGxJ-R dampers):** For manual dampers, apply the lubricant to the pivot points to ensure smooth operation. Check for excessive friction or stiffness in movement.
4. **Actuator Inspection (AGxJ-M dampers):** Inspect the actuator for signs of wear, or electrical issues. Verify that electrical connections are secure and free from corrosion. Check for proper response to control signals.
5. **Tighten and Adjust:** Check and tighten any loose screws, bolts, or fasteners. Ensure that manual damper handles or levers are firmly attached and functioning properly.
6. **Functionality Test:** Test the opening and closing mechanisms of both manual and actuator-driven dampers to ensure they operate smoothly without resistance or unusual noises. For actuator-driven dampers, simulate control signals to verify the response and movement accuracy.
7. **Replace Damaged Parts:** Promptly replace any damaged components, such as worn-out sealing materials or malfunctioning actuators.
8. **Seal and Gasket Inspection:** Check the seals and gaskets around the damper to ensure they are intact and effectively prevent air leakage. Replace any damaged seals to maintain proper sealing.
9. **Documentation:** Keep records of maintenance activities, including inspection dates, repairs, replacements, and any adjustments made.

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