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Camposampiero, 21.11.2023

INSTRUCTIONS FOR FIXING AND REMOVING FAN-WHEELS

1- FAN WHEEL HANDLING
2- FAN WHEEL FIXING
3- FAN WHEEL REMOVAL

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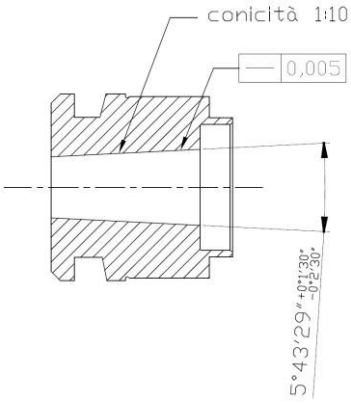
1- FAN WHEEL HANDLING

- **FAN-WHEEL HANDLING INSTRUCTIONS**

A fan-wheel is a very delicate object which, if handled incorrectly, may lose some of its features. To prevent this the fan-wheel has to be taken by its hub. Proceeding in this way we will avoid that it loses its balancing or gets deformed.

- **TUTORIAL HOW TO FIX AND EXTRACT A FAN WHEEL**

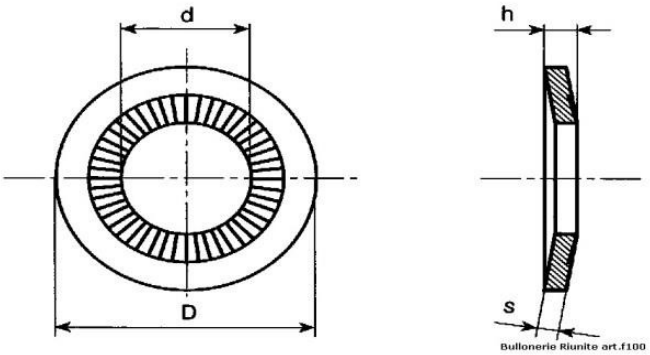
- **Technical description:**



Shaft: 5°43’29” +/- 1’44”
Roughness: 0,8 µm

Hub: 5°43’29” +1’30”/-2’30”
Roughness: 0,8 - 1,6 µm
Hub AISI 304

- **Toothed washer UNI 7065 material A2 (please see the picture below)**



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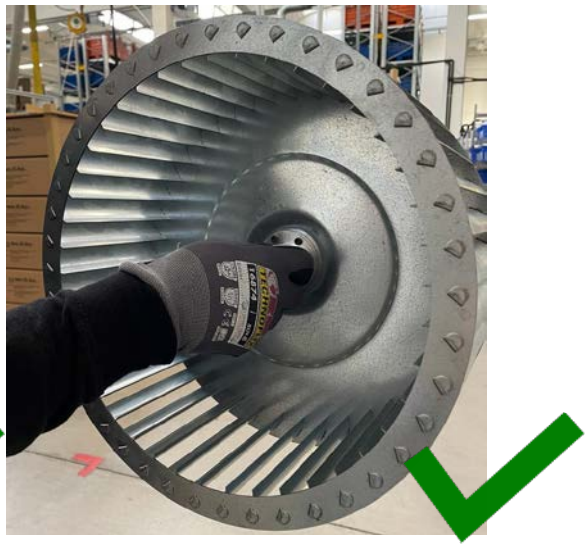
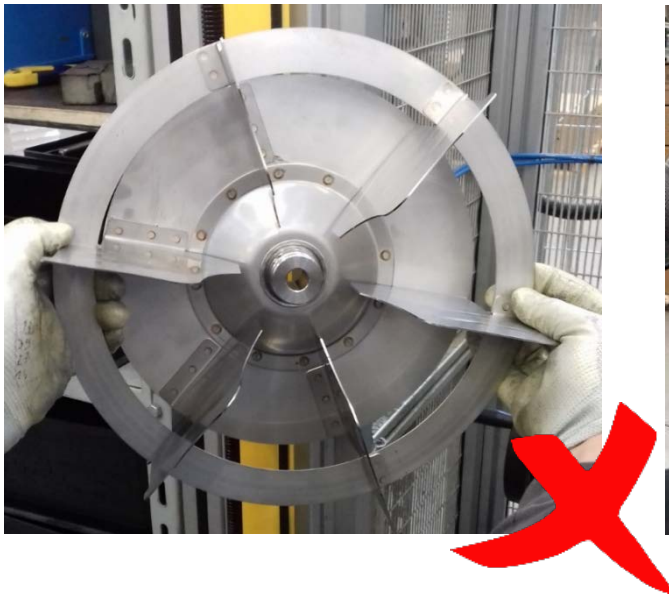
2- FAN WHEEL FIXING

➢ **Tutorial to assembly the fan wheel inside an oven**

As shown in the picture below, it is important to handle the fan from the hub side



As you can see in the following picture, this wrong grip may cause deformation inconveniences during the assembly phase if the coupling hub-shaft results difficult



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➢ **Fixing tutorial:**

Use a torque wrench to fix the bolt.
The torque wrench range must be the correct one to fix the screw, set the proper tightening torque strength indicated in the screw technical description.
Considering that fixing a bolt without enough strength is a problem, but fixing the bolt with too much strength, therefore risking to extend the screw crests, may be even worse.
It is suggested to give an extra fixing to the bolt after an oven warming-up period at 80-90°C/176-194°F.

Standard screw torque available are:

INOX A2

- M5 = 5,7 Nm = 4,2 ft/lb
- M6 = 10 Nm = 7,4 ft/lb
- M8 = 24 Nm = 17,7 ft/lb
- M10 = 47 Nm = 34,6 ft/lb
- M12 = 82 Nm = 60,5 ft/lb

SCREW GRADE 8.8

- M5 = 6,4 Nm = 4,7ft/lb
- M6 = 11,1 Nm = 8,2ft/lb
- M8 = 27 Nm = 19,9ft/lb
- M10 = 53 Nm = 39ft/lb
- M12 = 92 Nm = 67,8ft/lb

It is highly recommended that you contact your motor/screw supplier in order to have confirmation of thr above appropriate tightening values between the motor/screw components to avoid any possible inconvenience.

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3-FAN WHEEL REMOVAL

➢ **Tutorial for fan wheel removal:**

Prepare the puller ready to use.
Heat the hub and the shaft with thermal gun (please see the picture below), do not use direct flames.

After the warming-up, inject air or cold water on the shaft thread. This will cause a faster narrowing compared to the fan wheel hub, still warm, and i twill make the removal easier. If you do not have an air compressor you can use a water sprayer for cool down the shaft. As last step, use the puller to pull out the fan wheel, after the heating and cooling process it will be way easier. If the fan wheel should oppose further resistance please repeat the process.

➢ **Puller use:**

In order to be able to use the puller, you first need to remove any component that could create any trouble to the puller insertion (ex. nebulizer); once done, you need to slightly unscrew the screw that fixes the fan wheel to the motor shaft as shown in one of the pictures here below. Then you can affix the puller to separate the fan wheel form the motor shaft and put in traction the system to disassemble the fan wheel from the shaft.