

## TROUBLESHOOTING

DEFECTS	CAUSES	POSSIBLE REMEDIES
Insufficient air delivery. 1	<ul style="list-style-type: none"> <li>- Clogged piping and/ or obstructed suction points.</li> <li>- Insufficient rotational speed.</li> <li>- Working pressure higher than design.</li> <li>- Clogged wheel.</li> <li>- Reversed rotation direction.</li> <li>- Overloaded filter.</li> <li>- Suction vorticity in the same rotation direction as the wheel.</li> <li>- Changes in section, sharp and close. Sudden expansions or curves not allowing the normal reset of the inlet dynamic pressure.</li> </ul>	<ul style="list-style-type: none"> <li>- Clean pipings and hoods; check the position of locks.</li> <li>- Check the power voltage and the connection of motor terminals; check the gear ratio and that belts do not slip.</li> <li>- Design error. Replace motor and pulleys; replace and/or adapt the circuit.</li> <li>- Clean the wheel through the special door when the machine is stopped.</li> <li>- Check the connection of windings on motor terminal board.</li> <li>- Increase the operating frequency of the automatic cleaning device (where foreseen) or operate manually.</li> <li>- Fit an anti-turbulence device (straightening blades).</li> <li>- Check the layout of the air circuit.</li> </ul>
Difficult starting. 2	<ul style="list-style-type: none"> <li>- Excessive power absorption.</li> <li>- Reduced power voltage.</li> <li>- Insufficient motor pickup torque.</li> <li>- Fuses not suitable for actual needs.</li> <li>- Inadequate evaluation of the fan inertia and of the fining components.</li> </ul>	<ul style="list-style-type: none"> <li>- Like above.</li> <li>- Check the motor plate data.</li> <li>- Replace with a more powerful motor or, for radial fans, close the locks until reaching full speed.</li> <li>- Replace them.</li> <li>- Recalculate the moments of inertia and, if necessary, equip the fan with a new motor drive.</li> </ul>
Insufficient pressure. 3	<ul style="list-style-type: none"> <li>- Too much low rotational speed.</li> <li>- Capacity higher than design values because of an error in the circuit dimensioning or of air temperature significantly different from the 15°C reference value.</li> <li>- Reversed rotation direction.</li> <li>- Wheel partially blocked and/or damaged.</li> </ul>	<ul style="list-style-type: none"> <li>- Like above.</li> <li>- Change the gear ratio and/or replace the fan, redimension the circuit.</li> <li>- Like above.</li> <li>- Check the wheel assembly position, conditions.</li> </ul>
Excessive air capacity. (If rotational speed is correct, high absorption for radial fans with curved blades forwards). 4	<ul style="list-style-type: none"> <li>- Rotational speed.</li> <li>- Air leaks through access doors, pipings, wrong-manufactured or wrong-installed components, or by-pass locks not closed properly.</li> <li>- Excessive evaluation of circuit power losses.</li> </ul>	<ul style="list-style-type: none"> <li>- Check the rotation direction; the particular conditions of suction turbulence; rotational speed in the a.c. motor; power voltage and winding faults.</li> <li>- Check the system and replace the non complying components.</li> <li>- Close the locks or slow the speed down the desired performance.</li> </ul>
Vibrations. 5	<ul style="list-style-type: none"> <li>- Inadequate support structure (natural frequency close to the one corresponding to the fan rotational speed).</li> </ul>	<ul style="list-style-type: none"> <li>- Alter the support adding some weight.</li> </ul>
Absorbed power higher than plate data. 6	<ul style="list-style-type: none"> <li>- High rotational speed so to require a higher power than the installed one.</li> <li>- Air density higher than design data.</li> <li>- Capacity higher than design levels for a pressure lower than design value.</li> </ul>	<ul style="list-style-type: none"> <li>- Replace motor and pulleys and/or redefine the system.</li> <li>- Like above.</li> <li>- Like above.</li> </ul>
Excessive noise. 7	<ul style="list-style-type: none"> <li>- High number of revolutions to get the required performance.</li> <li>- Failure in bearings.</li> <li>- Wheel unbalance and its sliding on the box.</li> <li>- Eccentricity between rotor and stator.</li> <li>- Vibrations in the winding.</li> </ul>	<ul style="list-style-type: none"> <li>- Use soundproof boxes and/or silencers; choose a bigger machine with the same performances or a machine with lower rim speed.</li> <li>- Check the wear of bearings (in particular the proof ones) and lubrication.</li> <li>- Check the assembly positions of wheel and pipings.</li> <li>- Check the concentricity.</li> <li>- Can be reduced with higher quality motors.</li> </ul>
Air pulsations. 8	<ul style="list-style-type: none"> <li>- Centrifugal fans operating under conditions of zero capacity.</li> <li>- Instability of the suction flow with presence of vortex.</li> <li>- Detachment of the fluid vein from the back of the blade or the walls of a pipe.</li> </ul>	<ul style="list-style-type: none"> <li>- Like above.</li> <li>- Redefine the inlet by the introduction of flaps.</li> <li>- Redefine the system and/or replace the fan.</li> </ul>