4425 Burners are designed specifically for higher temperature operations such as forge furnaces, ceramic kilns, metal and glass melters, heat treat furnaces, etc. They are the high temperature version of Fives North American’s 4422 Fire•All™ Burner, one of the most widely used industrial burners in the world.

4425’s are particularly appropriate for applications that run at both high and low temperatures—an example is a batch type kiln in which early parts of the cycle run below 1200 F and require free oxygen in kiln atmosphere for raw material to process properly; then frequently the product must "soak" at temperatures above 2000 F. 4425 Burners handle this duty with ease due to their excess air flexibility and their construction that withstands radiant heat.

CONSTRUCTION

Metal parts are shielded by refractory: the tile and an insulating refractory "biscuit" covering face of burner. Mounting plate and burner body are made of heat resistant cast iron. Air tubes are high grade alloy.

In furnace chambers above 2000 F, combustion air should not be turned down below 2 osi (with or without gas on).

LIGHTING AND FLAME SUPERVISION

A 4011 Pilot Set is normally used to light 4425 Burners. A manual torch can be used in some applications. The burner can be direct spark ignited with either the 4055 Direct Spark Igniter (4055-D for 4425-2 through -6 and 4055-B for 4425-7 and -8 sizes) or the 4051-D Air Assisted Igniter. The 4051 Air Assisted Igniter is recommended because it ignites the burners over a wider operating range. If using direct spark ignition of main flame, use standard 6000 volt transformer. Half-wave ignition transformers can be used only with the 4055.

A flame rod or ultraviolet (UV) detector can be installed in one of three holes in the body, using an adapter listed in Bulletin 8832. UV scanners allow ignition with up to 14 osi main air. If flame rods are used, 4425-2 through -6 Burners must be ignited at 1 osi or more main air. Do not apply flame rods to -7 and -8 size burners. When using flame supervision, an interrupted pilot is required--do not use constant or intermittent pilots.

Startup and Adjustment: Refer to Bulletin GB-M1 for startup and adjustment of a nozzle-mix burner with ratio regulator air-fuel ratio control.

HIGH VELOCITY TILES

4425- -MB Burners have a 13½,"Milk Bottle" tile with reduced outlet; they produce higher velocity flames than the standard burner, also offer somewhat better protection for burner internals from furnace radiation. Good tile installation practice is important with any burner (see Supplements DF-M1 and -M2). It is critical with Milk Bottle tiles because of higher pressures developed in the tile, which can cause burner and furnace wall damage if not properly sealed into the wall.
IMPORTANT: For 4425-8-A, the air and gas connections cannot be piped in the same plane, as shown on other side, because the "flower pot" type air connection flange would interfere with the 2⅞ gas line.

**Note:** For 4425-8-A, the air and gas connections cannot be piped in the same plane, as shown on other side, because the "flower pot" type air connection flange would interfere with the 2⅞ gas line.

**Warning:** Mounting plate and tile can be separated from burner body for convenience during furnace construction; but for -2 through -6 sizes, tile must be set in wall with notches for pilot and flame rod in proper position relative to desired air pipe direction.

† Pilot, Flame Detector, and Observation Port positions are interchangeable as long as Pilot and Flame Detector are in adjacent holes.

‡ ¼" air pressure tap on -2, -3, -4, -5 and -6.

§ For 4425-MB Burners, a second observation port is substituted for the Pipe Plug.

\^ The milk bottle tile is not offered with the 4425-8-A Burner.

**Tiles for 4425 Burners**

<table>
<thead>
<tr>
<th>Burner designation</th>
<th>Standard</th>
<th>PN</th>
<th>Milk Bottle*</th>
<th>PN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4425-2 thru -6</td>
<td>70% Alumina</td>
<td>4-2121-2</td>
<td>80% Alumina</td>
<td>OC4-2332-1</td>
</tr>
<tr>
<td>4425-7-A, -7-B, -8-A</td>
<td>70% Alumina</td>
<td>4-2142-2</td>
<td>80% Alumina</td>
<td>OC4-2547-2</td>
</tr>
</tbody>
</table>

* All tiles are pre-fired.

Maximum recommended use limit temperature is 3200 F for all tiles.

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**WARNING:** Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Parts of this product may exceed 160°F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters recommendations, and care in operation.