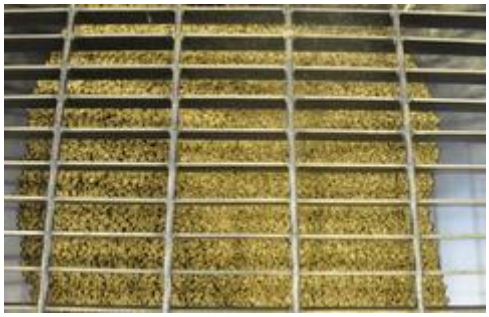
Roasting Process

Coffee roasting is a complex process that involves the careful application of heat to green coffee in an effort to transform the basic stuff of life contained within each seed – sugars, proteins, acids, etc – into delightful aromas of roasted nuts, malts, chocolate, fruit, berries, flowers and more. We take great care with each coffee, blending scientific data logging with intuition and experience to bring out a balanced taste and optimal flavour.

Step 1:



At the beginning of each batch, raw "green" coffee is loaded into the roaster's charge system. Once the roaster's internal air temperature reaches 500F the batch is dropped into a spinning, hot drum to begin the roasting process. Inside the drum there are many paddles that toss the coffee through the air – this is similar to how a household clothing dryer works.

Step 2:

For the first 5 minutes, a high amount of heat is applied to bring the coffee up to roasting temperatures. This stage has to be done quickly enough to preserve some internal moisture but not so quickly that the outside of the beans are at risk of scorching. The colour of the coffee shifts from green to yellow and the smell shifts from freshly cut grass to hay-like.

Step 3:

In the next 5 minutes the coffee undergoes changes at low roasting temperatures (between 300F and 350F). "Precursers" to tastes and aromas that will develop at higher temperatures are developed and the internal moisture, pressure and temperature are carefully controlled. The colour turns from yellow to light brown and the smell turns from hay-like to that of baking bread.

Step 4:

During the final 2 to 5 minutes (depending on the type of coffee and roast degree) the coffee's full flavour is developed. At around 360F the "first crack" occurs – a popping noise occurs as each bean expands under the pressure of carbon dioxide and water vapour produced from chemical reactions within the bean. At this point the internal pressure drops as these gases are allowed to escape, resulting in a bean with an ideal internal temperature, pressure and moisture for flavour development.

Step 5:

Between 360F and 395F the sugars and amino acids in the coffee react at a rapid pace to create the final flavour of the coffee. The flavour of coffee roasted to a "medium roast" degree is derived from carmelization of sugars and the reaction of sugars and amino acids in the "maillard reaction" – very similar to the flavours developed through the browning of meat on a grill. During this period the coffee turns toward darker shades of brown and the aroma develops into a nutty, cocoa-like and malty character.

Step 6:

Each coffee has a precise final temperature and time of roasting, both developed through a mixture of intuition and experimentation on the part of the roasting team. For example, a Yirgacheffe coffee might be roasted to 380F in 12:30, while a Honduran Espresso coffee will be roasted to 389F in 14:30.

Step 7:

Coffees roasted to temperatures above 395F are considered to be dark roasts. At these temperatures the aromas and tastes developed during the initial stages are combusted and new aromas that are toasty, smoky and spicy develop. Sweet and acidic tastes are replaced by the development of bitters. Most dark roasts develop to between 410F and 420F to achieve full development of these characteristics.