I f you own a Ducati...or, if you have ever looked lustfully at a Ducati and haven’t yet found your way to the Ducati factory and museum in Borgo Panigale, just west of Bologna, Italy...you don’t really understand Ducati. I’m sorry if this sounds harsh, but it is what it is. Catholics go to Rome; Muslims to Mecca; Lotus aficionados to Norwich and Ducati lovers go to Bologna. Until then, you have only a fractional appreciation of Ducati—especially when you see the Ducati factory’s efforts to welcome you.

A trip to a motorcycle factory—even one with a museum—may not be shared by your friends and family with the same life-affirming significance that you feel. Fortunately, northern Italy offers many excellent opportunities for travel subterfuge. It is easy to justify a vacation in Venice, Florence or Milan—all stunning tourist destinations. And once you get into the area, spending several hours at the Ducati factory and museum becomes an easy-to-insert side trip.

Bologna is located in northern Italy’s Po valley. It lies just 100 miles south (and slightly west) of the Venice airport, a mere 85 miles south of Florence or 130 miles southeast of Milan. Point out to your fellow travelers that Bologna is the city of towers and home to one of the world’s oldest universities, founded in 1088. Of course, to the rest of us, it’s the home of Ducati, the place where Ducati began life.

Reserve your factory tour at least seven days in advance—two weeks is better. Tours run just twice a day and are limited to ten people during the week, although up to 40 people per tour are allowed on Saturdays, when they run continuously beginning at 9:30 A.M. Call +39 051 6413343 or email infotour@ducati.com for reservations. You can request factory tours with an English guide if your Italian is a bit rusty, and it’s an exciting visit, even for those who may not share your passion for Ducati.

Visits to the museum require no reservations and, unlike the factory where photos are strictly forbidden, photography is welcomed in the museum.

In the museum, chronological exhibits explain how Ducati began as a manufacturer of consumer electronics; radios, miniature cameras and Italy’s first electric shaver as well as electronic component parts like vacuum tubes and condensers in the 1920s and ’30s. During World War II, when it built targeting systems for Axis tanks and bombers, it survived repeated Allied bombings until September 8th, 1943, when it was almost totally destroyed. But it was not until the 1950s that Ducati turned its attention to motorcycles. In 1944, on the other side of town, Aldo Fairinelli had developed a small four-stroke gasoline engine with unique pull-rodr overhead valves which could be mounted to a bicycle. These “Cucciolo” engines (Italian for “little puppy”) were named for their yapping exhaust sound. They were sold separately—mounting the engine to a bicycle was left to the buyer. Ducati, looking to expand, entered into an exclusive licensing agreement, eventually building over 200,000 engines before offering its own complete mopeds in 1952. One of the Cucciolo motors and an early Ducati Cucciolo-based motorcycle is in the first alcove of the Ducati museum.

Thus begins the Ducati motorcycle story. The early 60cc bikes weighed just 98 lbs. and could reach a top speed of 40 mph, delivering nearly 200 mpg. It was not long before Ducati dropped the Cucciolo name and branded its bike the 55M and 65TL, and before you knew it, they were racing them. The rest is history.

While the museum covers early Ducati history and exhibits of some iconic bikes, it is Ducati’s racing success that occupies the prime locations. From Mike Hailwood’s Isle of Man winner to the super-bikes ridden to victory by Doug Polen, Troy Corser, Neil Hodgson, Troy Bayliss and Raymond Roche along with a wall of winning MotoGP bikes, this space is pure Nirvana for a racing enthusiast. Luckily, there’s also a gift shop.

Ducati’s 200,000 square-foot factory is where all the current Ducatis are built, including the MotoGP race bikes ridden by Nicky Hayden and Valentino Rossi.

Gabriele Del Torchio, CEO and President of Ducati says, “We don’t just make vehicles here, we make dreams. We make motorcycles that fulfill the dreams of our customers.”

The company has a long record of gambling on innovative technology and embracing risk, never more so than in the past few years. The global economic downturn in ‘04 and ‘05 dramatically reduced worldwide demand for Ducati motorcycles. Pressure was exerted on CEO Torchio and Ducati’s board to scale back and downsize. Instead of cutting spending, lower sales projections and reducing R&D expense until the recession ended, they boldly looked for ways to expand with a new motorcycle for a new market. They decided to enter a new market with a brand-new product. But with only enough resources to enter just one new market, which one...cruisers, off-road or long-distance touring?
Ducati's first bike, the Cucciolo "little puppy" 4-stroke was originally a clip-on bicycle engine. The version on display has full suspension—front, rear and seat.

In the end, they conceived of a combination—not one bike for one market, but a single bike that would do well in multiple markets: the Multistrada. Ducati envisioned a bike so versatile it could perform in a variety of different terrains and circumstances. Its success allowed the Diavel to expand Ducati's product range even further.

Over 1000 employees occupy the two floors of the factory. Designers and engineers are on the top floor, and the massive factory housing hundreds of workers is on the cavernous ground floor, breathing life into every Ducati. The factory is a series of circular assembly lines, surrounded by large parts "supermarkets" and testing areas.

The bike-building process begins with workers leading trolleys loaded with components from the parts supermarket. Everything needed to assemble an engine for a bike: cylinders, gears, valves, clutches and pistons all go on the cart.

Given that the engine is the critical part of any Ducati, it is no surprise that each engine is hand-assembled by a single person—well, two people actually. One individual on the first line assembles the bottom end before a second person takes over on the second line and does the top. Unlike factories where workers (or machines) attach a single part to an engine as it moves along an assembly line, Ducati workers walk alongside and assemble the engine as it moves along the line.

The two circular lines produce over 35,000 engines per year. The first line puts in the crankshaft and assembles the gearbox. Once complete, the assemblage is tested to make sure everything turns freely and smoothly. The two halves of the engine are then sealed together. A robot-like machine smoothly deposits a thin bead of silicone gasket to one half of the crankcase, which is then fitted to the other side. The worker taps the two halves together with a hard rubber hammer and inserts long bolts that lock the two sides together. After verifying all of the gears and pistons move correctly, the engine is staged before moving to the second line.

Ducati workers on the second line take over and assemble the top end, including pistons, cylinders, heads and clutches. This is where the world famous desmo heads join the bottom part of the engine. Besides its unique "L"-configuration, Ducati's trademark feature has been its desmodromic valve system, designed by the legendary Dr. Fabio Taglioni in 1957. Eliminating conventional valve springs, the Desmo's valves are opened and closed with separate, dedicated cam lobes and lifters. Ducati says this allows the cams to have more radical profiles and results in valves which open and close more quickly without the risk of valve float or bounce and the resultant loss in power. A recreation of Dr. Taglioni's design office, including his original drawing table, is upstairs in the museum.

The heads are assembled, again by one person, and then installed in the engine. This critical three-stage process must be completed perfectly to ensure precisely the right torque on all gaskets and components. Once assembly is completed, the engine is placed into a small room, more like a large box with Plexiglas windows. Here the engine is filled with oil and put through its paces—a "cold" run to check for any leaks or other issues without the engine actually being fired up. Any engine that doesn't pass this step is disassembled to determine the problem.

A single piece of paper referred to as the "bible," follows each engine everywhere. Every person who touches the engine records precisely what he/she did and when.

Several hours after it was just a cart full of parts, the engine passes its inspection and is covered and placed on a new cart where it awaits a move to the main assembly line and its ultimate home, inside the frame of a brand-new motorcycle.

The main assembly line brings together the completed engines with their frames, most of them in the characteristic tubular trellis construction. This 250° long line is where all the hundreds of individual pieces converge to become just one bike. First to be attached is the engine, followed by the rear swingarm assembly, followed by the shock absorber. Next comes the top part of the frame, handlebars, computer and all other electronics, followed by the gas tank, tires and wheels. Four and a half hours from the beginning, the bike is finally able to be wheeled off for testing.

Testing is a significant effort at Ducati. First, all exhaust and emission settings are verified, ensuring they match certification requirements for various regions around the world. Next, the bike is rolled into a dyno room with large rollers on the floor where the bike is started and an actual road test is simulated. It is run through all the gears and then, just over 8 hours from the parts bin, the bike is complete and moved to the packing area where it is detailed, polished and prepared for shipment to dealers around the world.

More than anything else, Ducati bikes are made to ride, and once you've seen the surrounding countryside, you understand exactly why they are designed the way they are. Northern Italy is a rider's paradise—and car drivers find it equally intoxicating, which is why it is also home to Ferrari, Maserati and Lamborghini!