

# A PEACOCK HYBRID

HONDA MAKES A GRAB FOR THE PRIUS'S HALO WITH A HYBRID FOR LESS.

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## HONDA INSIGHT EX

### THE HIGHS

Drives like a Honda, taut handling, darn good chairs in front, great mpg, plenty of hybrid dashboard action.

### THE LOWS

Head-crasher door openings in back, Gen-Y muddle on the instrument panel, hatch design slices up mirror view.

### THE VERDICT

Honda seizes the low ground with more hybrid for less lucre.

» Meet the “affordable hybrid.”

That's a new item on your ever-expanding menu of hybrid choices. We've tested hyper-miler hybrids—the original three-cylinder Honda Insight at the dawn of this millennium, rated at 49 mpg city and 61 highway by today's EPA methods—and “muscle-car” hybrids, the 5.5-seconds-to-60 Lexus GS450h. There have even been perplexing hybrids; Honda never was able to convince customers of the benefits of the 2005 Accord hybrid. All of the above were mileage makers, more or less, but none put a priority on affordability. Now Honda is turning that page with this five-door, five-seat Insight; it says the emphasis here is

on bringing down the price of hybrid benefits more than pushing out the technical frontier.

While we wait for its price to be revealed, we expect the base Insight LX will slip in at less than \$21,000, nearly \$2000 below the 2009 Toyota Prius.

We're also waiting for the official EPA fuel-economy ratings. Meantime, Honda projects 40 mpg city and 43 highway—no match for the Prius at 48 and 45, respectively. Your mileage may vary, of course, but our 128-mile test trip over suburban and rural blacktops netted an encouraging 46 mpg. (A footnote: Arizona's temperate December climate means air conditioning

was not used, nor were there engine starts at seriously cold temperatures.)

The 2010 Insight, at first glance, fits almost perfectly into the Prius mold. The body has the same high-tail fastback silhouette, surely dictated by aero drag considerations. At 172.3 inches, the Insight is nearly three inches shorter than the Prius, 2.5 inches lower, and about an inch narrower. The space inside, as expressed by EPA passenger volume, is substantially less than in the Prius (85 cubic feet versus 96) and makes for a tight back seat with limited headroom. But cargo volume, at 16 cubic feet, is larger by 10 percent.

So much for the similarities. The behav-

ior of these two hybrids is very different. “Hondas must drive like cars,” one engineer explained to us, citing a very specific difference: When you key on the Insight, the engine always starts. But when you power up a Prius, a *ready* indicator will glow on the dash even though the engine may choose not to start if it's already sufficiently warm. This difference goes back to each company's fundamental ideas about hybrids. Toyota's hybrid is more complex, is more costly to build, and is capable of higher fuel economy in urban driving. The payoff of that technology, in fact, is sufficient to boost the Prius's city mileage above highway mileage; Honda's

hybrids, like conventional cars, do less well in metro motoring.

While Toyota hybrids readily move about at city speeds with the engine off, Honda's arguably don't. However, the Insight does slip into the “EV mode” quite often at low speeds, accomplished by closing all of the valves to prevent pumping losses and cutting off fuel flow through the injectors. Motive power in this mode is supplied by the electric motor acting on the crankshaft, which is still rotating and therefore adding the engine's friction losses to the motor's burden.

The necessity of “motoring” the engine whenever the Honda is in motion will inevi-

## ROAD TEST



### ECON INDEED

The ECON button gives you a set-it-and-forget-it mode for wringing more mpg out of Honda's hybrid system. The Eco Guide is one of the advisory screens; call it up for on-the-fly coaching as you try to push up your personal-best mileage.





## » COUNTERPOINT

### DAVE VANDERWERP

After a half-dozen acceleration sprints, a couple of skidpad runs, and two full-throttle laps around a five-mile oval, it's telling that the Insight's fuel gauge was still pegged at full, not budging even a millimeter. The Honda is more invigorating to drive than the Prius—that's perhaps the feeblest of praise—but the enthusiast litmus test seems to be whether you'd trade the Insight's dozen-mpg advantage to drive the cheaper, far more spacious, light-years quicker, and exceedingly more exciting standard-issue Honda Fit. I certainly would.

### JEFFREY DWORIN

I've never been a hybrid fan. Mostly they're joyless to drive, with far too many powertrain quirks. But this Honda hybrid forces me to rethink my position. When you twist the Insight's ignition key, the gasoline engine comes to life as in a conventional car. And it drives like a conventional car, with almost none of the bad habits of its competitors. While graphic-display screens may be engagingly novel, a manual gearbox would make things genuinely entertaining.

tably cut into mileage. But if the overall vehicle price can be lower, which is the plan, the Honda way may be more appealing. The Insight is all about driving the price down where Toyota can't profitably go.

For the record, the Insight drives like a Honda, with tight suspension motions, a firm ride, well-connected steering, and a no-fat musculature. Interior sound levels are mild and well controlled, especially at freeway speeds. Cockpit space is generous

for two in front, a bit tight on the knees in back if front occupants are unwilling to compromise on legroom. The rear bench is high, firm, and exceptionally well shaped for lumbar support.

Honda's shrewd packaging of the hybrid's energy-storage apparatus minimizes its intrusion into cargo space. The 48-pound nickel-metal hydride battery pack, along with 35 pounds of electronic circuitry and power connectors, lives in an armored box low between the rear wheels where it is protected from crash impact. The spare tire reclines above, under a hinged panel in the cargo hold. All you see when you lift the hatchback is a flat floor, which is continued forward when the rear backrests are folded. Three separate head restraints retract neatly into the rear seatback, pulling them down out of the mirror view when passengers have no need.

The passenger compartment and the rear structure are newly designed for the Insight. The front structure and the suspension are carried over from the Honda Fit. Like the Fit, the Insight has drum brakes in back to cut costs.

All Insights have the same 88-hp, 1.3-liter four-cylinder engine supplemented by a 13-hp electric motor that is sandwiched between the engine and the transmission as in every Honda hybrid. Maximum output is 98 horsepower (because the two sources don't peak at the same speed, simply adding up the power of the two is incorrect, Honda says). A CVT is the only available transmission. EX versions have shifter paddles linked to software that simulates a seven-speed gearbox.

Because the motor contributes up to 58 pound-feet of torque at 1000 rpm, roughly comparable to adding a second engine's output at that speed, the Insight feels reasonably energetic around town if you keep in mind the fuel-saving goal. Zero to 60 takes 10.6 seconds, a bit behind the 10.1-second mark of the last Prius we

tested. The nearly foot-shorter Fit is much quicker at 8.5 seconds.

At 2727 pounds, 216 less than the last Prius we scaled, we think Honda has done a good job of weight control. Still, the non-hybrid Fit is even lighter, at 2506 pounds.

Pavement grip is typical of fuel savers on low-rolling-resistance tires, 0.74 g on the skidpad compared with 0.76 for the Prius. Braking was above average at 177 feet from 70 mph, with no surprises during a panic stop. For gentle stopping around town, however, the brakes have the quirky, nonlinear feel common to some hybrids.

We celebrate hybrids that try to involve the driver in their special fuel-saving capabilities. Honda has always been a leader in this regard, though Ford is an impressive contender with the 2010 Fusion. The Insight offers two aids that we haven't seen before. Most obvious is the glowing background of the digital speedometer, which varies through a range of peacock hues from electric lime green at the thrifty extreme to double-strength indigo blue at full power. Compared with GM's "ECO" indicator, which simply gives your effort a passing or failing grade, Honda's subtle shading is vastly more informative. It focuses the mind on the one essential issue of frugal driving: Would a little less power get you there just as quickly? Because the cruise-control mentality of constant speed up hill and down is not the most efficient way.

The second aid, Eco Guide, can be called up on the trip computer centered in the tach. It's a graphic guide for tailoring your acceleration and braking to the preferences of Honda's hybrid system. You see a horizontal bar graph that lengthens leftward for braking and rightward for acceleration, marked by suggested *don't-go-here* zones on each end of the range. Any guidance is good, we think, but neither of these aids scored on the grin meter of our most passionate hybrid enthusiast.

Pushing the ECON button calls in a computer to moderate air-conditioning cycles and throttle action to improve fuel economy. Apart from illuminating a leafy green sprout on the cluster, ECON produces mildly lethargic part-throttle responses but bows out completely when you press further to full power.

Honda plans 90,000 Insights per year for the U.S., aimed especially at Gen-Y buyers with incomes of \$45,000 to \$55,000. Until


now, "hybrids haven't penciled out" for those buyers, one Honda spokesman told us. But with the economy in tatters, new cars aren't penciling across the generations. Gen Y will have lots of company as it kicks the Insight's tires. »



# HONDA INSIGHT EX

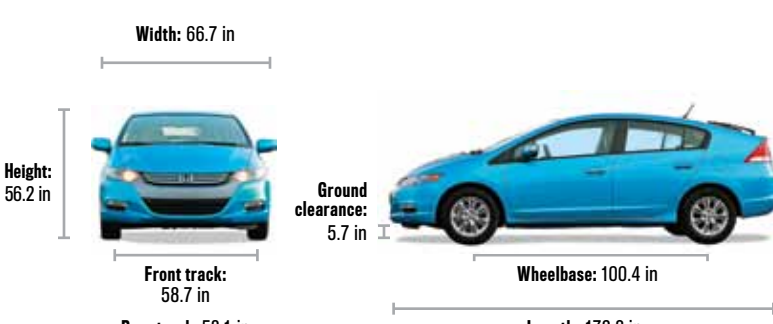
MFR'S SPECS	C/D RESULTS
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<b>Price (AS TESTED)</b>	<b>Vehicle type:</b> front-engine, front-wheel-drive, 5-passenger, 5-door hatchback
<b>\$21,300 (est)</b>	<b>Options:</b> none
<b>BASE:</b> \$19,800 (est)	<b>Standard:</b> power windows and locks, remote locking, cruise control, tilting and telescoping steering wheel, rear wiper
	<b>Audio system:</b> AM, FM radio; CD player; minijack and USB inputs; 6 speakers

Fuel Capacity		10.6 gal
 MPG	EPA (mfr's est)	
	CITY	HWY
	40	43
	C/D OBSERVED	
	40	46
FUEL REQUIRED: 87 OCTANE		

**VEHICLE**

INTERIOR			
<b>RESTRAINT SYSTEMS</b>			
Front: 3-point belts; driver and passenger front, side, and curtain airbags			
Rear: 3-point belts, curtain airbags			
<b>SEAT ADJUSTMENTS</b>			
Front: fore-and-aft, seatback angle, driver only; height			
<b>REAR SEATS</b>			
<b>Folding</b>	<b>Split</b>		
■ YES ■ NO	■ YES ■ NO		
<b>Pass-Through</b>			
■ YES ■ NO			
MEASUREMENTS (in)			
	Head	Leg	Shoulder
FRONT	38.4	42.3	52.7
REAR	35.9	33.5	50.4
<b>SAE VOLUME</b>	<b>Front</b>	<b>Rear</b>	<b>Cargo</b>
	50 cu ft	35 cu ft	16 cu ft

DIMENSIONS	
<b>WEIGHT:</b> Curb: 2727 lb	<b>Per horsepower:</b> 27.8 lb
<b>TOWING CAPACITY:</b> 0 lb	
<b>DISTRIBUTION:</b> Front: 57.9%	Rear: 42.1%
<b>GVWR:</b> 3577 lb	
	

**CHASSIS**

<b>Chassis type:</b> unit construction	
<b>Body material:</b> welded steel stampings	
STEERING	
Rack-and-pinion with variable electric power assist	
<b>Steering ratio:</b> 16.7:1	<b>Turns lock-to-lock:</b> 3.3
<b>Turning circle:</b> curb-to-curb: 36.1 ft	
SUSPENSION	
Front: ind, strut located by a control arm, coil springs, anti-roll bar	
Rear: ind, trailing arm integral with a transverse member, coil springs	
WHEELS+TIRES	
Wheel size/type: 5.5 x 15 in/cast aluminum	
Tires: Dunlop SP31 A/S, 175/65R-15 84S M+S	
Spare: high-pressure compact	
BRAKES	
Hydraulic with vacuum power assist and anti-lock control	
<b>F:</b> 10.3 x 0.8-in vented disc	<b>R:</b> 7.9 x 2.3-in drum
<b>Stability control:</b>	
■ fully defeatable	
■ competition mode	
■ launch mode	

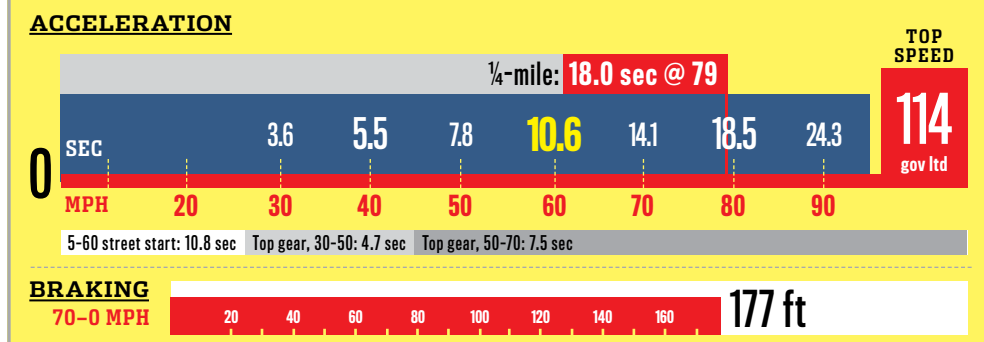
**POWERTRAIN**

ENGINE			
Inline-4, aluminum block and head			
<b>Bore x stroke:</b> 2.87 x 3.15 in, 73.0 x 80.0mm			
<b>Displacement:</b> 82 cu in, 1339cc			
<b>Compression ratio:</b> 10.8:1			
<b>Fuel-delivery system:</b> port injection			
<b>Valve gear:</b> chain-driven single overhead cam, 2 valves per cylinder, variable intake- and exhaust-valve timing and lift			
<b>Power (SAE net):</b> 88 bhp @ 5800 rpm			
<b>Torque (SAE net):</b> 88 lb-ft @ 4500 rpm			
<b>Redline:</b> 6100 rpm			
DRIVETRAIN			
<b>Transmission:</b> continuously variable automatic with manual shifting			
<b>Final-drive ratio:</b> 4.20:1			
GEAR	RATIO	MPH PER 1000 RPM	SPEED IN GEAR
lowest	2.53	6.6	40 mph (6100 rpm)
highest	0.42	39.3	114 mph (2900 rpm)
<b>ELECTRIC MOTOR:</b> brushless DC electric motor powered by 84 1.2-volt nickel-metal hydride batteries			
<b>Power (SAE net):</b> 13 bhp @ 1500 rpm			
<b>Torque (SAE net):</b> 58 lb-ft @ 0-1000 rpm			
<b>COMBINED POWER RATING:</b> 98 bhp, 123 lb-ft			

TEST RESULTS			
HANDLING		INTERIOR SOUND (dBA)	
<b>ROADHOLDING</b>	<b>UNDERSTEER</b>	<b>IDLE</b>	<b>70-MPH CRUISING</b>
0.74 g	MINIMAL	40	75
	MODERATE		68
	EXCESSIVE		

**NOTES**

"S" mode gets the engine up to max revs sooner, for noticeably quicker acceleration. Unexpected but welcome lift-throttle oversteer on the skidpad.



**WEATHER**

Temperature: 59°F

Humidity: 50%

Barometric pressure: 27.50 in Hg

**ODOMETER**

Test-vehicle mileage: 532

**TIRE INFLATION**

Test pressures:	Front	Rear
	33 psi	33 psi