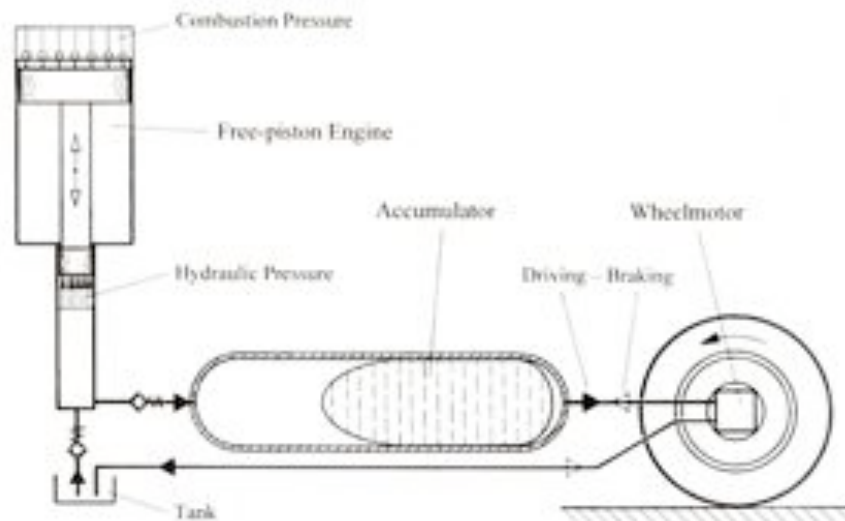


## Valentin Technologies - Ingo with Hydrostatic Powertrain

**Short Description:** Series Hydraulic Hybrid

**Status & Cost:** Mainstream Class, \$less than standard car



### Vehicle Stats

MPGe	130 MPGe diesel 117 MPGe
Weight	2200 lbs
L x W x H (ft)	14.2 x 5.8 x 4.7
HP	670 total: 2 x 230 HP front 2 x 105 HP back
0-60 MPH	5 seconds
Top Speed	93 MPH
Range	5 miles accumulator only
Battery Info	0.5 kWh, stored in the hydraulic accumulator (sufficient for 600 HP x 4s)
Motor	4 hydraulic wheel motors
Engine	60 HP free-piston "near-HCCI" diesel "combustion pump"
Cd x Frontal Area	0.22 x ? ft <sup>2</sup>

### Background and Details

- Although they currently have only designed the drive train, the stats on the left are given on their website as being their targets and they are used to calculate the MPG value
- "Hydrostatic Powertrain" consists of in-wheel hydraulic motors, an accumulator, and a 60 HP 'combustion pump'
- They hope to interest a major carmaker in their drive train technology, but will build a prototype for the AXP
- The inventor has been promoting this for a long time - so long that some of the original patents (circa 1986) have expired. The NYTimes ad in 1996 failed to find funding
- Like other series hybrids, the engine here does not drive the wheels, but instead runs at constant speed charging the accumulators. Regenerative braking also recharges the accumulators, at higher efficiency than EVs achieve
- The PESWiki interview is **excellent**. 1h of dense tech talk.
- The main skepticism is about the free-piston engine and the seals on the 7000 PSI hydraulic system
- References: [Valentin Technologies NYTimes Ad](#)  
[PESWiki Interview](#) [ElmGroveNow](#) [AutoBlogGreen](#)