World's most powerful rocket to make debut

SpaceX is to attempt the first launch of its Falcon Heavy rocket. With 27 engines generating five million pounds of thrust at liftoff, the triple-core booster will be the world's most powerful launch vehicle

Falcon Heavy 70 metres

Payload fairing

Second stage

Inter-stage adapter

Grid fins control flight when boosters return to Earth

First stage

Landing legs

Payload

Rocket designed to launch payloads up to 57 tonnes, allowing SpaceX to move into new satellite launch markets and eventually loft astronauts beyond Earth orbit

Second stage

Powered by single Merlin engine, modified to operate in vacuum of space

First stage

Consists of two existing ***Falcon 9*** boosters strapped to central core stage

First payload will be SpaceX founder ***Elon Musk's Tesla Roadster***, bound for Mars orbit

Launch

1. Lift-off

2. Side boosters separate from central core

3. Boosters flip over before descent

4. Boosters touch down simultaneously

5. Payload fairing separates from central core

6. Central core flips over

7. Central core lands on offshore recovery platform

8. Tesla sent on trajectory aimed for Mars orbit

Land

Ocean

Landing

Rocket designed to be reusable, with all three boosters built to fly back to Earth

Falcon Heavy launches start at $90 million

Side boosters: Land on two concrete pads at Cape Canaveral

Landing legs fold down to stabilise rocket

Central core: Lands on barge

Total of 27 ***Merlin 1D*** engines, fuelled by liquid oxygen and kerosene, able to produce thrust equal to around 18 Boeing 747 aircraft

Only *Saturn V* moon rocket, last flown in 1973, delivered more payload to orbit

Source and picture: SpaceX

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