

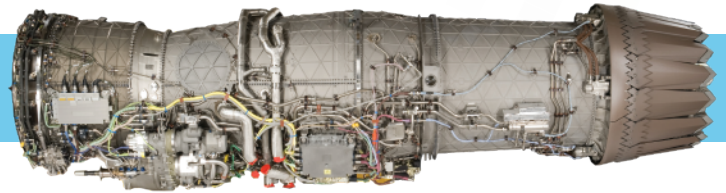


GO BEYOND

PRATT & WHITNEY F135 ENGINE FAST FACTS | Q3 2021

F135

The World's Most Advanced Fighter Engine



UNMATCHED CAPABILITY FOR THE WARFIGHTER



40K+ LBS
of thrust



5th GENERATION
stealth
technologies



**PRECISE
& RESPONSIVE**
integrated engine
control system



50% INCREASE
in thermal management
capacity over 4th
generation engines

PRODUCTION



825+
engines delivered
in total



Reduced average
cost of an F135 by
**MORE THAN
50%** to date



OVER \$500M
invested in capital and
process improvements to
enable increase in output

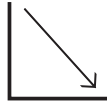


**THREE PRODUCTION
& TEST FACILITIES**
Middletown, CT
West Palm Beach, FL
Mizuho, Japan (IHI)

SUSTAINMENT



Mean flight hours
between removal
MORE THAN 2X
the program objective



93% REDUCTION
in unscheduled engine
removals over 4th
generation engines



13X SAFER
than 4th generation
engines



**TARGETING 50%
REDUCTION**
in cost per flight hour

MODERNIZATION

Growth in aircraft capability must be matched with propulsion modernization to ensure the full mission capability of the F-35 weapon system, now and in the future. Designed with the knowledge that operational environments evolve and threats advance, the F135 has ample design margin for agile, low-cost upgrades – known as Enhanced Engine Packages (EEP). EEP is the only cost-effective, capable, and proven variant-common solution that can enable full Block 4 capability and significantly reduce sustainment costs.



FUEL BURN

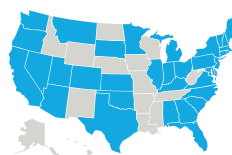


THRUST



**THERMAL MANAGEMENT
CAPACITY**

ECONOMIC IMPACT



● SUPPLIER LOCATIONS

The F135 program supports
37,000+ JOBS
in the U.S.

More than
**220 SUPPLIERS
IN 35 U.S. STATES**
provide parts for the F135



**60 SUPPLIERS
IN 12 COUNTRIES**
provide parts for the F135

The F135 program provides
**\$41B IN INDUSTRIAL
PARTICIPATION**
for international partner nations



GO BEYOND

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F135

The World's Most Advanced Fighter Engine



F135-PW-100

Conventional Takeoff and Landing (CTOL)
Carrier Variant (CV)

F135-PW-600

Short Takeoff/Vertical
Landing (STOVL)

PROGRAM AT A GLANCE (AS OF JULY 1)



690+
aircraft delivered



430,000+
flight hours



29
bases worldwide
(includes ship activations)



11
services have
declared IOC

PROGRAM OF RECORD



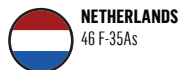
U.S.A.
1,763 F-35As
693 F-35B/Cs



U.K.
138 F-35s



ITALY
60 F-35As
30 F-35Bs



NETHERLANDS
46 F-35As



AUSTRALIA
100 F-35As



NORWAY
52 F-35As



DENMARK
27 F-35As



CANADA
88 F-35As



ISRAEL
50 F-35As



JAPAN
105 F-35As
42 F-35Bs



REPUBLIC OF KOREA
40 F-35As



BELGIUM
34 F-35As



POLAND
32 F-35As



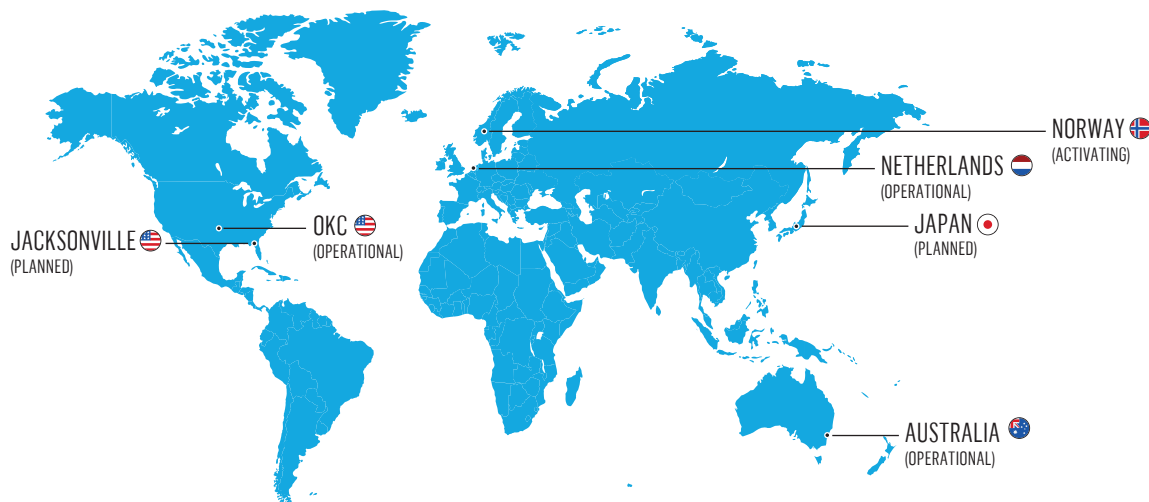
SINGAPORE
4 F-35Bs

FOREIGN MILITARY SALES

F135 ENGINE SPECS

F135 ENGINE SPECS	F135-PW-100 Conventional Takeoff and Landing (CTOL) Carrier Variant (CV)	F135-PW-600 Short Takeoff/Vertical Landing (STOVL)
Maximum Thrust Class	43,000 lbs	41,000 lbs
Intermediate Thrust Class	28,000 lbs	27,000 lbs
Short Takeoff Thrust Class	—	40,740 lbs
Hover Thrust Class	—	40,650 lbs
Length	220 in	369 in
Inlet Diameter	43 in	Main engine: 43 in Lift fan: 51 in
Maximum Diameter	46 in	Main engine: 46 in Lift fan: 53 in

F135 GLOBAL MRO&U NETWORK



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