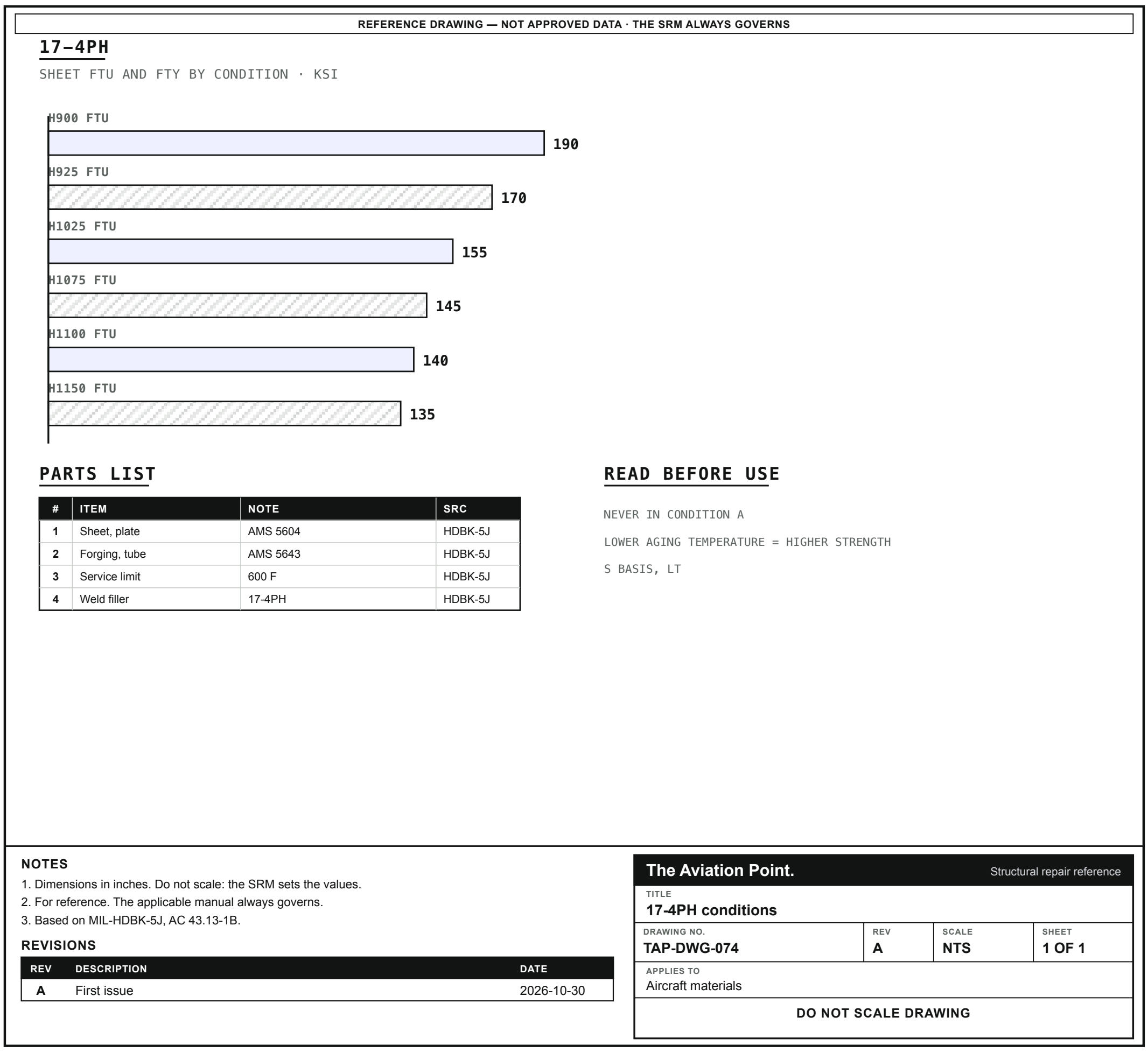
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The Aviation Point

17-4PH Stainless Steel

Martensitic precipitation-hardening stainless in every product form.



17-4PH: sheet Ftu and Fty by condition Values from MIL-HDBK-5J, S basis unless noted.

Key facts

Property	Value	Source
Composition	Carbon 0.07 %, chromium 16.5 %, nickel 4 %, copper, columbium or tantalum	AC 43.13-1B CHG 1, Table 4-3
Class	Precipitation hardening, martensitic	AC 43.13-1B Table 4-3; MIL-HDBK-5J par. 2.6.9.0
Temperature	Good corrosion and oxidation resistance up to 600 °F	MIL-HDBK-5J, par. 2.6.9.0
Sheet, strip, plate	AMS 5604	MIL-HDBK-5J, Table 2.6.9.0(b)
Forgings, tubing, rings	AMS 5643	MIL-HDBK-5J, Table 2.6.9.0(d)
Machining	Best in H1150 and H1150M; precautions of austenitic stainless but work hardening is not a problem	MIL-HDBK-5J, par. 2.6.9.0
Size change in aging	Contraction 0.0004–0.0006 in/in to H900, 0.0008–0.0010 in/in to H1150	MIL-HDBK-5J, par. 2.6.9.0

Design allowables — 17-4PH sheet, strip and plate, by condition (S basis)

Condition	Ftu, LT	Fty, LT	Min. elongation, 0.015–0.186 in	Min. elongation, 0.187–0.625 in
H900	190	170	5	8
H925	170	155	5	8
H1025	155	145	5	8
H1075	145	125	5	9
H1100	140	115	5	10
H1150	135	105	8	10

Key points

- **Never use in Condition A.** It is a fabrication condition.
- **H900 and H925 are not for parts needing fracture toughness** (the handbook says this for 15-5PH, a close relative).
- **Weld repair: the SRM.**

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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SOURCES · MIL-HDBK-5J, Metallic Materials and Elements for Aerospace Vehicle Structures · FAA AC 43.13-1B CHG 1 · MMPDS

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