

Important Safety Statement

This is an irregular method to be used only when a temperature measuring instrument is unavailable and an emergency assessment is required to determine a problem.

WARNING

- The operator must be an engineer with professional training and experience in hydraulic technology.
- Before touching, you must ensure the estimated temperature is below 70°C (158°F).
- Temperatures over 70°C (158°F) can cause severe burns (scalds).

Precondition: The Criticality of Hydraulic System Temperature Control

The temperature change of a hydraulic system is a crucial factor for stable operation. Severe temperature changes in the hydraulic fluid will negatively affect the fluid's viscosity, speed, and pressure stability, as well as the accuracy of shift operations. Overheating accelerates the aging of components like seals and coils, significantly reducing their lifespan. Therefore, controlling the hydraulic system temperature within the proper range is critical.

Quick Assessment Guide: Hand Contact and Temperature Range

The table below provides a comparison of the subjective tactile reaction and the approximate temperature range when an engineer touches the surface of hydraulic components (such as a tank, pipeline, or valve) in an emergency situation.

Temperature Range (Approx.)	Contact Reaction and Maximum Contact Time
30 to 34°C (86 to 93.2°F)	Slightly Warm (A mild, lukewarm feeling.)
36 to 40°C (96.8 to 104°F)	Warm (A distinct warm feeling.)
46 to 50°C (114.8 to 122°F)	Clearly Hot (The hand can be held on for over 1 minute, but the heat is noticeable.)
54 to 56°C (129.2 to 132.8°F)	Hot (The hand can only touch for about 15 seconds.)
57 to 59°C (134.6 to 138.2°F)	Very Hot/Burning (The hand can only touch for about 3 seconds and must be removed immediately.)
Over 60°C (140°F)	Extremely Hot (The hand can only touch for less than 2 seconds; almost unbearable.)

Note:

This table is only for reference in research and emergency use. The actual tactile reaction will vary depending on personal factors (such as skin thickness and heat tolerance). If the hydraulic system is suspected of overheating or the temperature feels too high, always use a standard measuring instrument to confirm the temperature and proceed with professional repair.