Henkel

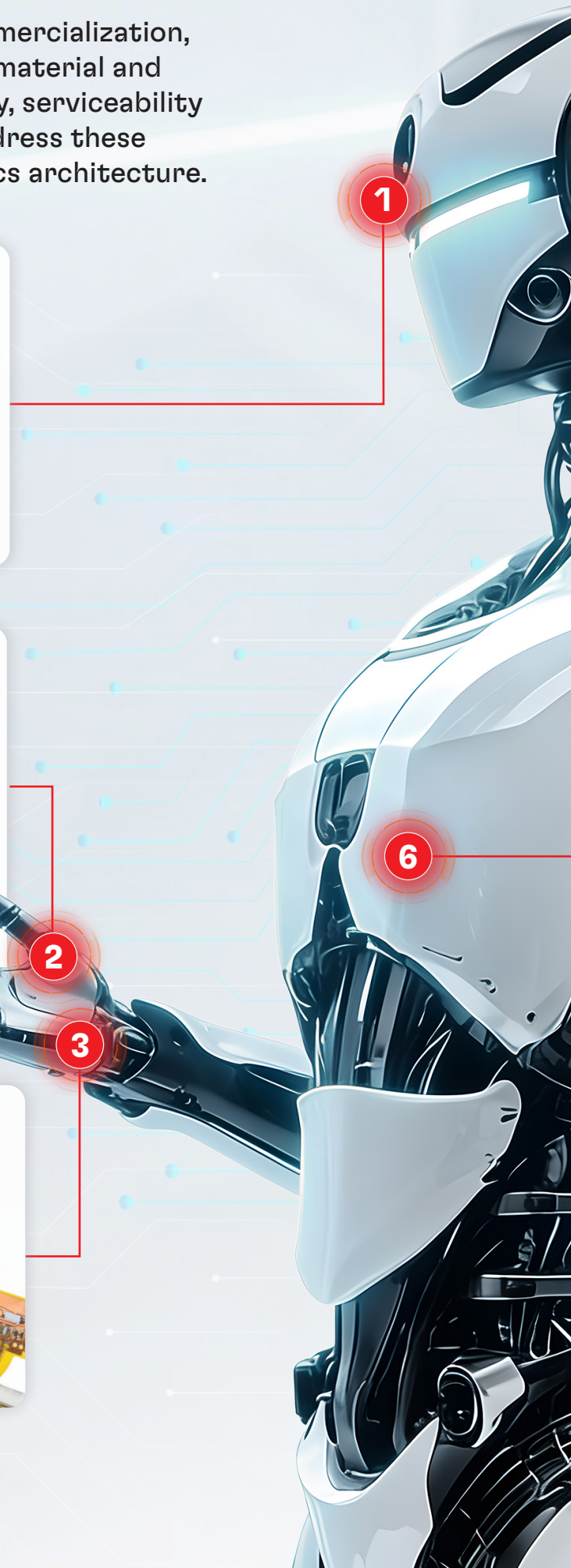
Henkel Adhesive Technologies

HENKEL SOLUTIONS FOR *HUMANOID* ROBOTICS

Enabling reliable, durable and scalable humanoid robotics and embodied AI applications through advanced materials and application know-how.



As humanoid robotics moves towards commercialization, manufacturers face growing challenges in material and precision integration, operational reliability, serviceability and thermal management. Henkel helps address these challenges across the full humanoid robotics architecture.



VISION & SENSING SYSTEM

Enabling reliable sensor integration, interface protection and stable system performance.

- Camera modules
- LiDAR
- Radar modules
- Inertial measurement unit
- Force-torque sensors
- Tactile sensor modules



DEXTEROUS HAND

Supporting compact and precise hand modules with materials for sensing, bonding and miniaturized assembly.

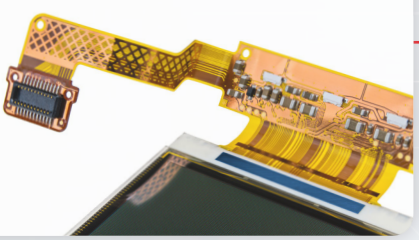
- Coreless motors
- Hand control board
- Tendon / string system
- Fingertip / palm surface
- Embedded sensors

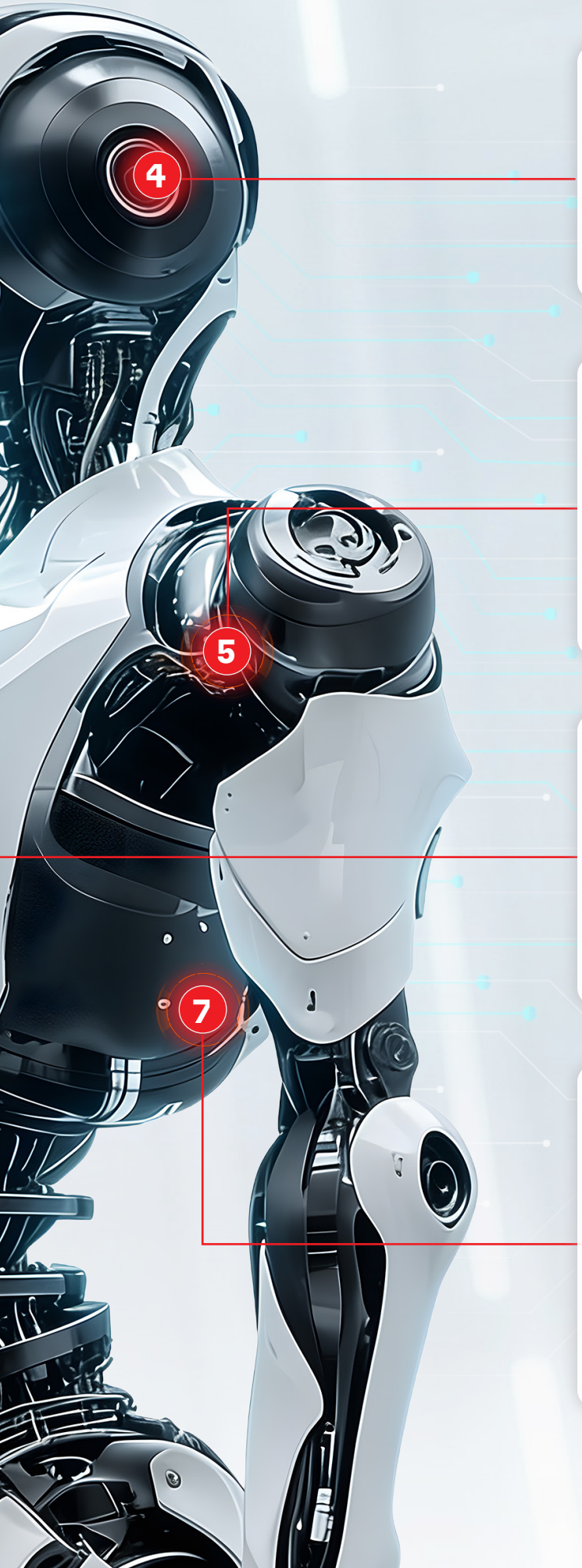


ELECTRONIC SKIN

Exploring new material approaches for tactile sensing, flexible electronics and human-interaction surfaces.

- Pressure-sensing layer
- Printed heating layer
- Flexible substrate / interconnects

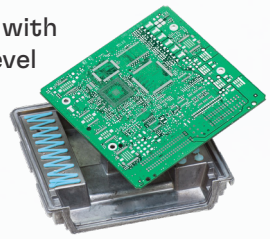




COMPUTE & CONTROL

Supporting compact electronics with thermal, protection and board-level reliability solutions.

- AI computing unit
- Motion control board



ACTUATION & MOTION SYSTEM

Improving motion system reliability through bonding, retaining, threadlocking and assembly solutions.

- Motors
- Drives
- Encoders
- Reducers



BATTERY & POWER SYSTEM

Helping manage heat, protection and integration challenges across battery and power systems.

- Battery pack
- Battery management system
- Power electronics



SYSTEM INTEGRATION & FINAL ASSEMBLY

Enhancing system durability with sealing, gasketing, wire harness protection and robust assembly solutions.

- Assembly interfaces
- Enclosure / housing
- Wires & connectors
- Footpad
- Textile parts



WE HELP ADDRESS
YOUR CHALLENGES AROUND

MATERIAL & PRECISION INTEGRATION

OPERATIONAL RELIABILITY

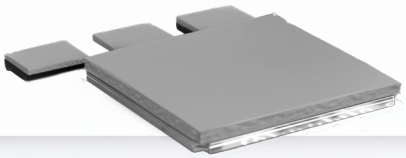
SERVICEABILITY

THERMAL MANAGEMENT

HENKEL SOLUTION HIGHLIGHTS
SUPPORTING THESE KEY CHALLENGES

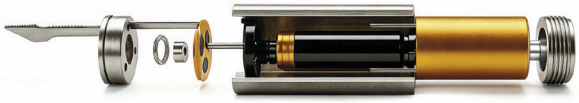
Thermal management

Supporting heat dissipation and stable performance in compact electronics, motors, and power systems.



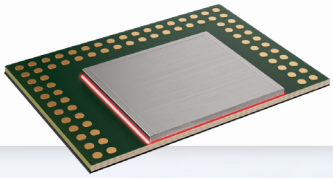
Bonding & assembly

Enabling reliable joining of challenging materials and compact humanoid robotic structures.



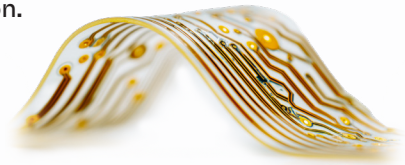
Electronics protection

Helping protect boards, packages, and interfaces against environmental exposure and mechanical stress.



Functional materials & interconnects

Supporting tactile sensing, printed functionality, and flexible electrical integration.



Talk to Henkel to explore module-specific solutions for your humanoid robotics platform.

www.henkel.com/our-businesses/adhesive-technologies

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