Mr. Jeff Burnstein

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Hearing on: “Robots Made in America: Advancing U.S. Leadership in Manufacturing and Automation”

Statement before the Subcommittee on Research and Technology,

Committee on Science, Space, and Technology,

United States House of Representatives

April 21, 2026

Thank you, Chairman Obernolte, Ranking Member Stevens, and Members of the Subcommittee, for the opportunity to discuss the state of the robotics industry in the United States, and how we can regain our leadership in this critical technology arena.

I’m speaking today with the benefit of having spent 45 years in the robotics industry. I can categorically state that this moment is the most exciting time in the history of robotics. The fact that each of you, your colleagues in Congress, and the Administration are discussing the importance of the robotics industry is gratifying and suggests that a new era of American leadership may be on the horizon.

Historically, America was once the clear leader in robotics. The world’s first robot company, Unimation, was founded in the US in 1956, and the first industrial robot was installed in an automotive plant in New Jersey in 1961. Over 100 US robot companies followed.

However, despite being billed as “the next industrial revolution,” the US robotics industry struggled to find acceptance. Robot companies often faced challenges such as worker protests due to fears of job loss. I believe those fears also prevented the US government from offering support to the industry, despite warnings that leadership would be lost if we didn’t act.

Instead, it was Japan that saw the promise of robots and took action. The Japanese Ministry of Trade and Industry developed strategies to help support Japanese robot makers and researchers, as well as companies using robots. As a result, by the early 1980s, Japan had surpassed the US in both robot manufacturing and adoption, and they remain far ahead today.

Fast forward two decades, and it is China who launched a national strategy to become the world's leading user and manufacturer of robots. Today, China dwarfs the rest of the world in robot adoption, installing nearly 10 times more robots each year than the US. China's installed base of over 2 million robots is already five times larger than that of the US. China is truly "all in" on robotics and is no longer just copying other country's robots, but is also innovating in areas like Humanoid Robots.

I'm frequently asked: is it too late for the United States to regain its leadership in robotics? My answer is "no, but we need to act now."

Today, the powerful combination of robots with AI – often called Physical AI – has the potential to transform every industry and assist in solving major societal challenges. No country can win the AI race without also leading in robotics.

To make this vision a reality, we must first prepare the American workforce for a manufacturing renaissance. While fears of job losses often permeate the narrative, if we succumb to those fears without understanding the realities of our labor force, we'll fall further behind our global competitors.

Our association, the Association for Advancing Automation (A3), welcomes this important conversation.

Make no mistake, the current labor market cannot meet manufacturing demand.

According to the Bureau of Labor Statistics, there are 438,000 manufacturing job vacancies across the country today. And according to a study from the Manufacturing Institute and Deloitte, that number could grow as high as 1.9 million unfilled manufacturing jobs by 2033.

Robots and automation can help fill this critical manufacturing capacity gap while we simultaneously upskill the American workforce.

Our association is working hard to develop the skilled labor of the future through new training programs and certificates that can help produce technicians, operators and supervisors – but we can't do this alone.

Fortunately, the US can build upon its strengths with top universities like Stanford, Michigan, Berkeley, MIT, Carnegie Mellon, Purdue and so many others that have great robotics and AI programs. The Advanced Robotics Manufacturing institute is a good example of the type of consortium that is possible between government, academia and industry.

Even with the right workforce, we cannot reshore manufacturing at scale without a massive increase in robot adoption. Robots do the "dull, dirty and dangerous" work that people don't want to do and shouldn't have to do.

People – however – can design, install, maintain and operate robots, as well as develop new applications to make companies more productive. These are better, safer, and often higher paying

jobs than the tedious and backbreaking manufacturing jobs of the past. Importantly, not all of these new jobs require college degrees; in many cases, students right out of high school are able to enter the workforce.

We're seeing impressive startups popping up every day in Silicon Valley, San Francisco, Austin, Boston, Pittsburgh, San Antonio, Los Angeles, New York, Chicago, Detroit and so many other American cities.

Exciting US companies like Chef Robotics, Raise Robotics, CoBot, Path Robotics, Robust AI, Locus, Intrinsic, Standard Bots and others are gaining traction. Humanoid robot companies like Apptronik, Boston Dynamics, Figure and Agility are making significant progress. NVIDIA is driving Physical AI and Digital Twin technologies that hold so much promise.

Investments are accelerating in the US. For example, FANUC America, ABB Robotics and Teradyne Robotics all recently announced investments of tens of millions of dollars in Michigan to meet growing demand for automation.

There is definitely reason for optimism in the US robotics industry.

With all this progress across the robotics ecosystem, there are several actions the US can take to reassert its leadership. Our **"Vision for a National Robotics Strategy"** includes six major points:

1. **Establish a Central Government Robotics Office.** A3 strongly supports the Administration's attention to robotics and its consideration of an Executive Order that could appoint a central coordinator and spur agency action across government. Currently there is no federal agency or office that regularly considers robotics initiatives or interfaces with the industry on innovation, challenges and opportunities. Our vision includes the establishment of a White House Office of Automation and Robotics or similar central office, in coordination with a multidisciplinary National Robotics Strategy Commission, so that productive policy discussions can be coordinated and centralized, and to manage and oversee the other initiatives we outline below (A3 strongly supports the passage of H.R.7334 – National Commission on Robotics Act). Even as the federal government strives to become more efficient, the establishment of a new office is compelled by the current lack of government strategy and coordination on this topic, the growing sophistication of, and applications for, robotics technology and embodied AI, and the increasing global competition in this space as reflected by national strategies developed by other national governments. This office would lead, oversee, and update the national strategy including the initiatives set out below.
2. **Implement Tax Incentives to Drive Industry Adoption.** Putting robots to use immediately is how we maintain competitive advantages in manufacturing, energy, and other industries, and how we provide real-world feedback (including training data for reinforcement learning) to robotics developers to help improve their products. A national

strategy should drive adoption via favorable tax policies, including tax credits and accelerated depreciation, to encourage investments in automation and robotics, with policies that include not only capital costs but also integration and training costs. As another example, policy could be implemented to provide an automation technology factory tax credit. These approaches will allow companies to de-risk their investments and experience a return on investment sooner. Additionally, reforms should be made to Section 174 of the Internal Revenue Code to simplify the process for businesses to deduct R&D expenses. Addressing the retroactive capitalization requirement would alleviate the financial burden of companies that rely heavily on R&D, fostering a more favorable environment for technological advancement. Conversely, tariffs could undermine adoption. Robots and components produced by key allies Japan, Korea, Germany and others are critical to making US companies globally competitive. This is one of the key reasons we are concerned about accelerating tariffs on robots and components made in these countries. Tariffs add cost to automation, which makes small and medium sized companies less likely to adopt automation.

3. **Government Agencies Should Become Leading Adopters of Robotics and Set an Example.** A national strategy should involve putting robots to use extensively in government itself. US government spending accounts for over 23% of the gross domestic product, and Federal agencies are involved in a broad range of industrial and logistics processes including transportation, warehousing, facility maintenance and security, public safety, infrastructure, scientific research and national defense, to name a few. These are all terrific application areas for robotics and government can set a leadership example for private enterprise by being early, enthusiastic adopters. A national strategy would examine and implement ways that the government can receive the "double benefit" of improving government efficiency and supporting the robotics industry by increasing agency budgets for, and initiating acquisitions of, robotics technologies. In order to promote the use of these technologies and to set an example of efficiency for the private sector, government should communicate to the public openly and frequently about its adoption of robotics, explaining the benefits and productivity gains. This communications initiative would also inspire students to pursue STEM careers and tie-in to the workforce training initiatives that are also part of the national strategy.

4. **Establish and Expand Government-Funded Training Programs.** In order to receive the most benefit from advanced robotics technology we need far more skilled and knowledgeable workers. The national strategy should develop and expand government-funded STEM and robotics education and training programs. These programs will help create jobs and ease the transition of workers to more automated facilities, making their jobs better, safer and more productive. These programs are critical to the national strategy, as neither government nor industry can implement robotics technology – and thereby become more efficient – without the trained workforce that knows how to

integrate and operate it. Small and medium-sized companies in particular need support and access to such initiatives. Many existing programs of this kind are run at the state level, so a key driver of success is for the federal government to coordinate with, and increase support for, the most effective programs of this kind at the state level, such as the Alabama Robotics Technology Park and Ohio's RAMTEC, for example.

5. **Fund Both Academic Research and Commercial Innovation.** Many successful robotics innovations have been launched from university robotics research labs, which is also where are brightest students are trained. The new national strategy should relaunch research funding initiatives resembling the prior National Robotics Initiative (NRI). However, funded programs should extend well beyond the NRI to support commercial-led research and adoption. For example, the national strategy could establish an Industrial Finance Corporation that would be modeled on the Development Finance Corporation, update and increase funding for the NIST Manufacturing Extension Partnership to focus on automation, increase funding for the Manufacturing USA program and/or compel the integration of robotics into the AI for Resilient Manufacturing Institute. This strategy would leverage public-private partnerships to support scaling up capital-intensive manufacturing enterprises.

6. **Encourage the Development of New Standards and Best Practices.** Industry standards and best practices are crucial to education, training and safety. They also build public trust and customer confidence in robot technology. Standards previously developed when robots were simpler machines, fixed-in-place, an operating in areas separated from human workers have done tremendous good to establish and advance the industry, but do not necessarily work well in the era of AI-powered robots that navigate using more novel mechanisms such as legs, that manipulate objects in the world with new types of sensors and end effectors, and that are being put to work closer to human workers and in communities or homes. A national strategy should evaluate what standards and best practices the government ought to encourage the industry to develop to make sure the next era of robotics is poised for success in education, training and safety. Government can act as the convener and facilitator of industry self-governance efforts, as it has done in other industries.

Taken together, these recommendations present an opportunity for the nation to seize the moment and advance the robotics and automation industry.

American was once the clear leader in robotics. It can be so again.

Thank you for the opportunity to share this vision. Our trade association stands ready to assist in any way we can.

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Jeff Burnstein
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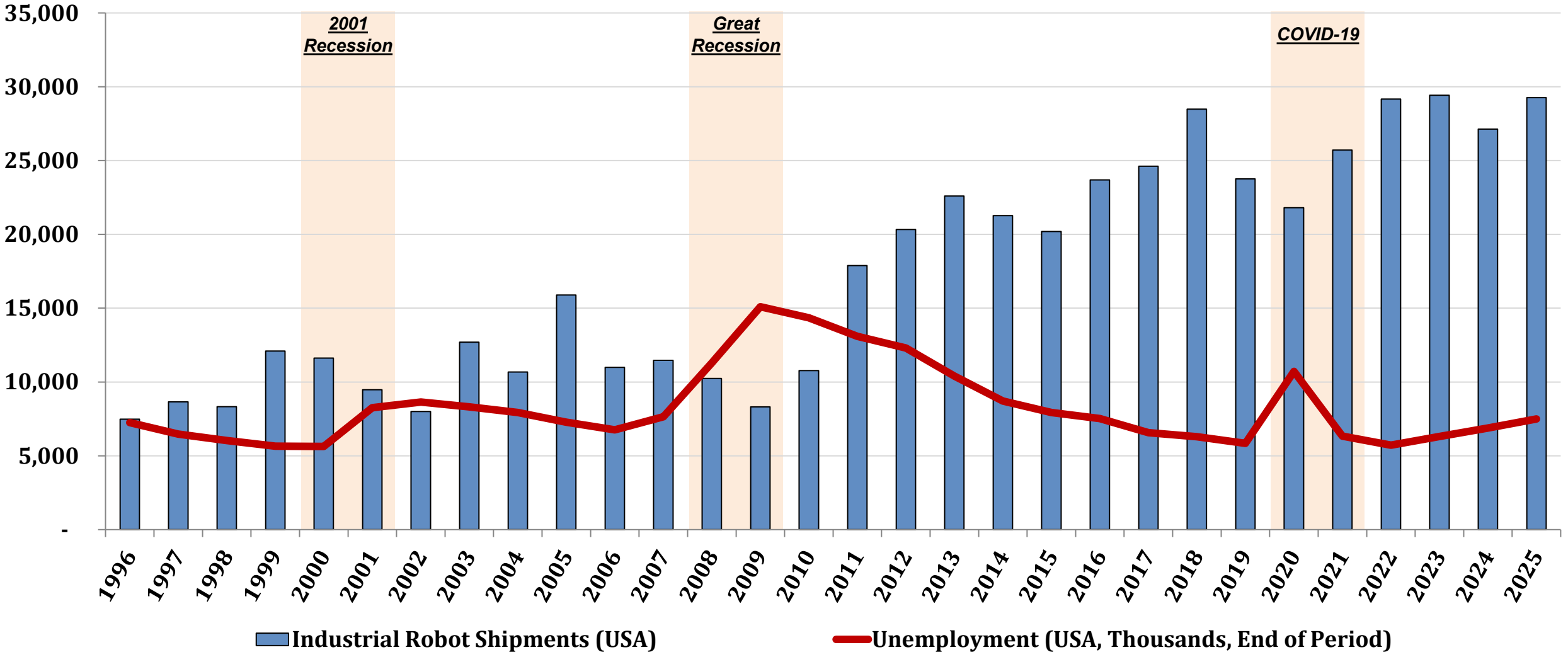
ASSOCIATION FOR ADVANCING AUTOMATION

USA Robot Shipments vs. Unemployment



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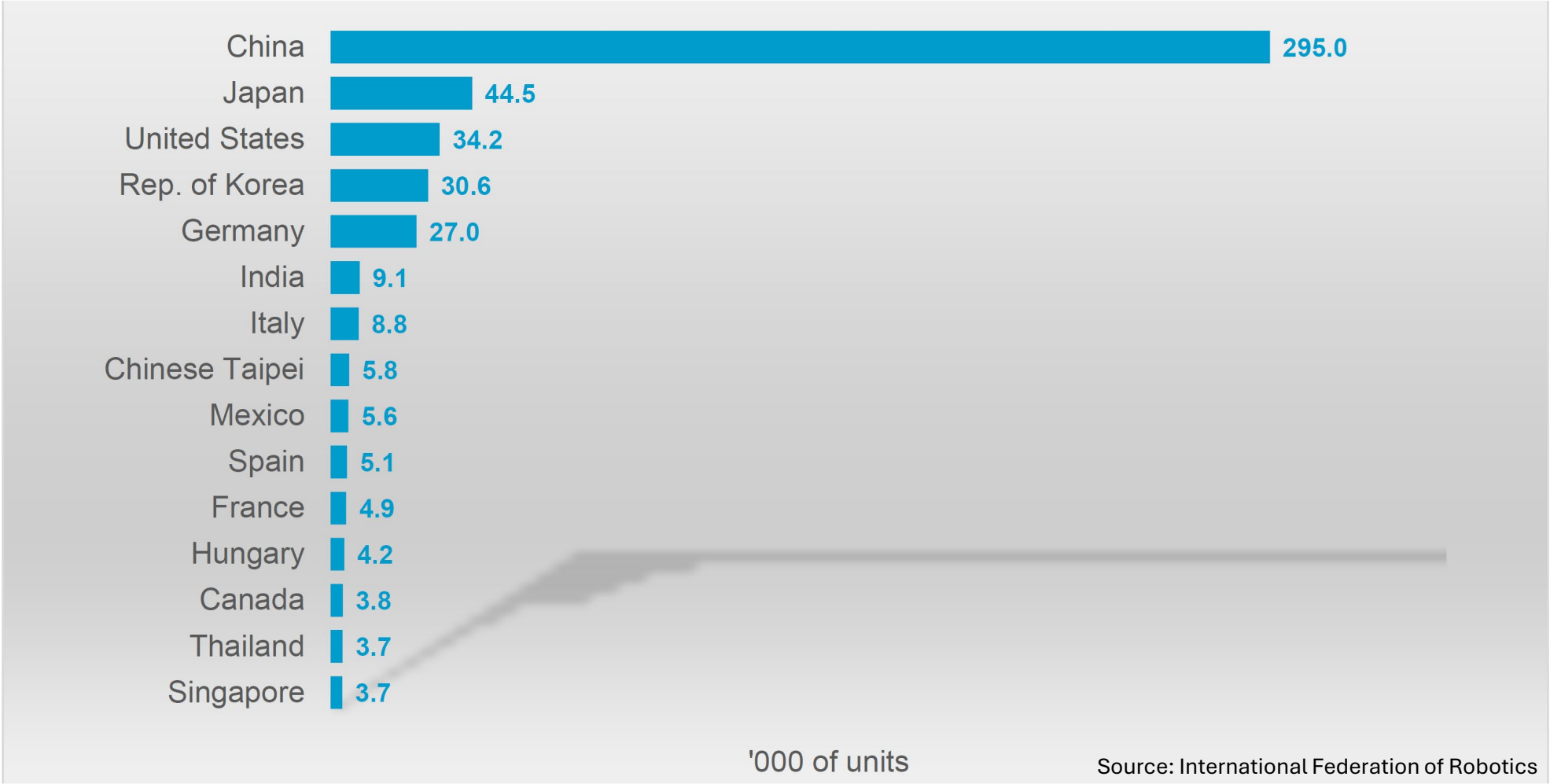
Sources: A3 Robotics; https://automate.org & BLS.gov

ANNUAL INSTALLATIONS OF INDUSTRIAL ROBOTS, 15 LARGEST MARKETS, 2024

IFR International Federation of Robotics

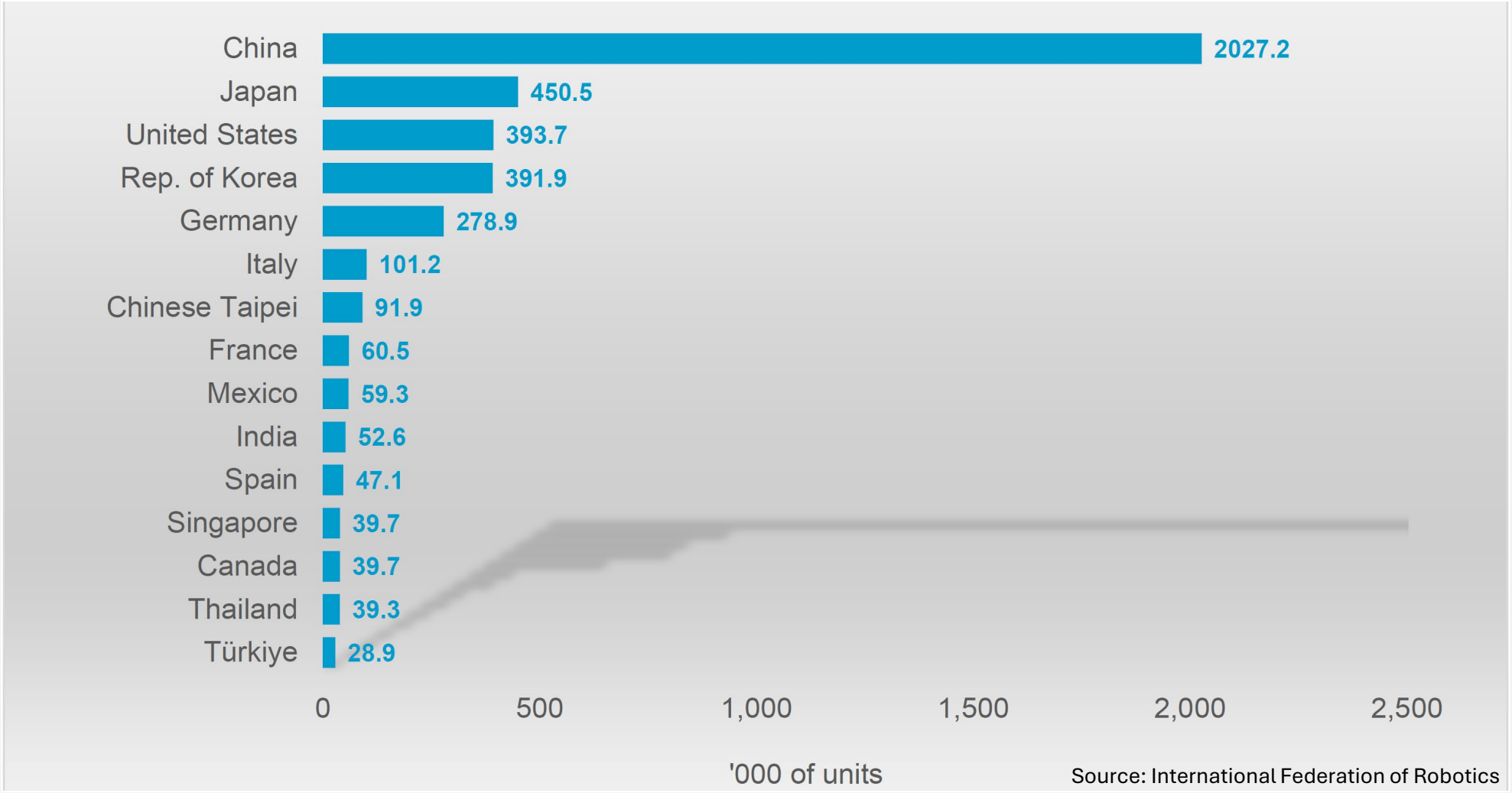


Source: International Federation of Robotics

ASSOCIATION FOR ADVANCING AUTOMATION

OPERATIONAL STOCK OF INDUSTRIAL ROBOTS, 15 LARGEST MARKETS, 2024

IFR International Federation of Robotics



Source: International Federation of Robotics

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