

**YASKAWA**



**23·26 JULHO**  
**2019 SÃO PAULO EXPO**  
De Terça a Sexta das 13h às 20h

**Automação e Manufatura**

**Motoman Robótica do Brasil**

# CORPORATIVO



Yaskawa Japão



Motoman Center: robôs produzem robôs

- Fundação: Julho 1915
- Sedes: Japão e Estados Unidos
- Receita: US\$ 4,1 Bilhões (2018)
- Colaboradores diretos: > 15.000
- Primeiro robô elétrico: 1977

# CORPORATIVO

## ▶ Motoman Robótica do Brasil



- **Fundada** em 1999
- Atuação **na América Latina**
- **> 4.500** robôs instalados no Brasil
- **> 400.000** robôs instalados no mundo

# ORIGEM DA PALAVRA MECATRÔNICA

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## Mechatronics

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From Wikipedia, the free encyclopedia

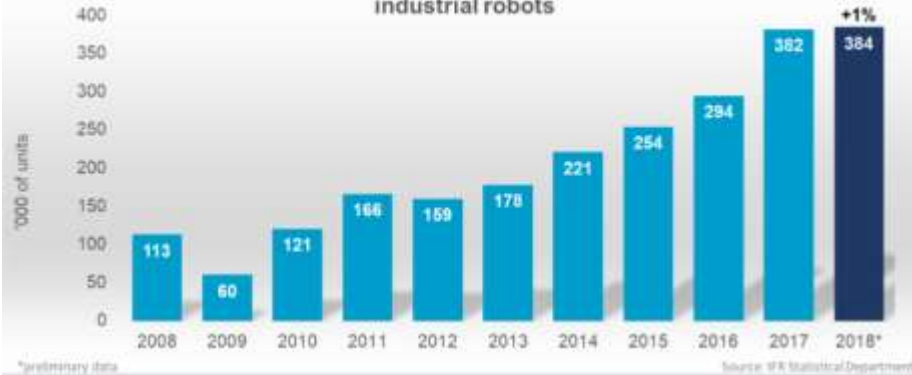
**Mechatronics**, which is also called **mechatronic engineering**, is a [multidisciplinary](#) branch of engineering that focuses on the engineering of both [electrical](#) and [mechanical systems](#), and also includes a combination of [robotics](#), [electronics](#), [computer](#), [telecommunications](#), [systems](#), [control](#), and [product engineering](#).<sup>[1][2]</sup> As [technology](#) advances over time, various subfields of engineering have succeeded in both adapting and multiplying. The intention of mechatronics is to produce a design solution that unifies each of these various subfields. Originally, the field of mechatronics was intended to be nothing more than a combination of mechanics and electronics, hence the name being a portmanteau of **mechanics** and **electronics**; however, as the complexity of technical systems continued to evolve, the definition had been broadened to include more technical areas.

The word *mechatronics* originated in [Japanese-English](#) and was created by Tetsuro Mori, an engineer of [Yaskawa Electric Corporation](#). The word *mechatronics* was registered as [trademark](#) by the company in Japan with the registration number of "46-32714" in 1971. However, afterward the company released the right of using the word to public, the word begun being used across the world. Nowadays, the word is translated into many languages and the word is considered as an essential term for industry.

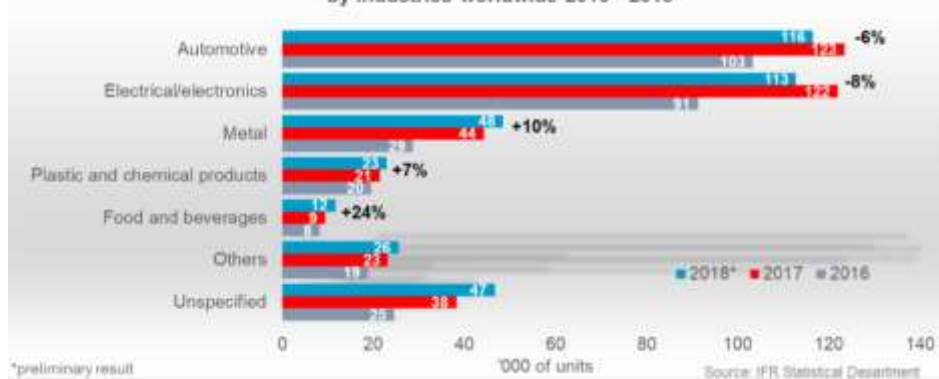


# MERCADO ROBÓTICO - MUNDO

Estimated worldwide annual shipments of industrial robots



Estimated annual supply of industrial robots at year-end by industries worldwide 2016 - 2018\*



Fonte: IFR 2019

# MERCADO ROBÓTICO - BRASIL

Estimated annual shipments of multipurpose industrial robots in selected countries.  
Number of units

Country	2015	2016	2017*	2018*	2019*	2020*	2017/ 2016	CAGR 2018 - 2020
<b>America</b>	<b>38,134</b>	<b>41,295</b>	<b>48,000</b>	<b>50,900</b>	<b>58,200</b>	<b>73,300</b>	<b>16%</b>	<b>15%</b>
North America	36,444	39,571	46,000	48,500	55,000	69,000	16%	14%
- United States	27,504	31,404	36,000	38,000	45,000	55,000	15%	15%
- Canada	3,474	2,334	3,500	4,500	3,000	5,000	50%	13%
- Mexico	5,466	5,933	6,500	6,000	7,000	9,000	10%	11%
<b>Brazil</b>	<b>1,407</b>	<b>1,207</b>	<b>1,500</b>	<b>1,800</b>	<b>2,500</b>	<b>3,500</b>	<b>24%</b>	<b>33%</b>
Rest of South America	283	417	500	600	700	800	20%	17%

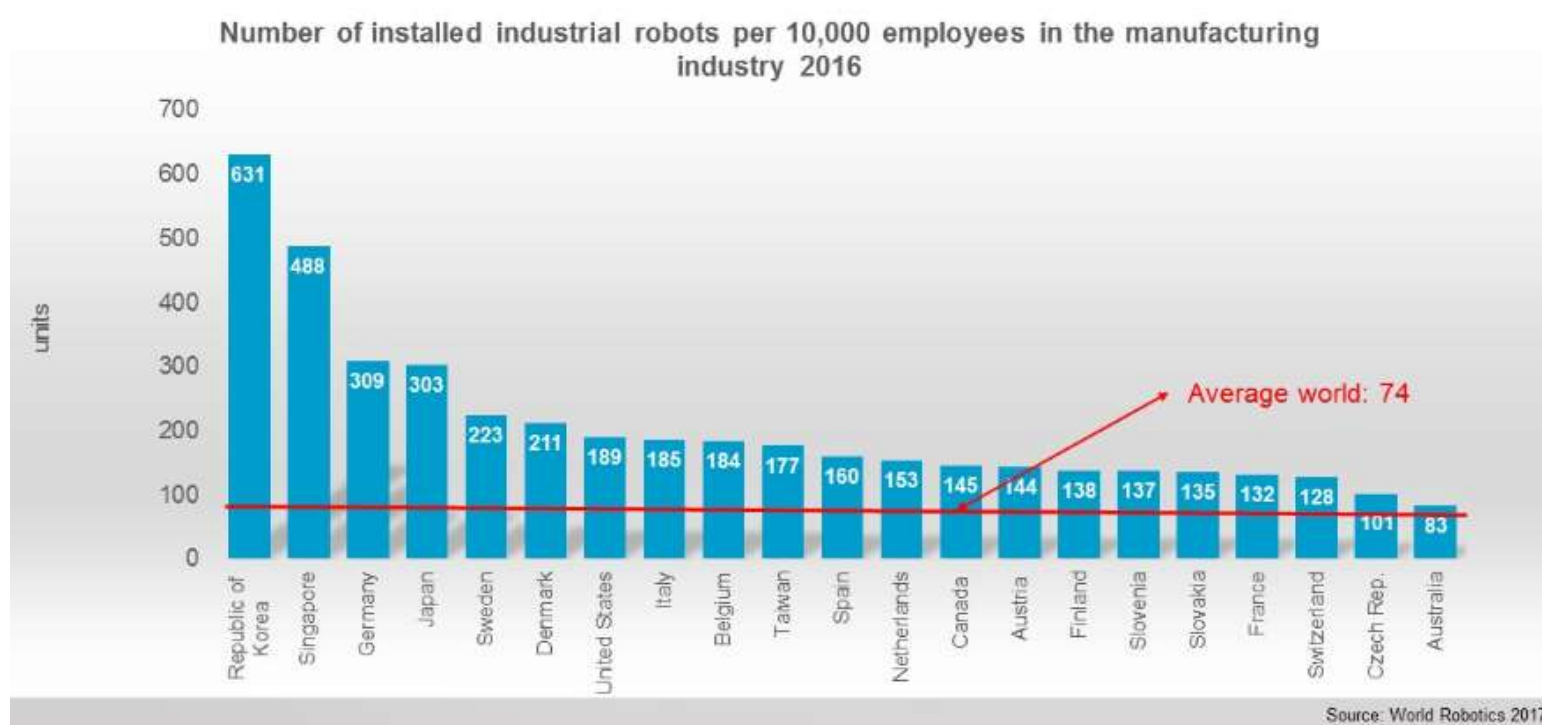


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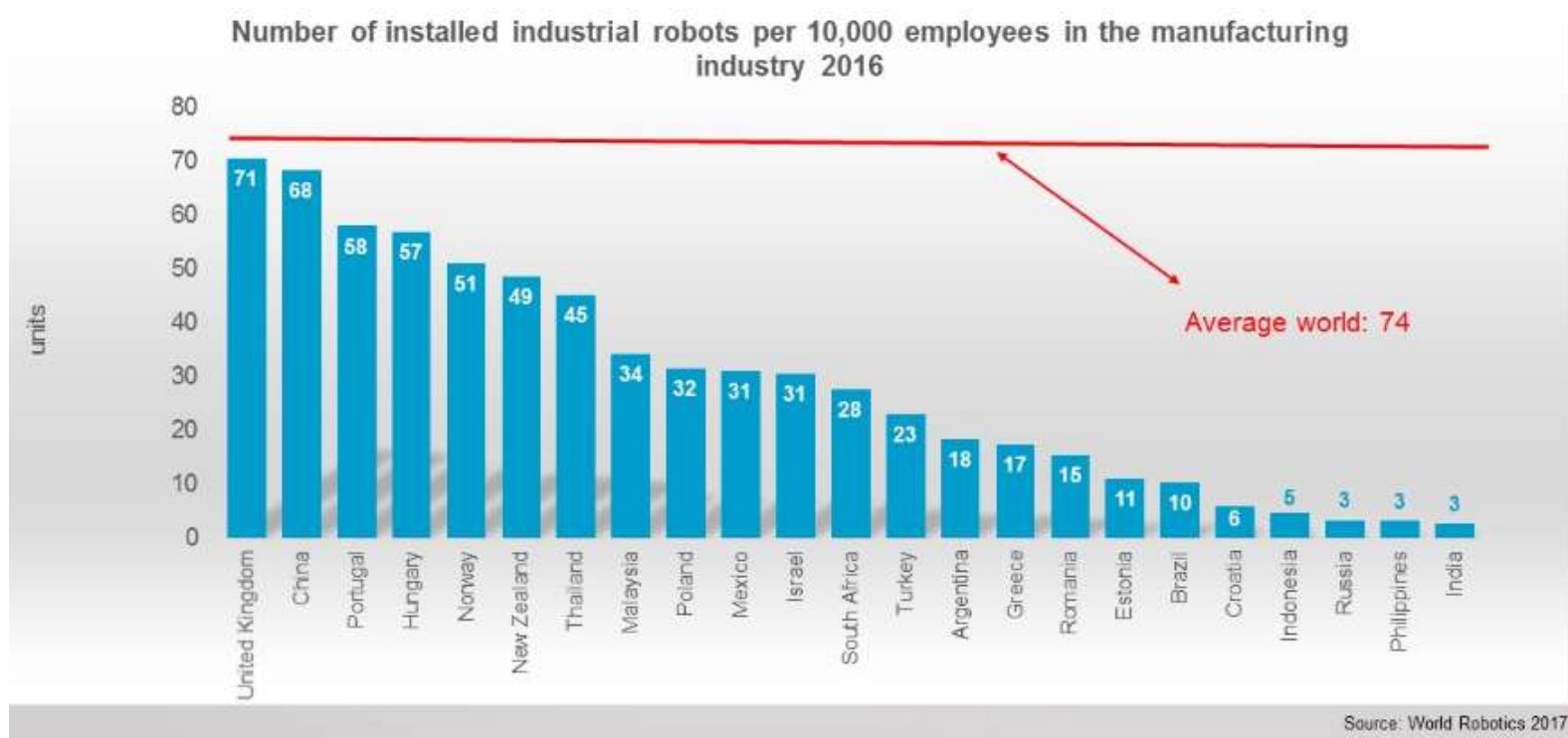
380 robôs em 2018  
21% de Market Share

Fonte: IFR 2019

# ROBÔS INSTALADOS / 10.000 EMPREGADOS

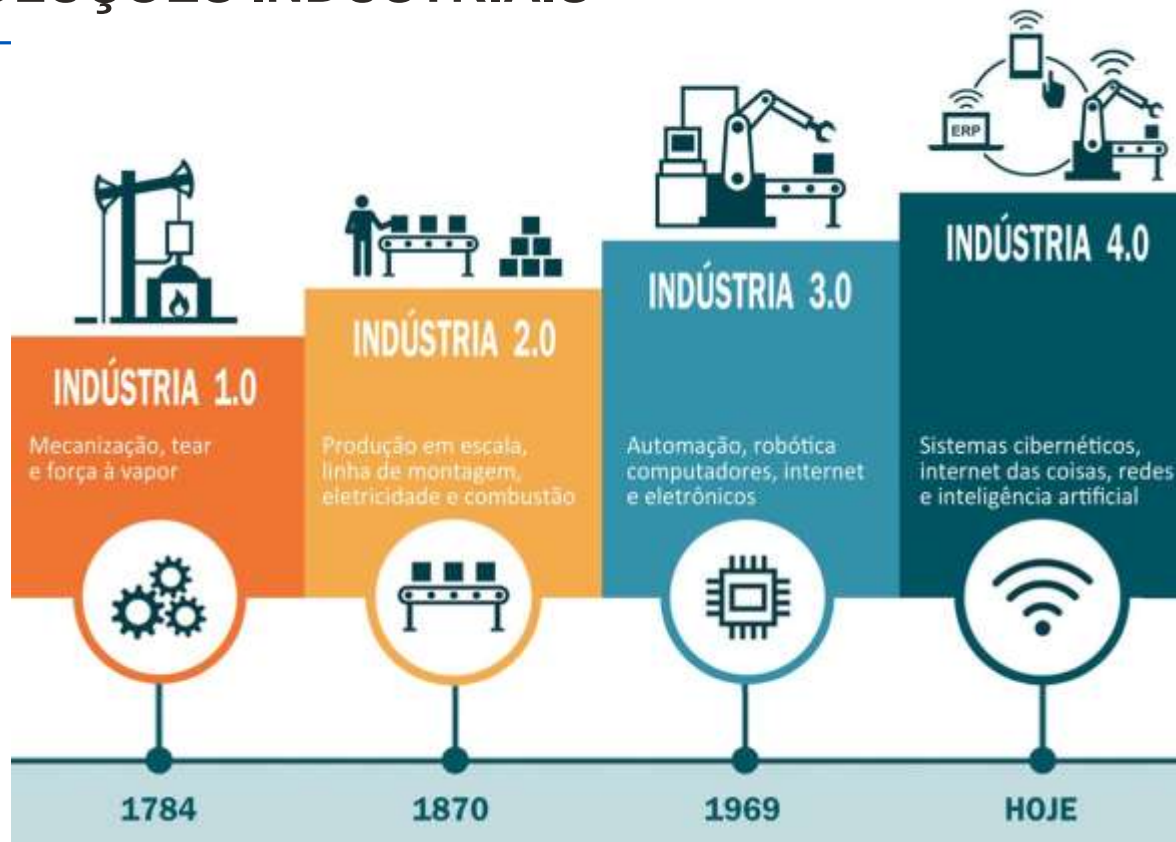


# ROBÔS INSTALADOS / 10.000 EMPREGADOS





# AS REVOLUÇÕES INDUSTRIAIS



# ROBÔS COLABORATIVOS – INDÚSTRIA 4.0



## Robôs **colaborativos**:



- 10Kg de payload
- 1200mm de raio de alcance
- 12 sensores de torque
- Controle do modo colaborativo (PFL)
- Controle de velocidade e área (FSU)
- Programação off-line
- Controlador YRC1000
- Instalação: Solo, teto, parede e inclinado

# APLICAÇÃO COLABORATIVA X ROBÔ COLABORATIVO

▶ **Aplicação Colaborativa:** Robô industrial + FSU + Scanner de área



# ROBÔS PARA SOLDA ARCO E PONTO

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**MA1440**



**MA2010**



**MA3120**



**MS165  
MS210**

# ROBÔS PARA MANIPULAÇÃO



GP8



GP12



GP25



GP50



GP180



GP280



GP600

# ROBÔS PARA PALETIZAÇÃO

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**MPL80**



**MPL160**



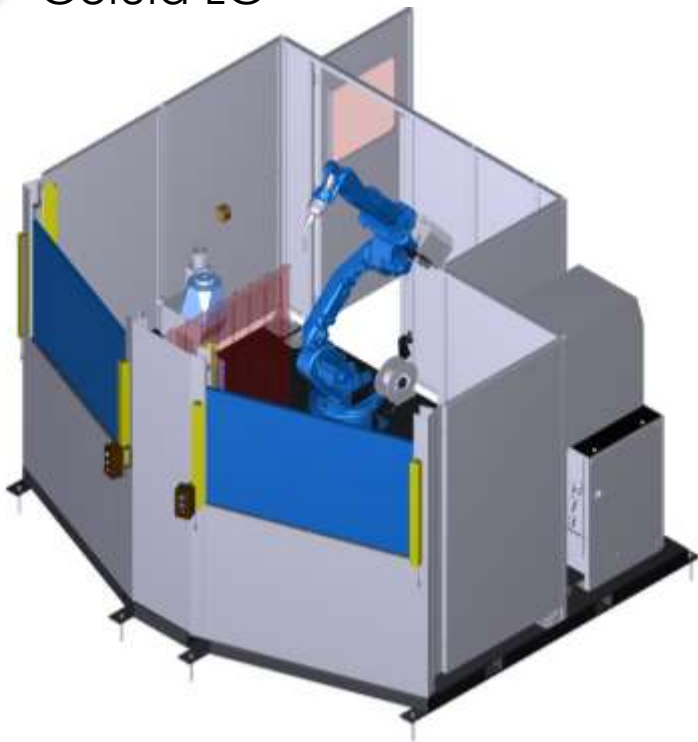
**MPL300**



**MPL500**

# CÉLULAS ROBOTIZADAS

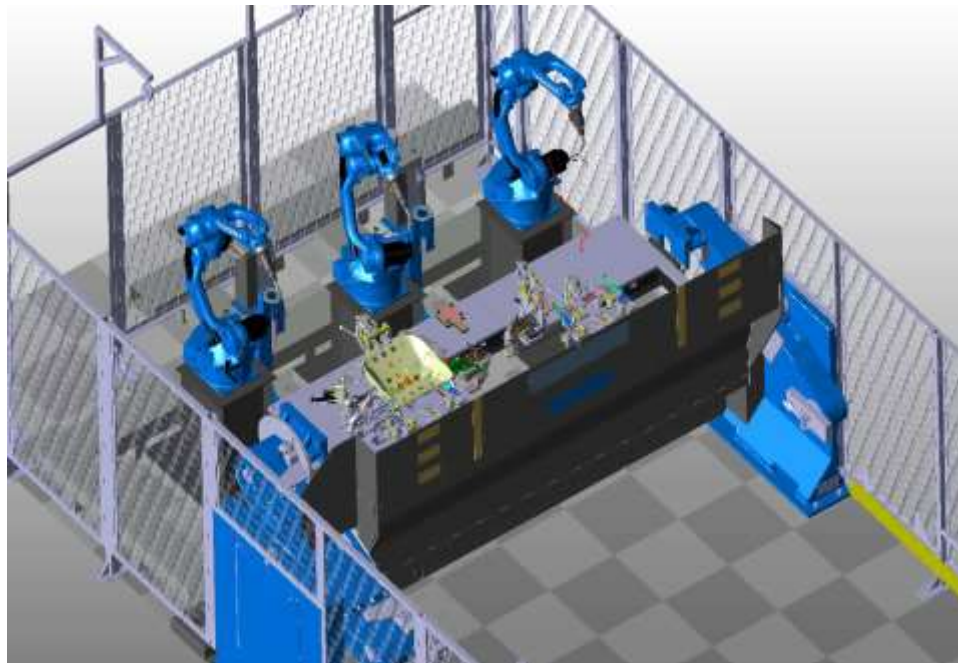
## ▶ Célula LC



# SIMULAÇÃO EM 3D

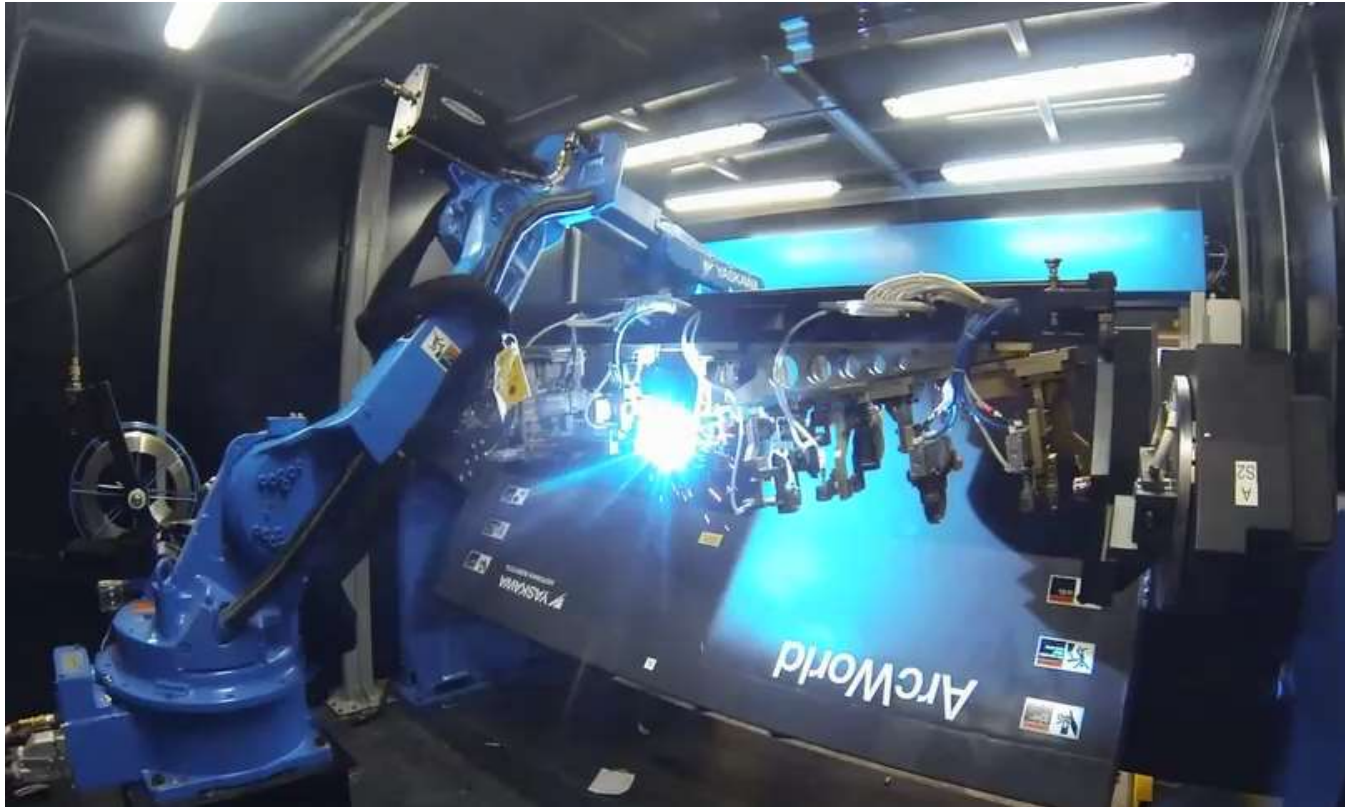
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▶ **Simulação** prévia do processo – Software MotoSim:

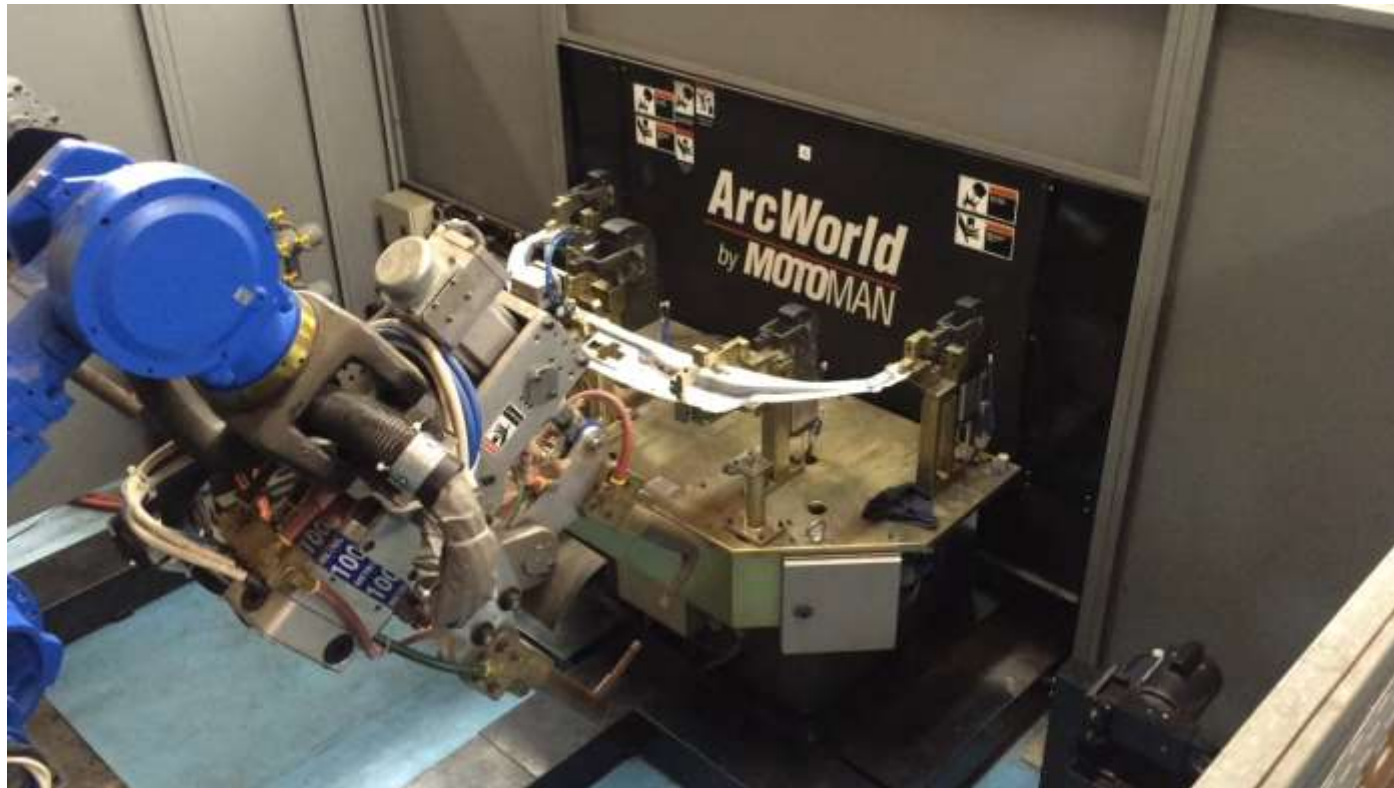




## VIDEO – CÉLULA DE SOLDA MIG



# VIDEO – CÉLULA DE SOLDA PONTO



# VIDEO – CÉLULA DE ENCAIXOTAMENTO DE BEBIDAS

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# YASKAWA

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