

# HC20XP

## Human-Collaborative Robot



### Key Benefits

Enables humans to safely work with robots

Thru-arm utilities eliminate external cables and associated risks, and simplify end-of-arm tooling installation

Cast aluminum construction for industrial durability

Designed to avoid pinch points, increasing worker safety

Easy teaching for quick implementation

Can reach full, 80-inch tall pallets without an elevator

### Specifications

20 kg payload

1,700 mm maximum reach

±0.05 mm repeatability

### Applications

Assembly

Machine Tending

Material Handling

Packaging

Palletizing

### Controllers

YRC1000

YRC1000micro

- 6-axis robot designed for a wide variety of collaborative applications.
- Power and force limiting technology is used to protect the worker from potentially harmful contact situations.
- Depending on risk assessment, the HC20XP can operate without additional protective measures such as a safety fence, resulting in reduced cost and space requirements.
- Simple and easy to program, enabling the operator to quickly perform changeovers.
- Safety standards
  - TUV-certified to ISO 13849-1: Safety functions industrial robot controller, Category 3 PLd
  - Complies with ISO 10218-1: 5.10.5 Power and Force Limiting
  - Complies with ISO TS 15066
- IP67 rating and easy-to-clean surface for use in sanitary environments where wipe/wash is required. NSF H1 food-grade grease is included for use in environments where there is a possibility of incidental food contact.
- The HC20XP allows for hand-guided programming without requiring a teach pendant.
- Thru-arm Category 6 cable enables a wide variety of communication options for tooling.

### The CASE for Collaboration

#### **CAPABLE – improves production rate**

- Industrial-grade payload and speed for real world applications
- Can be used in a wide variety of handling and assembly applications
- Easily integrated into factory automation systems using discrete I/O or fieldbus networks such as Ethernet/IP

#### **AFFORDABLE – quickly achieves ROI**

- Reduced physical guarding
- Simplified, built-in networked safety I/O
- Built on Yaskawa legacy of quality and reliability

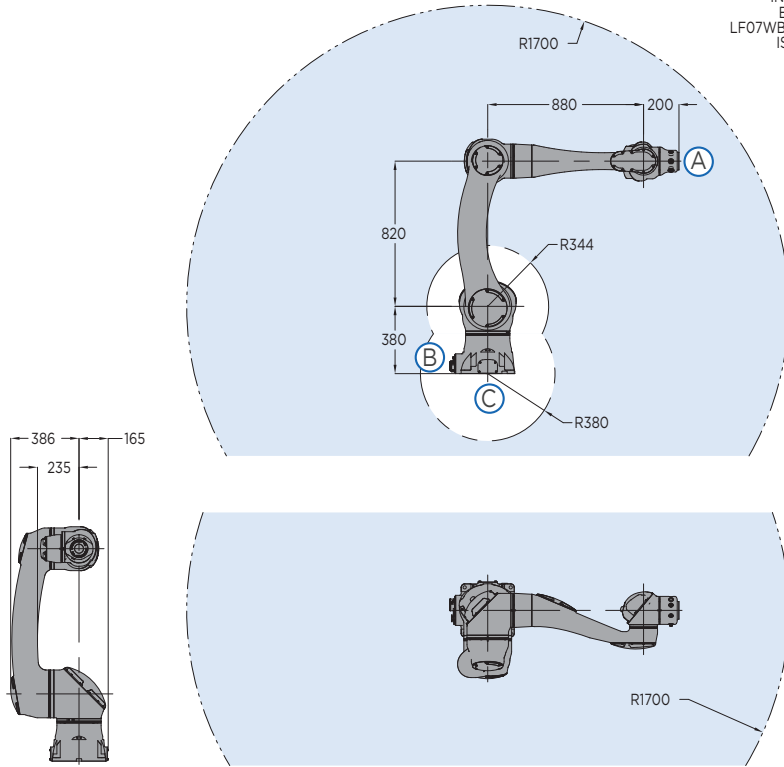
#### **SAFE – reduces risk**

- Advanced pinchless geometry
- Innovative thru-arm utilities
- Power and force limiting with FSU (Functional Safety Unit)

#### **EASY – empowers employees**

- Teach by hand guiding
- Quick fault recovery
- Simplifies basic training needs

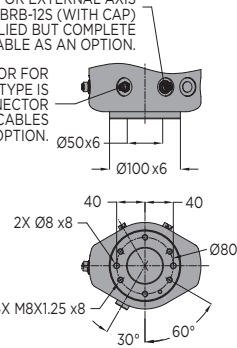
# HC20XP Robot



## VIEW A

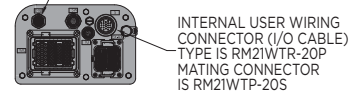
INTERNAL USER WIRING CONNECTOR FOR EXTERNAL AXIS (ENCODER CABLE) TYPE IS LF10WBRB-12S (WITH CAP) MATING CONNECTOR IS NOT SUPPLIED BUT COMPLETE CABLES ARE AVAILABLE AS AN OPTION.

INTERNAL USER WIRING CONNECTOR FOR EXTERNAL AXIS (POWER CABLE) TYPE IS LF07WBRB-6S (WITH CAP) MATING CONNECTOR IS NOT SUPPLIED BUT COMPLETE CABLES ARE AVAILABLE AS AN OPTION.

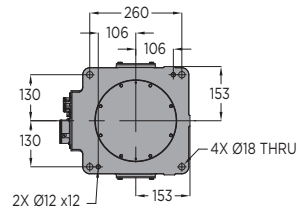


## VIEW B

ETHERNET CABLE CONNECTOR M12 X-CODED (WITH CAP) MATING CONNECTOR IS M12 X-CODED (PLUG)



## VIEW C



All dimensions are metric (mm) and for reference only. Request detailed drawings for all design/engineering requirements.

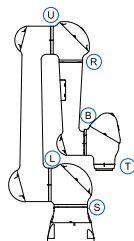
## SPECIFICATIONS

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [N•m]	Allowable moment of inertia [kg•m <sup>2</sup> ]
S	±180	80	-	-
L	±180	80	-	-
U	+247/-67	120	-	-
R	±210	130	58.8	4
B	±180	180	58.8	4
T	±210	180	29.4	2

Mounting Options: Floor, Wall, Ceiling, Tilt

## Options

- Third-party function-specific collaborative tooling and accessories



### AXES LEGEND

S-Axis: Swivel Base  
L-Axis: Lower Arm  
U-Axis: Upper Arm  
R-Axis: Arm Roll  
B-Axis: Wrist Bend  
T-Axis: Tool Flange

Item	HC20XP
Controlled axes	6
Maximum payload [kg]	20
Repeatability [mm]	±0.05
Maximum reach [mm]	1,700
I/O Expansion	Ethernet/IP, DeviceNet, Profibus, Profinet, CC-Link and other industrial networks available
Tool Center Point (TCP)	Non-collaborative mode: 1000 mm/s Collaborative mode: 250 mm/s* (factory default)
Internal user I/O cable	6 X 0.2 mm <sup>2</sup> and 8 X 0.3 mm <sup>2</sup> wires
Power requirements	YRC1000 YRC1000micro
	Three-phase 380-480 VAC 50/60 Hz Three-phase 200-230 VAC 50/60 Hz
Power rating [kVA]	1.5
Weight [kg]	140
IP classification	IP67
Safety certification	TUV Rheinland, ISO 13849-1
Designed to meet	Functional Safety, Cat. 3 PLd, Safety Functions, EN ISO 13849:2008 PLd

\* Collaborative mode speed is user-defined based on safety assessment

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