

HC20DTP

DIRECT TEACH HUMAN-COLLABORATIVE WELDING ROBOT

KEY BENEFITS

Enables humans to safely work with robots

Easily adds robotic welding capacity to your production

Supplements manual welding

Industry leading IP67 rating and cast aluminum construction for industrial durability

Advanced pinchless geometry avoids pinch points, increasing safety

Direct teaching for quick implementation

Common ISO tool mounting flange and electrical connections provide quick and easy deployment

SPECIFICATIONS

20 kg payload

1,900 mm maximum reach

1,700 mm effective reach

0.05 mm repeatability

APPLICATIONS

Welding

CONTROLLER

YRC1000



- 6-axis robot designed for a wide variety of collaborative applications.
- Hand-guided teaching without a teach pendant enables easy programming for fast changeovers.
- Portable robot can be easily relocated depending on production needs.
- Power and force limiting technology is used to protect the worker from potentially harmful contact situations.
- Depending on risk assessment, the HC20DTP can operate without additional protective measures such as a safety fence, resulting in reduced cost and space requirements.
- Safety standards
 - Functional safety validated to Cat3 PLd
 - Machine safety validated to Cat3 PLe
 - Complies with ISO TS15066
- Universal Weldcom Interface (UWI) enables full control of any power source brand.
- Easy-to-clean surface for use in harsh environments.
- I/O jog controls robot arm quickly with an intuitive hardware remote – used to program entire jobs or touch up points (option).

THE CASE FOR COLLABORATION

CAPABLE – improves production rate

- Industrial-grade payload and speed for a wide variety of applications
- Easily integrated into factory automation systems using discrete I/O or fieldbus networks such as EtherNet/IP
- Built on Yaskawa legacy of quality and reliability

AFFORDABLE – quickly achieves ROI

- Reduced physical guarding**
- Simplified, built-in networked safety I/O
- Integrated thru-arm utilities

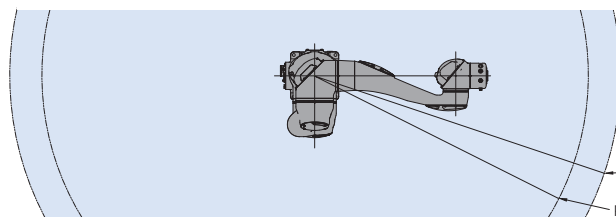
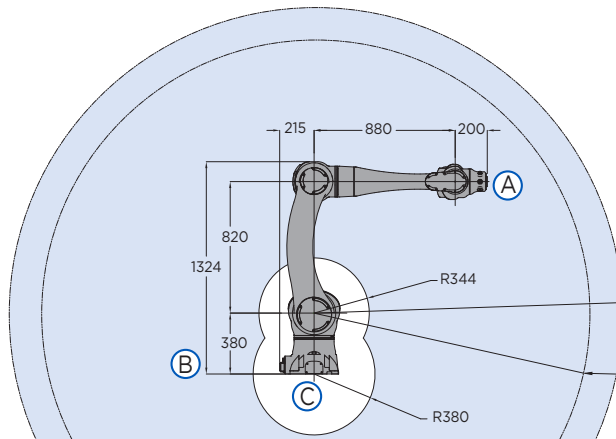
SAFE – reduces risk

- Advanced pinchless geometry
- Configurable power and force limiting (PFL) of all six axes of motion
- Powerful and flexible Functional Safety Unit for speed and position limiting

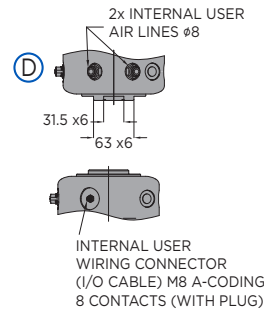
EASY – empowers employees

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

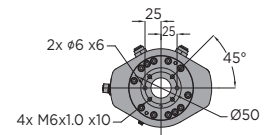
HC20DTP WELDING ROBOT



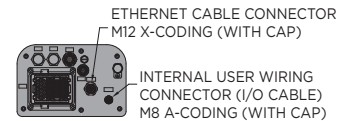
1,900 mm maximum reach, 1,700 mm effective reach.
All dimensions are metric (mm) and for reference only.
Request detailed drawings for all design/engineering requirements.



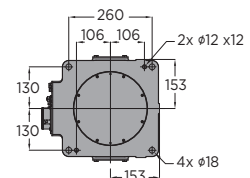
VIEW A



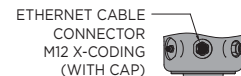
VIEW B



VIEW C



VIEW D



SPECIFICATIONS

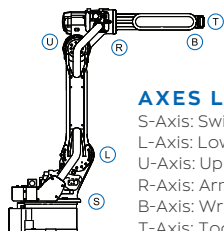
Axes	Maximum motion range	Maximum speed	Allowable moment	Allowable moment of inertia
	degrees	°/sec	N·m	kg·m ²
S	±210	80	-	-
L	±180	80	-	-
U	+247/-67	120	-	-
R	±210	130	58.8	4
B	±180	180	58.8	4
T	±210	180	29.4	2

Mounting Options: Floor, Wall, Tilt or Ceiling

Safety Compliance And Validation	
Safety Standard	Third Party
Functional safety validated to Cat3 PLd. EN ISO 13849:2008	TUV Rheinland
Machine safety validated to Cat3 PLe. EN ISO 13849:2008	TUV Rheinland

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	Unit	HC20DTP
Controlled axes		6
Maximum payload	kg	20
Repeatability	mm	0.05
Maximum reach	mm	1,900
Effective reach	mm	1,700
I/O Expansion		Ethernet/IP, DeviceNet, Profibus, Profinet, CC-Link and other networks available
Air Lines		2 hoses; Internal diameter: 5 mm Maximum pressure: 400kPa (4 kgf/cm ² or less)
Tool Center Point (maximum linear speed)		Non-collaborative mode: 2,000 mm/s * Collaborative mode: 1,000 mm/s **
Internal user I/O cable		0.1 mm ² x 8 conductors; Maximum allowable current is 1.5 A or less for each conductor
Ethernet Cable		Cat. 6
Power requirements YRC1000		Three-phase 380-480VAC 50/60Hz
Power rating	kVA	1.5
Weight	kg	140
Effective Mass	kg	116.7
IP classification		IP67 (all axes)
Temperature Range		0° C to 40° C
Relative Humidity		20% to 80% non-condensing

* Non-collaborative mode maximum speed is based on payload

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

YASKAWA

YASKAWA AMERICA, INC. 100 Automation Way | Miamisburg, OH 45342
937.847.6200 | motoman.com

Technical specifications subject to change without notice. | Motoman is a registered trademark.
All other marks are the trademarks and registered trademarks of Yaskawa America, Inc.
DS-973-B ©2022 Yaskawa America, Inc. APRIL 2022