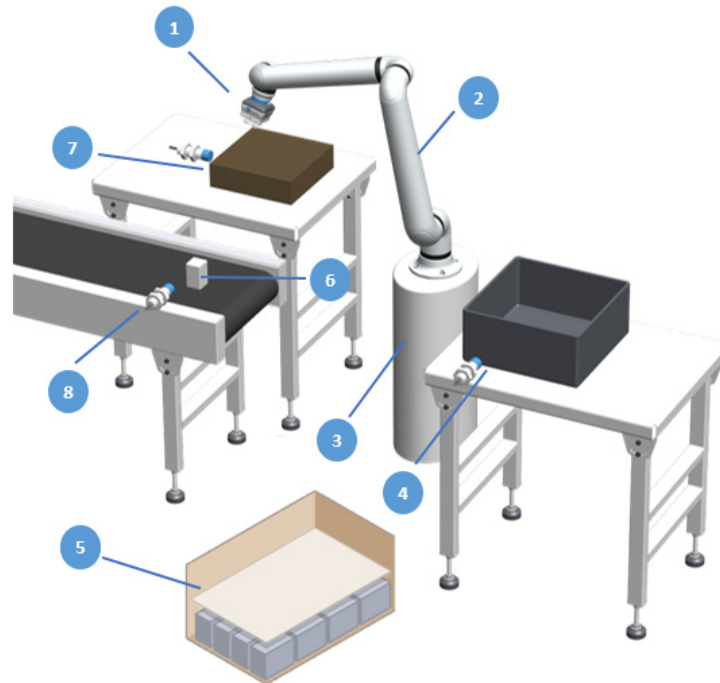# DATASHEET

D:PLOY - PACKAGING APPLICATION

v1.0

Packaging Application

1/a.	Grippers	2FG7	2FGP20	3FG15	MG10	RG2/RG6	SG-a-H/SG-b-H	VG10	VGC10	VGP20	Gecko SP1/3/5
1/b.	Tool mounting	Quick Changer			Angle Bracket 45°			Angle Bracket 90°			
2.	Robot brands	ABB	Denso	Doosan	FANUC	FANUC CRX	Techman	UR		Omron TM	Yaskawa
3.	Robot mounting	Can be mounted at any height				Can be tilted 0°, 30°, 45° or 90°					
4.	Outfeed container (parts to pack into)	**Any size** (that the gripper and the robot can handle)			Can be mounted at any height, and **tilted at any angle** (container needs to be tought - 1/2/3 points)			**Outfeed container** device required. It keeps track of how full, and **stop until it is emptied**			
5.	Pattern options	**Automatic** (optionally having the labels facing outward, can calculate pattern to fill)						**Manual** (easy to use pattern editor, optionally have labels rotated outward, spacing within parts or from edges for snapping)			
6.	Product size/ weight/ type	**Any size** that the gripper can handle	**Any weight** that the gripper and robot can handle					**Cuboid** or **Cylindrical** (both may not be available on a given gripper)			

7.	Interlayer sheet	**Cardboard** or **Paper** (full or half size)	Sheets can be picked from a **fixed position** (spring loaded tray) or based on thickness D:PLOY can **"search"** for the next one (normal tray)	**Horizontal** or **tilted** trays supported (can be placed anywhere within robot reach)
8.	Infeed type / multiple parts	**Conveyor belt** or **Turn table**	**Single part** or **grouped parts** (multiple parts at once for faster cycle time - recommended ot use two sensors in a twin signal configuration)	Can be at any height, and **tilted at any angle**

Additional information

1a. Grippers

Only OnRobot tools are supported, but can be customized with any **OnRobot accessory**, or custom fingertip/vacuum accessory.

		Finger grippers					Vacuum grippers			Special grippers		
		2FGP20	2FG7	3FG15	RG2	RG6	VG10	VGC10	VGP20	Gecko	MG10	SG
Can grip - single part	**Cuboid**	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
	Cylindrical	✓	✓ *	✓	✓ *	✓ *	✓	✓	✓	✓	✓	✓
Can grip - multiple parts	**Cuboid**	✗	✗	✗	✗	✗	✓ **	✓ **	✓ ***	✗	✗	✗
Can pick interlayer sheets		✗	✗	✗	✗	✗	✓	✓	✓	✗	✗	✗
Can drop part		✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓

* With special fingertips.

** Up to two parts.

*** Up to four parts.

1b. Tool mounting

Dual QC and HEX-E/H QC are not supported.

2. Robot brands

Supported robot models and controllers

Robot Type	ABB	Denso	Doosan	FANUC	FANUC CRX	Techman	UR	Omron TM
Robot Model	CRB 15000-5/0.95 IRB 1100-4/0.58 IRB 1100-4/0.47 IRB 120 IRB 1200-5/0.9 IRB 1200-7/0.7 IRB 1600-6/1.2 IRB 1600-6/1.45 IRB 1600-10/1.2 IRB 1600-10/1.45	VM-6083 VM-60B1 VP-6242 VS050A3 VS087A4 VP-5243 VS-050-S2 VS-087A4 VS-6577 VS-6556 VS-087	A0509 A0509s A0912 A0912s H2017 H2515 M0609 M0617 M1013 M1509	CR-4iA CR-7iA CR-7iA/L LR Mate 200iD LR Mate 200iD/4S LR Mate 200iD/7L LR Mate 200iD/14L	CRX-10iA CRX-10iA/L CRX-20iA/L CRX-25iA/L CRX-5iA	TM12 TM14 TM5-700 TM5-900	UR10 UR10e UR16e UR3 UR3e UR5 UR5e	TM12 TM14 TM5-700 TM5-900
Robot Controller	IRC5 OmniCore	RC8	CS-03 CS-04	R-30iB R-30iB Plus R-30iB Mini Plus	R-30iB Mini Plus	TM	CB3 e-Series	TM

3. Robot mounting

The robot cannot be facing downward (ceiling mounted).

4. Outfeed container (parts to pack into)

Only one outfeed container is supported. The **Outfeed container** sensor can be any ultrasonic, laser/infra or any other type 24V digital sensor.

5. Pattern options

All calculations are done in the cloud using fast servers to save time.

6. Product size/weight/type

For parts smaller then the gripper, **drop part** function can be used if bottom cannot be reached.

7. Interlayer sheet

This is optional, and only shown if **Interlayer sheet sensor** device is configured in the cell setup. The sensor can be any ultrasonic, laser/infra or any other type 24V digital sensor.

8. Infeed type / multiple parts

Integrator must take care of the conveyor belt driving and timing (based on the infeed sensor). The infeed sensor can be any ultrasonic, laser/infra or any other type 24V digital sensor.

Estimated cycle time

The displayed cycle time in D:PLOY is an estimate. The actual cycle time might vary, depending on the parameters of your application and your robot:

- For ABB, the error on the estimation is expected to be less than 5%.
- For Denso, the error on the estimation is expected to be less than 5%.
- For Doosan, the error on the estimation is expected to be less than 15%.
- For FANUC, the error on the estimation is expected to be less than 10%.
- For Techman, the error on the estimation is expected to be less than 10%.
- For UR, the error on the estimation is expected to be less than 5%.
- For Omron TM, the error on the estimation is expected to be less than 10%.

Layout configuration

- With or without interlayer sheet
- Single or groupped parts being picked
- Infeed/interlayer at any angle

Examples