

# ControlTech



Authorised  
Distributor

A ROCKWELL AUTOMATION PARTNER

# PRŮMYSLOVÉ A EDUKATIVNÍ ROBOTY

VLADYKA PAVEL





# DOBOT

Dobot každoročně uvádí na trh nové technologie a nové produkty, aby vyhověl potřebám rozvoje průmyslu.



CR3



CR7



CR5



CR16



CR12







CR10



CR3L

# CR Collaborative Robot Series

## Specifications

Product Name	 <b>CR3</b>	 <b>CR3L</b>	 <b>CR5</b>	 <b>CR7</b>
Weight	16.5kg	39.5kg	25kg	24.5kg
Rated Payload	3kg	3kg	5kg	7kg
Reach	620mm	1700mm	900mm	800mm
Max. Reach	795mm	1919mm	1096mm	990mm


**CR10**

**CR12**

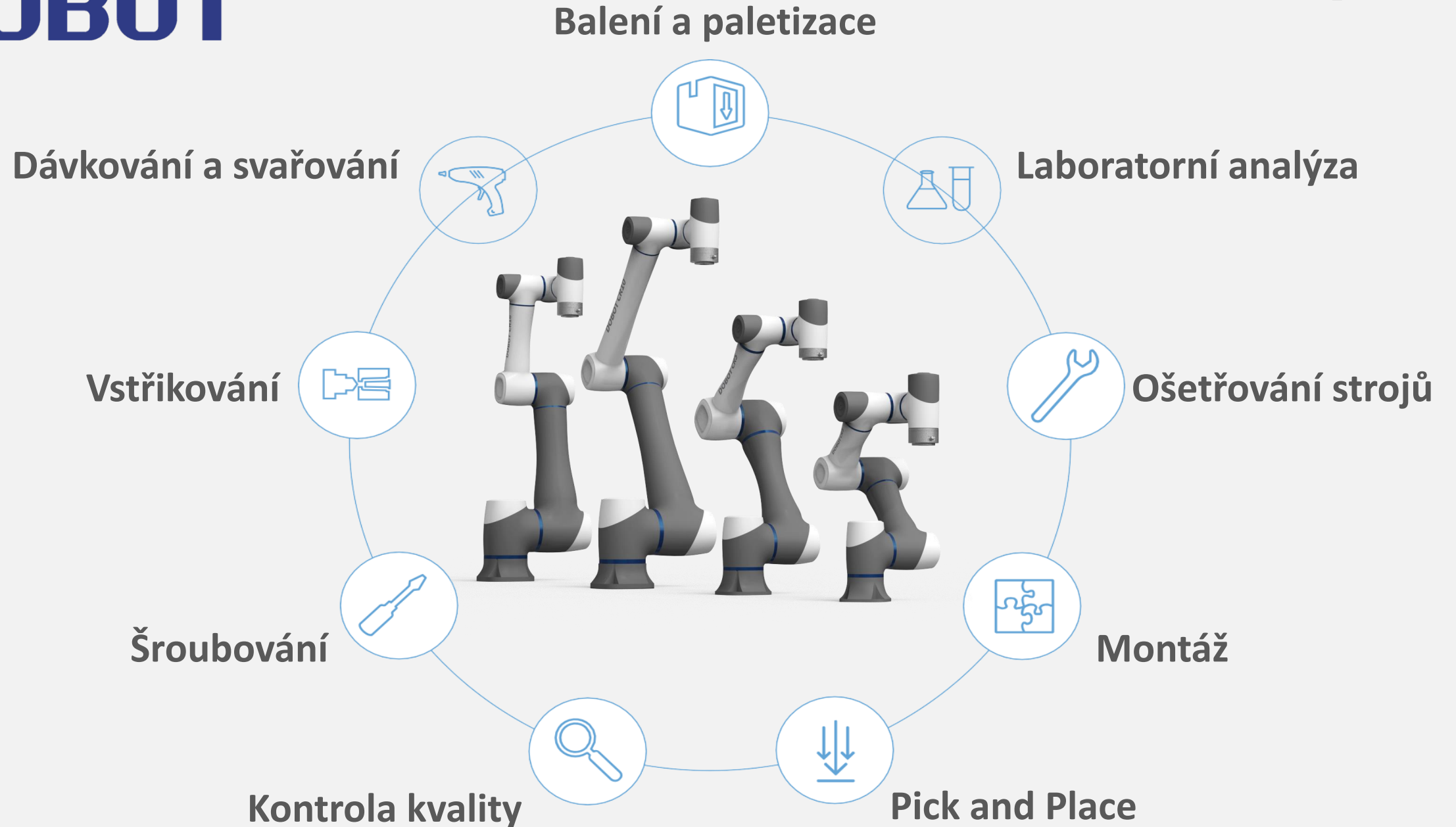
**CR16**

Product Name	CR10	CR12	CR16
Weight	40kg	39.5kg	40kg
Rated Payload	10kg	12kg	16kg
Reach	1300mm	1200mm	1000mm
Max. Reach	1525mm	1425mm	1223mm



# DOBOT

# Aplikace





# DOBOT

## BEZPEČNÝ

- Monitorování v reálném čase každých 10 ms
- Rozsah detekce narušení 15 cm
- Bez kolizí
- Vyhýbání se překážkám



## JEDNODUCHÝ

- Ruční navádění robotů
- Grafické programování
- Ovládání v systémech Android, iOS a Windows



## FLEXIBILNÍ

- 20 minut nastavení
- 1 hodina na uvedení do provozu
- Více vstupně-výstupních a komunikačních rozhraní
- Široká kompatibilita s periferními komponentami



## ODOLNÝ

- **30000** hodin životnost
- ISO9001 ISO14001 GB/T29490
- **12-měsíční** záruka







# DOBOT



competitive price

2 to 3 times price of Dobot

Brand		Dobot CR5	UR5e	TM5-900	HCR-5
Weight(kg)		23kg	20.6kg	22.6kg	21kg
Payload(kg)		5kg	5kg	4kg	5kg
Reach(mm)		900mm	850mm	900mm	915mm
Repeatability		±0.03mm	±0.03mm	±0.05mm	±0.1mm
Maximum tool speed		3m/s	1m/s	1.4m/s	1m/s
Joints move range	J1	±360	±360	±270	±360
	J2	±360	±360	±180	±360
	J3	±160	±360	±155	±165
	J4	±360	±360	±180	±360
	J5	±360	±360	±180	±360
	J6	±360	±360	±270	±360



**DOBOT**





**DOBOT**





# DOBOT





# Robot DOBOT CR – SAFE SKIN

PRŮMYSLOVÝ, KOLABORATIVNÍ, DESKTOPOVÝ



```
1 SetSafeSkin (1)
2 SetSafeSkin (0)
3
```



**DOBOT**

Robot DOBOT CR – SAFE SKIN





# DOBOT



**Robotiq**  
Gripper



**Schunk**  
Gripper



**Onrobot**  
Gripper



**SIASUN**  
Gripper



**DH-Robotics**  
Gripper



**Rochu**  
Gripper



**HITOBOT**  
Gripper



**SRT**  
Gripper



**Robotiq**  
Sensor



**Onrobot**  
Sensor



**LINKTOUCH**  
Sensor



**ATI**  
Sensor



**COGENEX**  
Vision



**MICROSCAN**  
Vision



**Hikvision**  
Vision



**Hikvision**  
Vision





# DOBOT

## NEUTRÁCEJTE ZA TEACH PENDANT



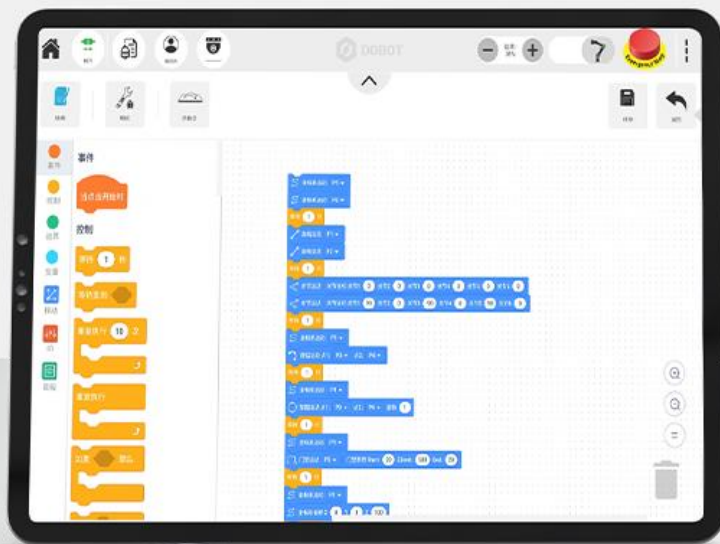
## POUŽÍVEJTE TABLET

doporučíme Vám tablet, kterým můžete robota ovládat



# DOBOT

## CR Studio



## DOBOT SCStudio





Home, Move, Stop, Jog, Teach, Run, Settings, Help, Emergency Stop, Programmer, 20%

User: 0 Coordinate...  
Tool: 0  
JOG Joint Unit: °  
J1 -72,362 X -25,059  
J2 16,4223 Y -377,50  
J3 -104,70 Z 459,957  
J4 -3,3128 Rx -176,97  
J5 92,6137 Ry 0,4579  
J6 -112,79 Rz -49,5951  
R: -1 D: -1 N: -1

J1- J1+  
J2- J2+  
J3- J3+  
J4- J4+  
J5- J5+  
J6- J6+

Workspace  
- Functional in...  
- thread  
src0  
point  
global

```
1 --WARNING!:Please keep enough room for the CR5 arm to move
2 Accel(100) --Set the "Go MoveJ GoR MoveJR" command acceleration
3 Speed(100) --Set the "Go MoveJ GoR MoveJR" command speed rate
4 AccelS(100) --Set the "Move Arc3 Circle3 MoveR Jump" acceleration
5 SpeedS(100) --Set the "Move Arc3 Circle3 MoveR Jump" command speed rate
6 CP(100) --Sets the smoothness of all movement instructions
7 --Example:Speed parameters can be changed to observe the motion
8 --An infinite loop
9 for i=1,10 do
10 Go (P1)
11 Go (P2)
12 Move (P1)
13 Move (P2)
14 end
15 while true do
16 print("Please set the first DI signal high")
17 if DI(1)==1 then
18 DO(1,ON)--The first IO signal output
19 Wait(2000)--Script waits for 3s
20 DO(2,ON)--The second IO signal output
21 Wait(2000)
22 DO(1,OFF)--The first IO signal is off
23 Wait(2000)
24 DO(2,OFF)--The second IO signal is off
25 Wait(2000)
26 break
27 end
28 end
```

+ IO  
- MOVE  
CP  
Arch  
Speed  
LimZ  
SpeedS  
Accel  
AccelS  
Go  
MoveJ  
Move  
Arc3  
Jump  
Circle3  
GetPose  
GetAngle  
+ Modbus  
+ Process  
+ Relative MOVE  
+ System  
+ TCP/UDP

2021-03-13 12:47:37 User Operation: robot connected!  
2021-03-13 12:51:08 User Operation: Robot state Changed: enable  
2021-03-13 12:52:02 User Operation: open project: Functional instruction  
2021-03-13 12:52:02 User Operation: autoManual Changed: manual  
2021-03-13 12:52:02 User Operation: Robot state Changed: enable



User: 0  
 Tool: 0  
 Coordinate...

JOG Joint Unit:°

J1	-72,362	X	-25,059
J2	16,4223	Y	-377,50
J3	-104,70	Z	459,957
J4	-3,3128	Rx	-176,97
J5	92,6137	Ry	0,4579
J6	-112,79	Rz	-49,595

R: -1 D: -1 N: -1

J1- J1+  
 J2- J2+  
 J3- J3+  
 J4- J4+  
 J5- J5+  
 J6- J6+

### CurrentProject: test1

- Events
- Control
  - wait 1 seconds
  - wait until
  - repeat 10
  - forever
- Operators
- Variables
- Move
  - if then
  - if then else
  - repeat until
  - Pause
  - sleep 1 seconds
- IO
- Modbus
- TCP

```

When start button clicked
  repeat 15
    line move P1
    line move P2
    line move P3
  set digital output tool DO 1 OFF
  
```

#### Move

```

line move InitialPose
joint move
coordinate move InitialPose
line offset move X 30 Y 0 Z
joint offset move joint1 30 joint2
coordinate offset move X 30 Y
arc point1: InitialPose point2:
circle point1: InitialPose point2:
  
```

#### TCP

```

open SOCKET IP: 192.168.5.10 port:
get open SOCKET result
create SOCKET IP: 192.168.5.1 port:
get create SOCKET result
close SOCKET
get variable type: string name:
SOCKET send variable
get SOCKET send result
  
```

#### IO

```

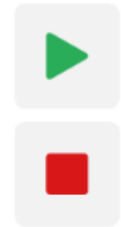
set digital output controller DO
wait digital input controller DI
set analog output 1 to 1
digital input controller DI 1
get analog input controller 0
  
```

#### Modbus

```

get input register address 0 type U1
get holding register address 0 type
get discrete input register address 0
get coils register address 0
  
```

- New
- Save
- SaveAS
- Open
- Point





# DOBOT



+



C



C++



C#



python™

Python

ROS

ROS



MATLAB

Matlab

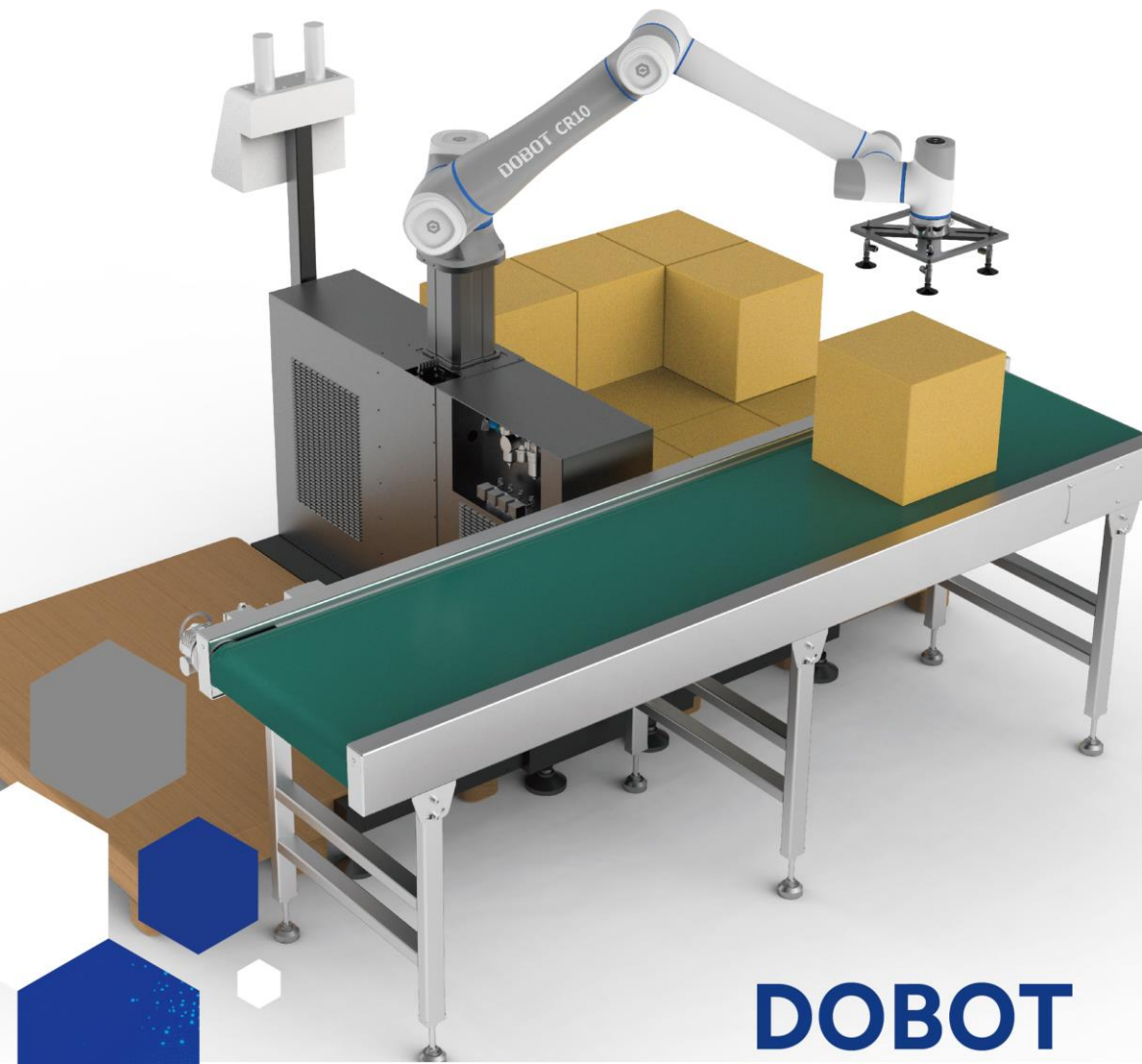


LabVIEW

LabView



Android

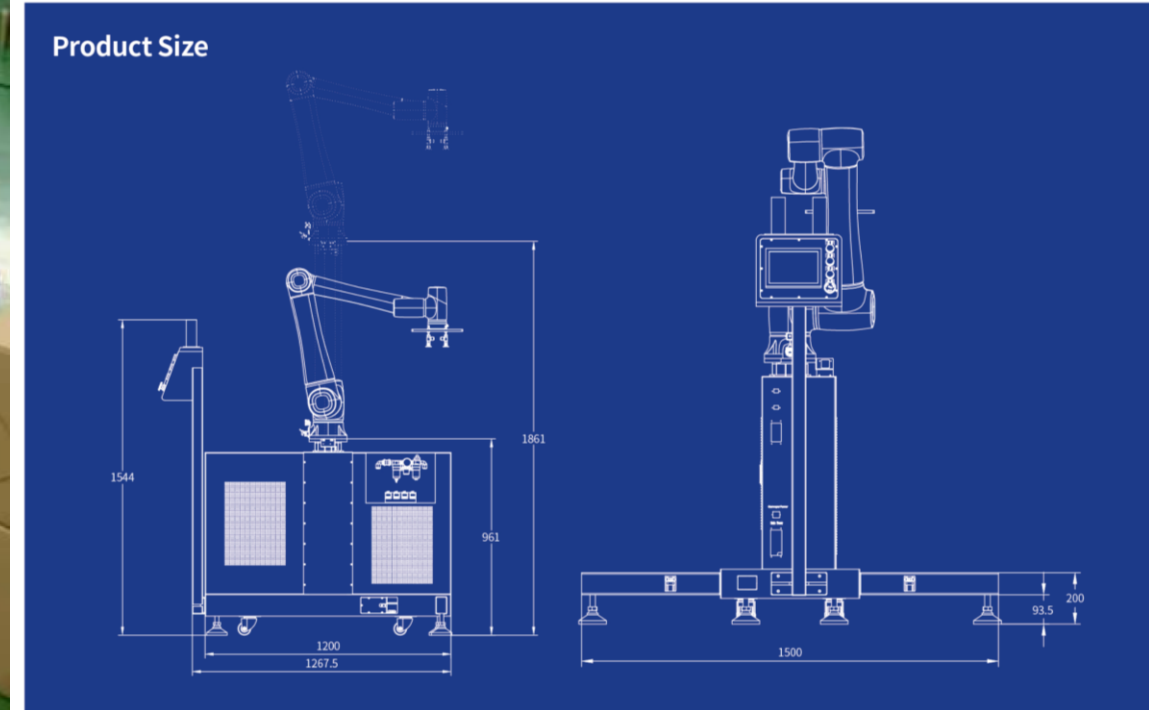


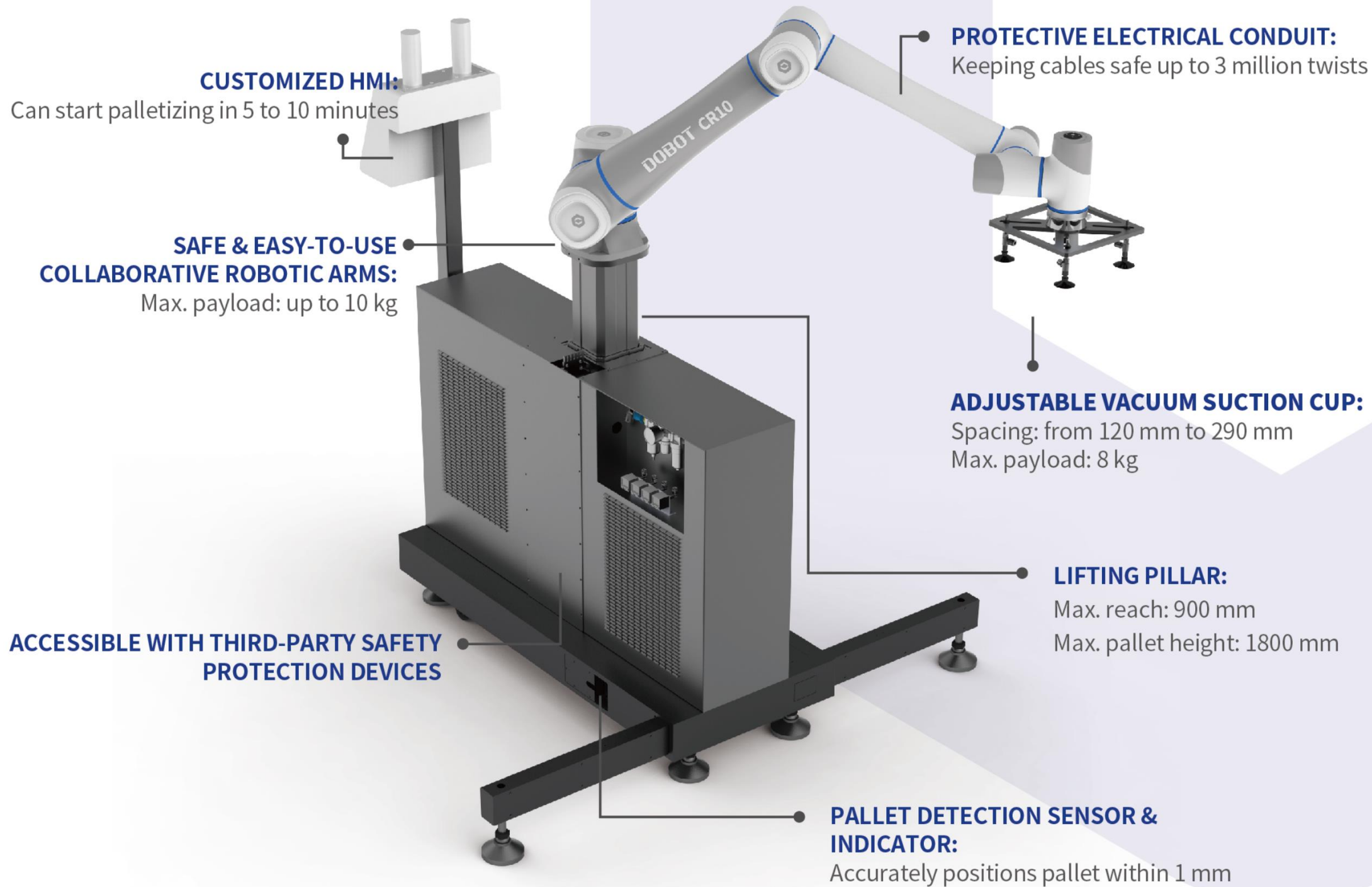
### DOBOT Palletizing Solution Specification

Item	Specification
Gripper	Vacuum Suction Cup
Max. Payload	8 kg (CR 10)
Min. Box Dimensions	50 X 50 X 50 mm
Max. Box Dimensions	300 X 300 X 300 mm
Max. Pallet Speed	Up to 7 boxes/object per minute (*1)
Pallet Height	500 mm to 1800 mm (*2)
Max. Pallet Dimensions	1219 mm X 1219 mm
Max. Lifting Pillar Speed	80 mm/s
Device Weight	250 kg
Power Supply	100~240V AC, 50/60Hz

(\*1:Differences in box size, box layout and gripper might affect actual pallet speed.)  
(\*2:Differences in the height of the center point of the second axis of the arm from the ground, the size and placement of the box, and different grippers may affect the actual stack height.)

**DOBOT  
PALLETIZING  
SOLUTION**  
STARTS IN 5 TO 10 MINUTES





**CUSTOMIZED HMI:**  
Can start palletizing in 5 to 10 minutes

**SAFE & EASY-TO-USE  
COLLABORATIVE ROBOTIC ARMS:**  
Max. payload: up to 10 kg

**ACCESSIBLE WITH THIRD-PARTY SAFETY  
PROTECTION DEVICES**

**PROTECTIVE ELECTRICAL CONDUIT:**  
Keeping cables safe up to 3 million twists

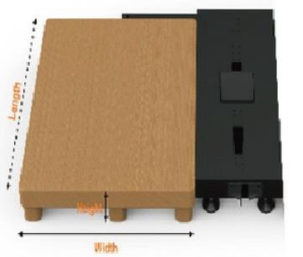
**ADJUSTABLE VACUUM SUCTION CUP:**  
Spacing: from 120 mm to 290 mm  
Max. payload: 8 kg

**LIFTING PILLAR:**  
Max. reach: 900 mm  
Max. pallet height: 1800 mm

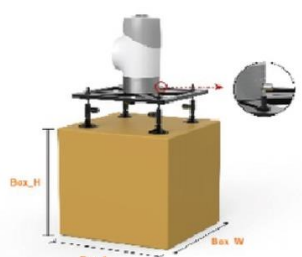
**PALLET DETECTION SENSOR &  
INDICATOR:**  
Accurately positions pallet within 1 mm

# 4-Step to Set Up


Start to Palletize in 5 to 10 Minutes

2022/04/22 15:57:31		System :	
Pallet		System	Log
Pallet	Pallet LEFT <input type="checkbox"/>		
Box	Pallet RIGHT <input type="checkbox"/>		
Pattern	Length <input type="text" value="0"/> mm		
Settings	Width <input type="text" value="0"/> mm		
	Height <input type="text" value="0"/> mm		


STEP 1: Enter pallet dimensions

2022/04/22 15:58:06		System :	
Pallet		System	Log
Pallet	Box_L <input type="text" value="0"/> mm		
Box	Box_W <input type="text" value="0"/> mm		
Pattern	Box_H <input type="text" value="0"/> mm		
Settings	Weight <input type="text" value="0.0"/> kg		

STEP 2: Enter the box dimensions & weight

2022/04/22 15:58:36		System :	
Pallet		System	Log
Pallet	Number on X Direction <input type="text" value="0"/>		
Box	Number on Y Direction <input type="text" value="0"/>		
Pattern	ΔW <input type="text" value="0"/> mm		
Settings	ΔL <input type="text" value="0"/> mm		
	Number of layers <input type="text" value="0"/>		

STEP 3: Set pallet pattern

2022/04/22 15:58:50		System :	
Pallet		System	Log
Pallet	Robot		
Box	With BOX Speed <input type="text" value="0.0"/> % Acc <input type="text" value="0.0"/> mm/s <sup>2</sup>		
Pattern	Without BOX Speed <input type="text" value="0.0"/> % Acc <input type="text" value="0.0"/> mm/s <sup>2</sup>		
Settings	Linear Axis Velocity <input type="text" value="0.00"/> mm/s Acc <input type="text" value="0.0"/> mm/s <sup>2</sup>		
	BOX Presence Input		

STEP 4: Set movement speed and acceleration







Introducing DOBOT MG400, a desktop collaborative robot

1

## Hand-Held Teaching

Gravity compensation

Save more than **80%** time during teaching

Teaching the MG400 to move is as easy



S

### Welcome to DobotStudio2020

- Brand new user interface
- Easy to use and user friendly
- More Dobot products will be supported

VERSION: 1.1.0-stable.202102091847  
Please email to pm@dobot.cc if you have any suggestions.

### Recent Projects

Test_LUA_001	2021-02-24 09:03:28
script_Test_LUA_001	
TEST_TaP_001	2021-02-24 09:02:30
playback_TEST_TaP_001	
test002_mata	2021-02-20 14:40:42
blockly_test002_mata	
test_sc_001	2021-02-19 08:30:12
blockly_test_sc_001	

Teach & Playback

DobotBlockly

Script

Remote Control

Directive Type

- Motion
  - move to
  - cartesian speed
  - joint speed
  - CP
  - sync
  - DO
  - DOInstance
- Logic
  - if/else
  - wait
  - loop

Variable List

var\_name =

Number

Text

Variable

Joint J1  J2   
J3  J4

Cartesian X  Y    
Z  R

Add

Body I/O

Digital input name

DI_01	<input type="checkbox"/>	DI_09	<input type="checkbox"/>
DI_02	<input type="checkbox"/>	DI_10	<input type="checkbox"/>
DI_03	<input type="checkbox"/>	DI_11	<input type="checkbox"/>
DI_04	<input type="checkbox"/>	DI_12	<input type="checkbox"/>
DI_05	<input type="checkbox"/>	DI_13	<input type="checkbox"/>
DI_06	<input type="checkbox"/>	DI_14	<input type="checkbox"/>
DI_07	<input type="checkbox"/>	DI_15	<input type="checkbox"/>
DI_08	<input type="checkbox"/>	DI_16	<input type="checkbox"/>

Digital output name

DO_01	OFF	ON	DO_09	OFF	ON
DO_02	OFF	ON	DO_10	OFF	ON
DO_03	OFF	ON	DO_11	OFF	ON
DO_04	OFF	ON	DO_12	OFF	ON
DO_05	OFF	ON	DO_13	OFF	ON
DO_06	OFF	ON	DO_14	OFF	ON
DO_07	OFF	ON	DO_15	OFF	ON
DO_08	OFF	ON	DO_16	OFF	ON

End I/O

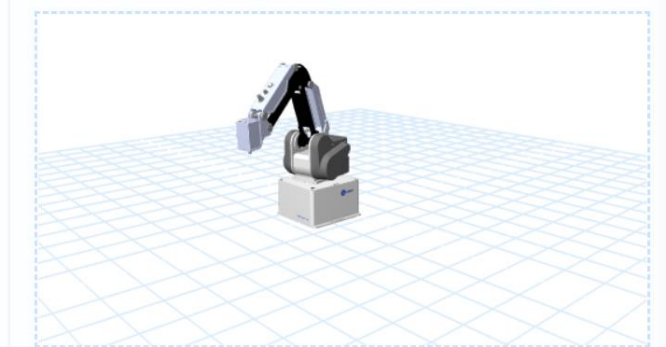
Digital input name

DI_17	<input type="checkbox"/>	DI_18	<input type="checkbox"/>
-------	--------------------------	-------	--------------------------

Digital output name

DO_17	OFF	ON	DO_18	OFF	ON
-------	-----	----	-------	-----	----

User Frame 0 Tool Frame 0



Mode Jog Step

Inch 0.1 1 5 10

X 282.14  
Y 68.48  
Z 27.96  
R 116.70

J1 13.64  
J2 10.36  
J3 31.40  
J4 103.06

- Control
- Points
- I/O

File Save Undo Redo Debug Start Stop

Directive Type

Motion

move to

cartesian speed

joint speed

CP

sync

DO

DOInstance

Logic

if/else

wait

loop

set variable

Movement type

MovJ MovL Jump JointMovJ

RelMovJ RelMovL Arc Circle



Parameter Config

Coordinates of point P: InitialPose Customize

Raise height h1 10 mm

Descent height h2 20 mm

Max height z\_limit 100 mm

Advanced setting

Speed

Accel

CP

Add

Main

move to Jump P1 {Start=10, ZLimit=100, End=20}

DO DO\_01 1

move to Jump P2 {Start=10, ZLimit=100, End=20}

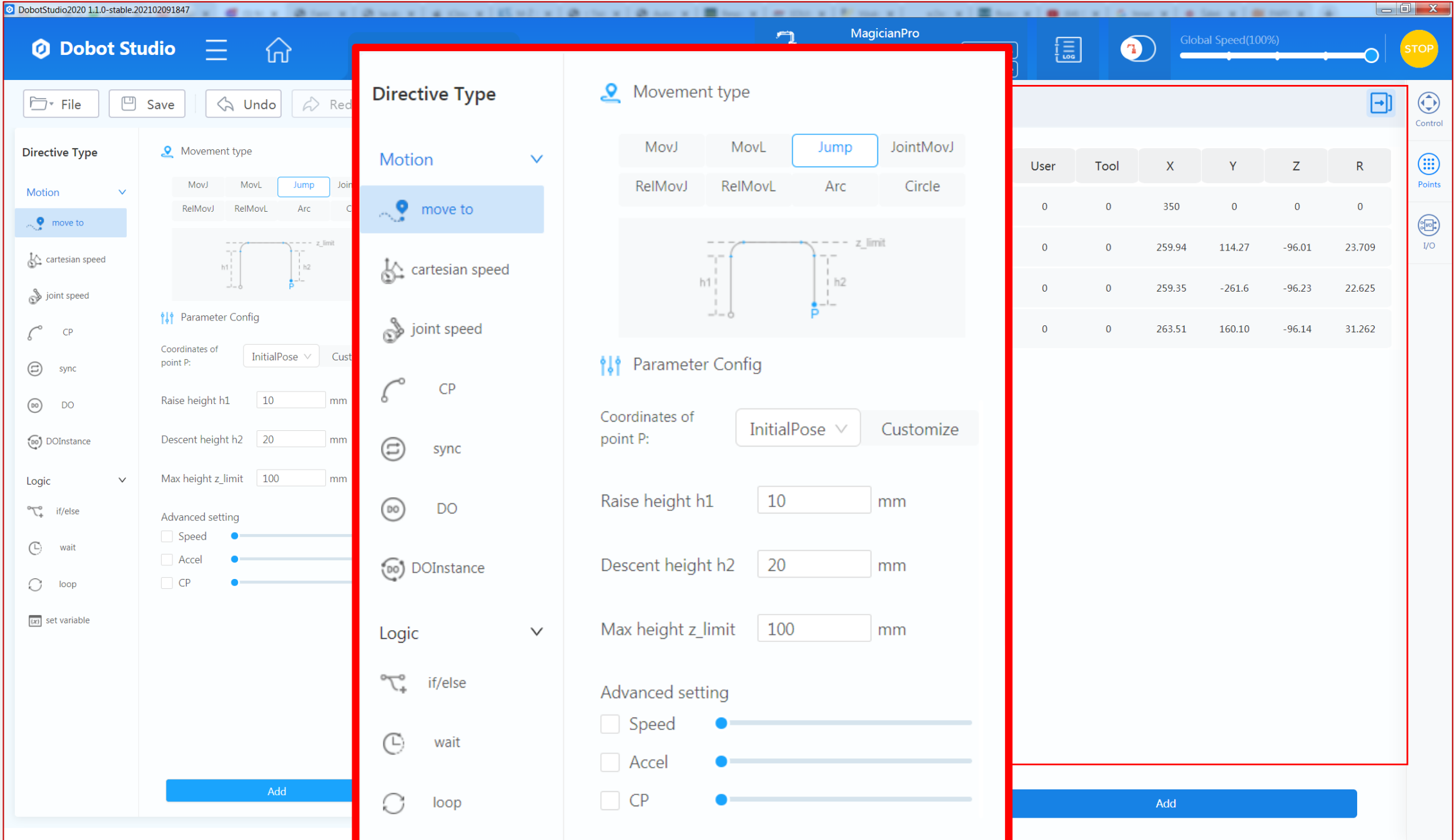
DO DO\_01 0

move to Jump InitialPose {Start=10, ZLimit=100, End=20}

Points

Name	User	Tool	X	Y	Z	R
InitialPose	0	0	350	0	0	0
P1	0	0	259.94	114.27	-96.01	23.709
P2	0	0	259.35	-261.6	-96.23	22.625
P3	0	0	263.51	160.10	-96.14	31.262

Add





DoBot Studio interface showing the configuration for a Digital Output (DO) directive. The top navigation bar includes the DoBot Studio logo, a menu icon, a home icon, and a document icon. Below the navigation bar is a toolbar with buttons for File, Save, Undo, Redo, and a search icon. The main workspace is divided into two panels. The left panel, titled "Directive Type", lists various motion and logic directives. The "DO" directive is selected and highlighted in blue. The right panel shows the configuration for the DO directive, with a dropdown menu set to "DO\_01" and a value of "OFF". A blue minus sign icon is visible to the right of the configuration fields. A blue plus sign icon is located below the configuration fields.

DoBot Studio interface showing the configuration for an "if/else" logic directive. The top navigation bar and toolbar are identical to the first panel. The left panel shows the "if/else" directive selected and highlighted in blue. The right panel shows the configuration for the "if/else" directive. It features three "if" blocks, each with a radio button selected for "I/O", a dropdown menu set to "DI\_01", and a value of "1". A blue plus sign icon is visible to the right of the configuration fields. A blue plus sign icon is located below the configuration fields.

DoBot Studio interface showing the configuration for a "set variable" logic directive. The top navigation bar and toolbar are identical to the first panel. The left panel shows the "set variable" directive selected and highlighted in blue. The right panel shows the configuration for the "set variable" directive. It features a dropdown menu set to "var\_name" and a value of "=". A blue plus sign icon is visible to the right of the configuration fields. A blue plus sign icon is located below the configuration fields.

**Events**

- When start button clicked

**Control**

- wait 1 seconds
- wait until
- repeat 10
- forever
- if then
- if then else
- repeat until

**Operators**

- +
- 
- \*
- /
- <

```

When start button clicked
  set joint acceleration percentage 100 %
  set joint speed percentage 100 %
  Move in MovJ mode to point Point P1
  Move in MovJ mode to point Point P2
  set the status of digital output DO_01 to ON
  Instruction pause time 100 ms
  Move in Jump mode to point Point P3 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to OFF
  Instruction pause time 100 ms
  Move in Jump mode to point Point P4 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to ON
  Instruction pause time 100 ms
  Move in Jump mode to point Point P5 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to OFF
  Instruction pause time 100 ms
  Move in Jump mode to point Point P6 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to ON
  Instruction pause time 100 ms
  Move in Jump mode to point Point P7 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to OFF
  Instruction pause time 100 ms
  Move in MovJ mode to point Point P9
  
```

Name	User	Tool	X	Y	Z	R
InitialPose	0	0	350	0	0	0
P1	0	0	284.07	118.21	-40.32	206.96
P2	0	0	286.16	112.94	-94.17	206.64
P3	0	0	274.58	-198.6	-95.54	207.66
P4	0	0	288.49	155.54	-94.78	214.66
P5	0	0	276.29	-198.6	-38.04	214.98
P6	0	0	293.72	199.93	-94.32	206.39
P7	0	0	277.91	-197.0	20.636	206.73
P8	0	0	293.77	115.06	-38.94	208.45
P9	0	0	277.91	-197.0	70.616	206.73

Add

Control

Points

I/O

File

Save

Undo

Redo

Debug

Start

Stop

Control

Points

I/O

- Events
- Control
- Operators
- Variables
- Move
- Move Arguments
- I/O
- Program management
- Posture

### Control

- wait 1 seconds
- wait until
- repeat 10
- forever
- if then
- if then
- else
- repeat until

### Operators

- + - \* / < = > and or not
- join hello world
- letter 1 of world
- length of world
- hello contains world ?
- mod
- round
- abs of
- Print Hello world!

### Move

Advanced configuration

- Move in MovJ mode to point
- Move in RelMovJ mode to point  $\Delta x$   $\Delta y$   $\Delta z$   $\Delta R$
- Move in Jump mode to point Raise height h1 mm DDescent height h2 mm MMax height z\_limit mm
- Move in Jump mode to point Arch parameter index
- Exercise in circle mode: middle point end point count 1
- Move in arc mode: middle point end point

### Move Arguments

- set joint acceleration percentage 10 %
- set joint speed percentage 10 %
- set Cartesian acceleration percentage 10 %
- set Cartesian speed percentage 10 %
- set smooth transition percentage 10 %
- Stop at this point
- Set Payload Parametes: Payload g X-offset mm Y-Offset mm Servo Index(Optional)

### I/O

- Read status of digital input DI\_01
- set the status of digital output DO\_01 to ON
- set the status of digital output (immediate) DO\_01 to ON

### Program management

- Instruction pause time ms
- Blocking time ms
- get SysTime

### Posture

- Gets the value of the current Cartesian position
- Gets the X value of the current Cartesian position
- Gets the value of the current joint position
- Gets the J1 value of the current joint position
- Custom Cartesian point X Y Z R User Tool
- Custom joint point J1 J2 J3 J4
- Point InitialPose
- X value of point InitialPose

Input search text

- Motion
  - Point to point, the target point is Cartesian point  
MovJ
  - Linear Movement  
MovL
  - Point to point, the target point is Joint point  
JointMovJ
  - Jump Movement, Jump parameters can be set in this command  
Jump
  - Jump Movement, Jump parameters are called by Arch index  
Jump1
  - Move to the Cartesian offset position in a point to point mode  
RelMovJ
  - Move to the Cartesian offset position in a straight line  
RelMovL

Help Document

can double-click to insert the command with optional parameters.

CP: Continuous path rate. Value range: 0-100

SpeedJ: Velocity rate. Value range: 1 - 100

AccJ: Acceleration rate. Value range: 1 -100

src0.lua global.lua

```
1 -- Version: Lua 5.4.1
2 MovJ (P1)
3 MovJ (P2)
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
```

Param

- Joint Acceleration  
AccJ
- Cartesian Acceleration  
AccL
- Joint Speed  
SpeedJ
- Cartesian Speed  
SpeedL
- CP  
CP
- Synchronization  
Sync
- Set Load Parameters  
SetPayload

I/O

- DI  
DI
- DO  
DO
- DOInstant  
DOInstant

Util

- Motion command waiting  
Wait

TCP

- Create TCP  
TCPCreate
- Establish TCP connection  
TCPStart
- Receive TCP data  
TCPRead
- Send TCP data  
TCPWrite
- Close TCP  
TCPDestroy

UDP

- Create UDP  
UDPCreate
- Receive UDP data  
UDPRead
- Send UDP data  
UDPWrite

Modbus

- Read the value from Modbus slave coil register address  
GetCoils
- Set the coil register in the Modbus slave  
SetCoils

Stack

- Instantiate matrix pallet  
MatrixPallet
- Instantiate teaching pallet  
TeachPallet
- Set the next stack index which is to be operated  
SetPartIndex
- Get the current operated stack index  
GetPartIndex
- Set the next pallet layer index which is to be operated  
SetLayerIndex
- Get the current pallet layer index  
GetLayerIndex
- Reset pallet  
Restet
- Check whether the stack assembly or dismantling is complete  
IsDone
- Release palletizing instance  
Release
- The robot moves from the current position to the first stack position as the configured stack assembly path  
PalletMoveIn

Conveyer Belt

- Set conveyer number to create a tracing queue  
CnvVison
- Obtain status of the object  
GetCnvObject
- Set X,Y axes offset under the set User coordinate system  
SetCnvPointOffset
- Set time compensation  
SetCnvTimeCompensation
- Synchronize the specified conveyer  
SyncCnv
- Stop synchronous conveyer  
StopSyncCnv



### Settings

- Common
- MG400
- Basic**
- IP Configuration
- Collision Detection
- Firmware Download
- Jump Params
- Load Params
- Home Calibration
- Coordinate System

#### Specification

Device Name

Device SN DT18-2106-0009

Controller Hardware Version 2001018102

Servo Hardware Version 2001018502

#### Initial Position

InitialPose

X	350.000	Z	0.000	User	0
Y	0.000	R	0.000	Tool	0

### Settings

- Common
- MG400
- Basic
- IP Configuration**
- Collision Detection
- Firmware Download
- Jump Params
- Load Params
- Home Calibration
- Coordinate System

#### IP Configuration

**⚠** Only the IP address of LAN2 can be modified to connect external devices

IP Address  -  -  -

Netmask  -  -  -

Gateway  -  -  -

**Settings** ×

Common

MG400

Basic

IP Configuration

**Collision Detection**

Firmware Download

Jump Params

Load Params

Home Calibration

Coordinate System

**Collision Detection**

**Collision Detection Sensitivity**

Level1 Level2 **Level3** Level4 Level5

Higher level, higher sensitivity

**Recovery Method After Collision Detection**

Method  ^

Automatically resume after 5s

Pause

**Settings** ×

Common

MG400

Basic

IP Configuration

Collision Detection

**Firmware Download**

Jump Params

Load Params

Home Calibration

Coordinate System

**Controller Firmware**

Current Version: 1.4.4.7.20210205171053

Controller Firmware:

**Servo Firmware**

Current Version: 1.0.4.0

Servo Firmware:

Current Version: 3.4.14

Configuration File:

### Settings

Jump parameter setting

Number	h1(mm)	h2(mm)	zLimit(mm)
0	5	50	50
1	0	0	135
2	6	24	
3	7	50	
4	7	50	
5	7	31	
6	7	50	
7	7	50	
8	7	50	
9	7	50	

### Settings

#### Load Params

In order to ensure the smooth operation of the manipulator and avoid the phenomenon of collision detection, it is necessary to set the eccentric coordinates (x1, Y1) of the end load when the J4 axis angle is 0 degrees

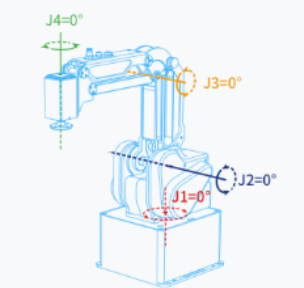
Payload  g  
 Offset-x  mm  
 Offset-y  mm

Settings
×

- Common
- MG400
- Basic
- IP Configuration
- Collision Detection
- Firmware Download
- Jump Params
- Load Params
- Home Calibration
- Coordinate System

### Home Calibration

⚠ Home calibration is only used when the home position changes, please operate carefully.



Schematic diagram of home position

Please enable and move the device to the home position and click home calibration. Home

Settings
×

User Frame
Tool Frame

Common
copy
Modify
Add

- MG400
- Basic
- IP Configuration
- Collision Detection
- Firmware Download
- Jump Params
- Load Params
- Home Calibration
- Coordinate System

	index	X	Y	Z	R
<input type="checkbox"/>	0	0.000	0.000	0.000	0.000
<input type="checkbox"/>	1	0.000	0.000	0.000	0.000
<input type="checkbox"/>	2	123.595	43.286	0.000	0.000
<input type="checkbox"/>	3	70.063	5.412	0.000	0.000
<input type="checkbox"/>	4	0.000	0.000	0.000	0.000
<input type="checkbox"/>	5	0.000	0.000	0.000	0.000
<input type="checkbox"/>	6	0.000	0.000	0.000	0.000
<input type="checkbox"/>	7	0.000	0.000	0.000	0.000
<input type="checkbox"/>	8	0.000	0.000	0.000	0.000

Apply



# ControlTech



Authorised  
Distributor

A ROCKWELL AUTOMATION PARTNER

## MG400 Accessories



# DOBOT



## Vacuum Suction Cup kit

For picking up object having big surface or in long strip shape  
Changeable suction cup for different size  
Adjustable distance for quick setup



# DOBOT



## Soft Gripper Kit -1

Picking soft, irregularly shaped and high-level objects  
Adjustable distance for quick setup



# DOBOT



## Electric gripper (SERVO type)

Designed for advanced application  
Size 65 x 43 x 18 mm  
Gripping force \ speed \ distance adjustable



# DOBOT



## Mini ElectroMagnetic Gripper

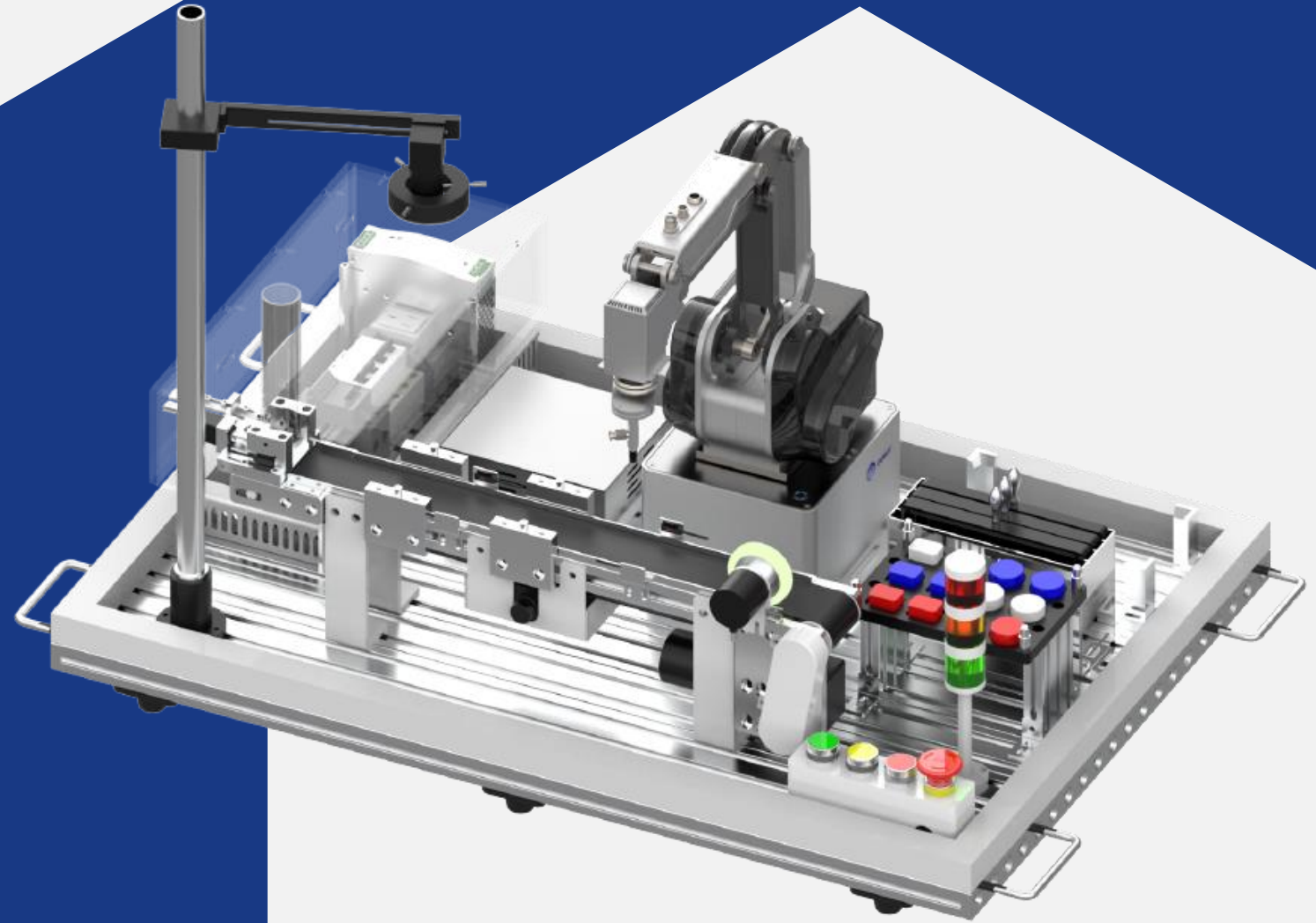
For picking small solid object  
Simple & Easy to use  
I/O control for opening & closing I/O







# MG400 Robotic Training System









# DOBOT

# SCARA M-1



**Opakovateľnosť**  
**0,02 mm**



**Rychlosť**  
**200°/s**

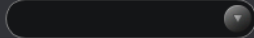


**Nosnosť**  
**1,5 kg**



**Dosah**  
**400 mm**





Playback Script

Infinite Loop
 DynRatio  %  
Loop  
1%
200%

Option	Index	Name	Type	Content
	0		OUTPUT	OUT18=0V
	1		MOVJ	To(154.0141, 298.2269, 96.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
	2		MOVJ	To(154.0141, 298.2269, 69.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
	3		OUTPUT	OUT17=0V
	4		MOVJ	To(154.0141, 298.2269, 96.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
	5		MOVJ	To(78.1350, -386.5726, 96.0000, -161.1687), Vel/Jerk(50%, 50%), ArmOrientation(Left)
	6		MOVJ	To(78.1350, -386.5726, 69.0000, -161.1687), Vel/Jerk(20%, 50%), ArmOrientation(Left)
	7		OUTPUT	OUT17=24V
	8		MOVJ	To(78.1350, -386.5726, 96.0000, -161.1687), Vel/Jerk(20%, 50%), ArmOrientation(Left)
	9		WAIT	Pause 1.00 S
	10		MOVJ	To(78.1350, -386.5726, 69.0000, -161.1687), Vel/Jerk(20%, 50%), ArmOrientation(Left)
	11		OUTPUT	OUT17=0V
	12		MOVJ	To(78.1350, -386.5726, 96.0000, -161.1687), Vel/Jerk(20%, 50%), ArmOrientation(Left)
	13		MOVJ	To(154.0141, 298.2269, 96.0000, 22.6511), Vel/Jerk(50%, 50%), ArmOrientation(Right)
	14		MOVJ	To(154.0141, 298.2269, 69.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
	15		OUTPUT	OUT17=24V
	16		MOVJ	To(154.0141, 298.2269, 96.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
	17		WAIT	Pause 1.00 S

Add At Last  
 Insert Before Selected Row  
 OverWrite Selected Row

Enable Hand Hold Teach

Add Motion Command

PTP  MOVJ   
 Vel  %  
 Jerk  %

Add Wait Command

s

Add I/O Command

Output  Trigger

Apply DynRatio

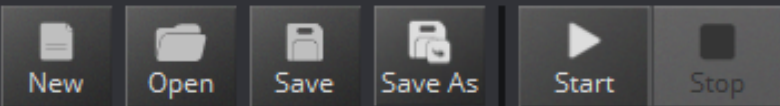
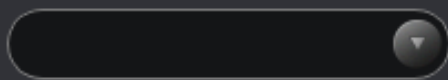
Operation Panel

X  Joint1   
 Y  Joint2   
 Z  Joint3   
 R  Joint4

Joint

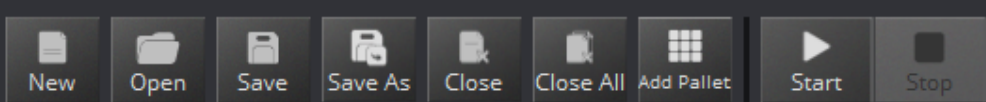
Vel  %   
 Acc  %

Motor:  Power:



- Logic
- Loops
- Math
- Text
- Lists
- Colour
- Variables
- Functions
- ▼ DobotAPI
  - Basic
  - Config
  - Motion
  - I/O

```
Set Coordinate Speed VelocityRatio 20 JerkRatio 50
Set Jump Params JumpHeight 20 ZLimit 200
repeat while true
do
  Set Arm Orientation Left
  Jump To X 223 Y 276 Z 60
  Set Arm Orientation Right
  Jump To X 223 Y 276 Z 60
  Set Arm Orientation Right
  Go to X 258 Y 177 Z 120
```



Search:  TEST\_PV\_PETvicka\_barvy1

- + Other
- QueueCmd
  - ? dType.GetQueuedCmdCurrentIndex(api)
  - ? dType.SetQueuedCmdStartExec(api, cmd, start)
  - ? dType.SetQueuedCmdStopExec(api, cmd, stop)
  - ? dType.SetQueuedCmdForceStopExec(api, cmd, stop)
  - ? dType.SetQueuedCmdClear(api, cmd)
- Pose
  - ? dType.GetPose(api)
- Alarms
  - ? dType.GetAlarmsState(api, maxLevel)
  - ? dType.ClearAllAlarmsState(api)
- ArmOrientation
  - ? dType.SetArmOrientation(api, arm, orientation)
  - ? dType.GetArmOrientation(api, arm)
- JOG
  - ? dType.SetJOGCommonParams(api, speed, accel)
  - ? dType.GetJOGCommonParams(api)
  - ? dType.SetJOGCmd(api, isJoint, cmd, speed, accel)
- PTP
  - ? dType.SetPTPJumpParams(api, jump, speed, accel)
  - ? dType.GetPTPJumpParams(api)
  - ? dType.SetPTPCommonParams(api, speed, accel)
  - ? dType.GetPTPCommonParams(api)
  - ? dType.SetPTPCmd(api, ptpMode, x, y, z, r, speed, accel)
- ARC
  - ? dType.SetARCCmd(api, ptpMode, x, y, z, r, speed, accel)
- WAIT
- TRIG
- IO

```
25 while not (dType.GetIODI(api, 19)[0]) == 0: # Cekani na stisk tlacitka
26     pass
27     if (dType.GetIODI(api, 20)[0]) == 1:
28         break
29     dType.SetArmOrientation(api, 1, 1)
30     dType.SetPTPCmd(api, 0, 79.55, 189, 27, 331, 1)
31     close_grip()
32     dType.SetArmOrientation(api, 1, 1)
33     dType.SetPTPCmd(api, 0, 162, 314, 89, 331, 1)
34     print(dType.GetIODI(api, 17)[0])
35     print(dType.GetIODI(api, 18)[0])
36     dType.SetWAITCmdEx(api, 1000, 1)
37     while (dType.GetIODI(api, 18)[0]) == 1 and (dType.GetIODI(api, 17)[0]) == 1:
38         pass
39     print(dType.GetIODI(api, 17)[0])
40     print(dType.GetIODI(api, 18)[0])
41     if (dType.GetIODI(api, 18)[0]) == 1 and (dType.GetIODI(api, 17)[0]) == 0:
42         dType.SetArmOrientation(api, 0, 1)
43         dType.SetPTPCmd(api, 0, x1, y, z, r, 1)
44         open_grip()
45         x1=x1-35
46     elif (dType.GetIODI(api, 18)[0]) == 0 and (dType.GetIODI(api, 17)[0]) == 1:
47         dType.SetArmOrientation(api, 0, 1)
48         dType.SetPTPCmd(api, 0, x2, y2, z, r, 1)
49         open_grip()
50         x2=x2-35
51     elif (dType.GetIODI(api, 18)[0]) == 0 and (dType.GetIODI(api, 17)[0]) == 0:
52         dType.SetArmOrientation(api, 0, 1)
53         dType.SetPTPCmd(api, 0, x3, y3, z, r, 1)
54         open_grip()
55         x3=x3-35
```

**api** : The object of Dobot Library.

**cirPoint** : List of transition position

- cirPoint[0] : Value of x-axis
- cirPoint[1] : Value of y-axis
- cirPoint[2] : Value of z-axis
- cirPoint[3] : Value of r-axis

**toPoint** : List of target position

- toPoint[0] : Value of x-axis



**DOBOT**



**BIOMEDICA**



**AICOBOTIX**  
ARTIFICIAL INTELLIGENCE

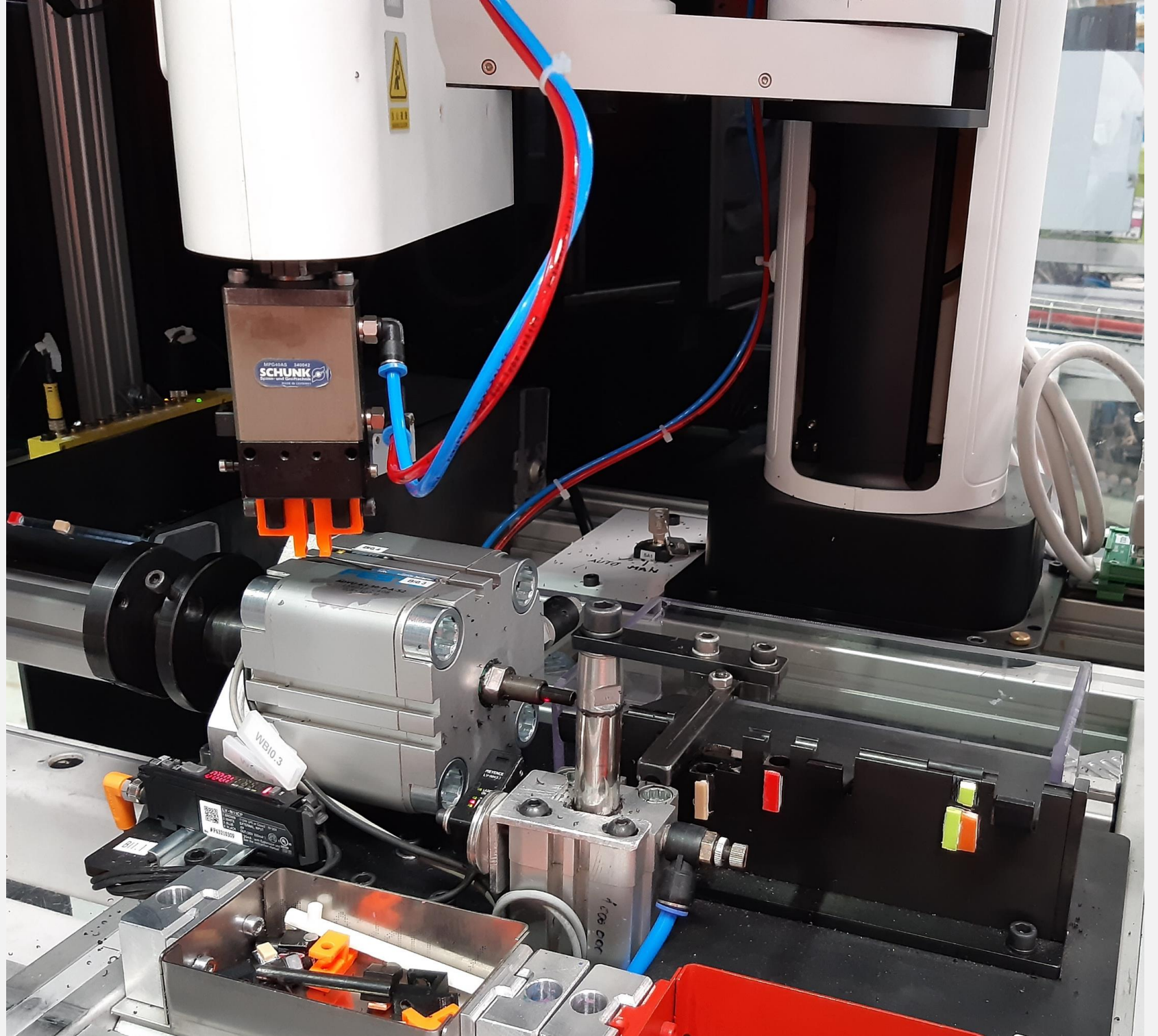


**Rendszer**



**NICO  
TECHNIKA**

**u-shin**





# DOBOT



# AICOBOTIX

ARTIFICIAL INTELLIGENCE

DOBOT M1 je levný a cenově dostupný SCARA robot vhodný pro 1-2 směnný provoz pro malou výrobu. Přesnost  $\pm 0,1$  mm dosažitelná pomocí kamerově vedené montáže a kontroly kvality AicobotiX pomocí řešení QiCHECK (TM) Vedení QiCHECK naviguje robota, aby vybral a umístil malé součásti o průměru až 3 mm. Kromě toho provádí kontrolu kvality. levná alternativa k EPSON, YAMAHA, TOSHIBA, FANUC, KUKA atd.



<https://www.aicobotix.com/>



**DOBOT**

**M1**

**PRO**



M1 Pro is DOBOT's

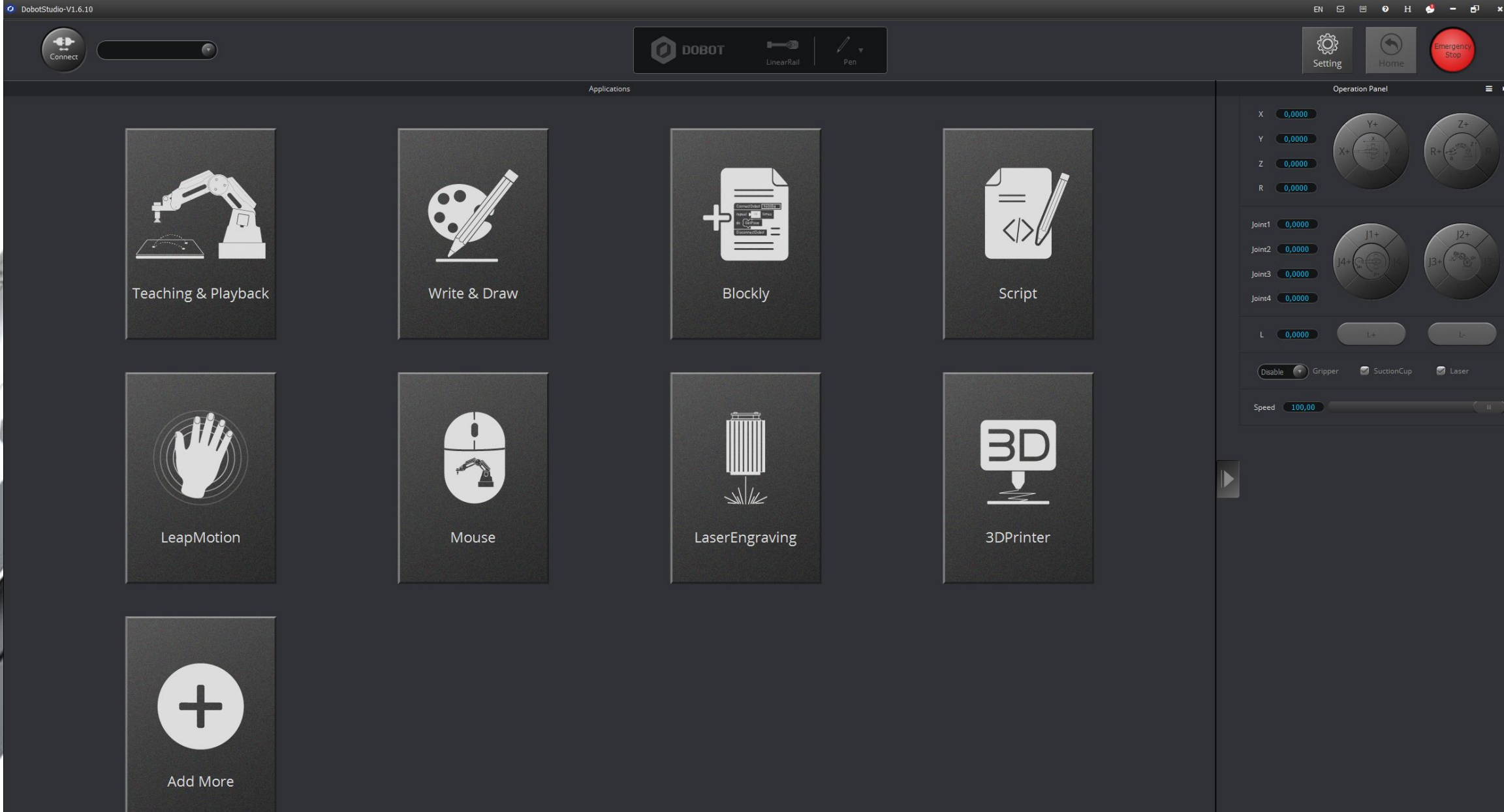


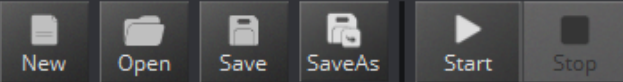
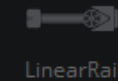
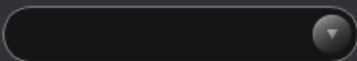


# VÝUKOVÉ A TRÉNINKOVÉ ROBOTY DOBOT Magician a Magician Lite









- Logic
- Loops
- Math
- Text
- Lists
- Colour
- Variables
- Functions
- ▼ DobotAPI
  - Basic
  - Config
  - Motion
  - I/O
  - Additional

```

Home
ChooseEndTools Gripper
SetCoordinateSpeed Velocity 20 Acceleration 50
SetJumpHeight Height 20
JumpTo X 200 Y 0 Z 0
Delaytime 0 s
MoveTo X 200 Y 0 Z 0
Set5VOutput EIO EIO10 isEnabled ON

Laser ON Power 50
MoveLinearRailTo 0
SetConveyor Motor STEPPER1 Speed 50 mm/s
SetPhotoelectricSensor OFF Version V1 Port GP1
    
```

```

if GetLevelInput EIO EIO01 = 0
do Gripper Release

set Osa X to 200

repeat 10 times
do MoveTo X Osa X + 10 Y 75 Z 100

to seznam
in list Osa X insert at first as 200

seznam
    
```

count with Pozice from 1 to 4 by 1

do

JumpTo X in list in list Leva get # 1 get # Pozice Y in list in list

Gripper Gripper

Delaytime 1 s

JumpTo X in list in list Prava get # 1 get # Pozice Y in list in list

Gripper Release

Delaytime 0.5 s

count with Pozice from 1 to 4 by 1

do

JumpTo X in list in list Prava get # 1 get # Pozice Y in list in list

Gripper Gripper

Delaytime 1 s

JumpTo X in list in list Leva get # 1 get # Pozice Y in list in list

Gripper Release

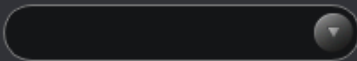
Delaytime 0.5 s

MoveTo X 180 Y 0 Z 25

General Code:

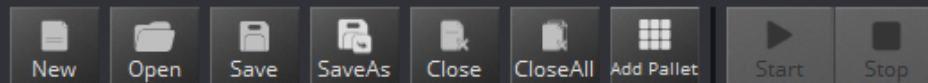
```
Leva = None
Prava = None
Z = None
Pozice = None

Leva = [[225.5, 235.6279, 245.4217, 255.5538, 265.4469,
274.8148], [43, 42.999, 42.5677, 42.2319, 42.28, 41.8972]]
Prava = [[223.6901, 233.7885, 243.7215, 253.4057, 263.3534,
273.2444], [-42.9919, -43.1828, -43.5424, -43.5426, -43.8326,
-44.0512]]
dType.SetEndEffectorParamsEx(api, 59.7, 0, 0, 1)
dType.SetPTJumpParamsEx(api,40,100,1)
dType.SetPTPLParamsEx(api,20,50,1)
dType.SetHOMECmdEx(api, 0, 1)
print('HOME FINISHED')
current_pose = dType.GetPose(api)
dType.SetPTPCmdEx(api, 2, 180, 0, 25, current_pose[3], 1)
current_pose = dType.GetPose(api)
dType.SetPTPCmdEx(api, 4, current_pose[4], current_pose[5],
current_pose[6], 8.4, 1)
Z = -20.5
dType.SetEndEffectorGripperEx(api, 1, 0)
for Pozice in range(1, 5):
    dType.SetPTPCmdEx(api, 0, ((Leva[0])[int(Pozice - 1)]),
((Leva[1])[int(Pozice - 1)]), Z, 0, 1)
    dType.SetEndEffectorGripperEx(api, 1, 1)
    dType.SetWAITCmdEx(api, 1, 1)
    dType.SetPTPCmdEx(api, 0, ((Prava[0])[int(Pozice - 1)]),
((Prava[1])[int(Pozice - 1)]), Z, 0, 1)
    dType.SetEndEffectorGripperEx(api, 1, 0)
    dType.SetWAITCmdEx(api, 0.5, 1)
for Pozice in range(1, 5):
    dType.SetPTPCmdEx(api, 0, ((Prava[0])[int(Pozice - 1)]),
```



LinearRail

Script

Search:  Example\_JOG Example\_PTP

```

+ Other
+ QueueCmd
+ Pose
+ Alarms
+ HOME
+ HandTeach
+ EndEffector
+ LinearRail
+ JOG
+ PTP
+ CP
+ ARC
+ WAIT
+ TRIG
+ EIO
+ AngleSensor
+ ColorSensor
+ WIFI
- LostStep
? dType.SetLostStepParams(api, thr
? dType.SetLostStepCmd(api, isQueued
Params:

```

```

15 dType.SetWAITCmdEx(api, 0, 1)
16 current_pose = dType.GetPose(api)
17 dType.SetPTPCmdEx(api, 2, 200, 0, 0, current_pose[3], 1)
18 dType.SetIODOEx(api, 10, 1, 1)
19
20 if (dType.GetIODI(api, 1)[0]) == 0:
21     dType.SetEndEffectorGripperEx(api, 1, 0)
22
23 Osa_X = 200
24
25 for count in range(10):
26     current_pose = dType.GetPose(api)
27     dType.SetPTPCmdEx(api, 2, (Osa_X + 10), 75, 100, current_pose[3], 1)
28
29 dType.SetEndEffectorLaserEx(api, 1, 50, 1)
30 current_pose = dType.GetPose(api)
31 dType.SetPTPWithLCmdEx(api, 1, current_pose[0], current_pose[1], current_pose[2], current_pose[3], 0, 1)
32 STEP_PER_CRICLE = 360.0 / 1.8 * 10.0 * 16.0
33 MM_PER_CRICLE = 3.1415926535898 * 36.0
34 vel = float(50) * STEP_PER_CRICLE / MM_PER_CRICLE
35 dType.SetEMotorEx(api, 0, 1, int(vel), 1)
36 dType.SetInfraredSensor(api, 0, 0, 0)

```

```

? dType.SetLostStepParams(api, thr
? dType.SetLostStepCmd(api, isQueued
Params:
#Warning# Don't change the "api" Variable.
api : The object of Dobot Library.
#Warning# You must use queue mode for current firmware.
isQueued : The switch state of using queue mode
          1 : use queue mode
          0 : don't use queue mode

```

Return:

```

#Tip# Valuable returns of Dobot-API of python are returned as list.
list[0] : Two possible results.

```

51

52









# DOBOT



DOBOT Soubor Upravit Nápověda Výukové centrum Projekt Scratch

Scénáře

Ovládání Operátory Proměnné Vnímání Události Nastavení Pohyb Stav I/O Moje bloky

**Pohyb**

- Kalibrovat
- Skoč na X 0 Y 0 Z 0 R 0
- Jdi na X 0 Y 0 Z 0 R 0 Způsob pohybu Lineární pohyb
- Relativní pohyb  $\Delta X$  0 mm  $\Delta Y$  0 mm  $\Delta Z$  0 mm  $\Delta R$  0 °
- Otoč klouby na Kloub 1 0 ° Kloub 2 0 ° Kloub 3 0 ° Kloub 4 0 °
- Nastaví R 0 °
- Uchopovač Uchopit
- Přisavka Uchopit

**Stav**

- Získat současné souřadnice X
- Získat současné úhly kloubů Kloub 1
- Smazat alarm

**I/O**

- Nastaví Pin EIO1 Režim IO Funkce Dummy
- Nastaví PWM výstup Pin EIO1 Frekvence 0 Sřída 0 %
- Nastaví digitální výstup Pin EIO1 Hodnota Logická 1

**Zařízení** Sprite

Magician

Souřadnice Rychlost

X 0 Y 0 Z 0 R 0

Y+ X- Z+ X+ Z- Y- R- R+

Lineární pojezd L- L+

Uchopit Pustit Přisavka



# DOBOT



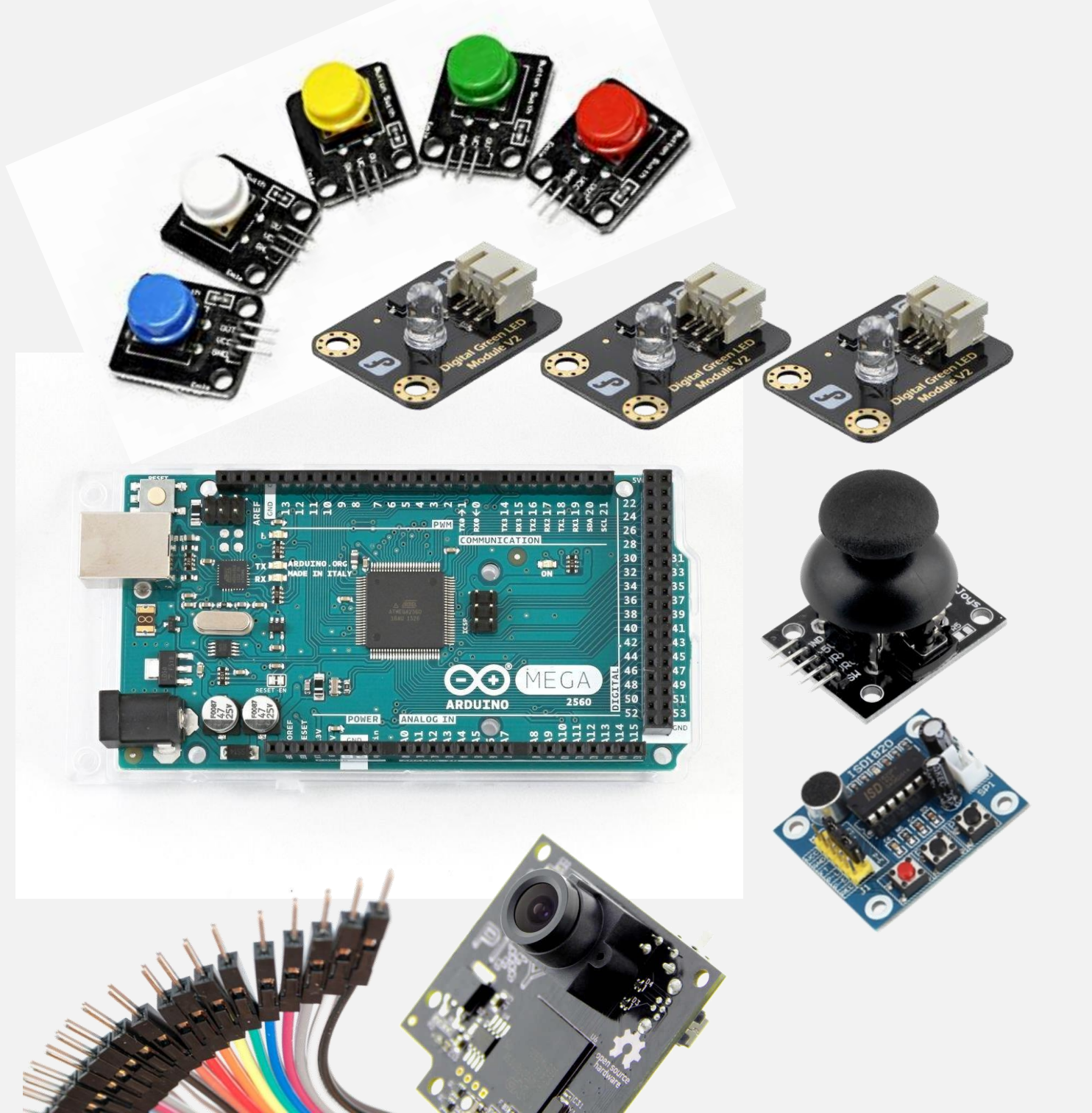
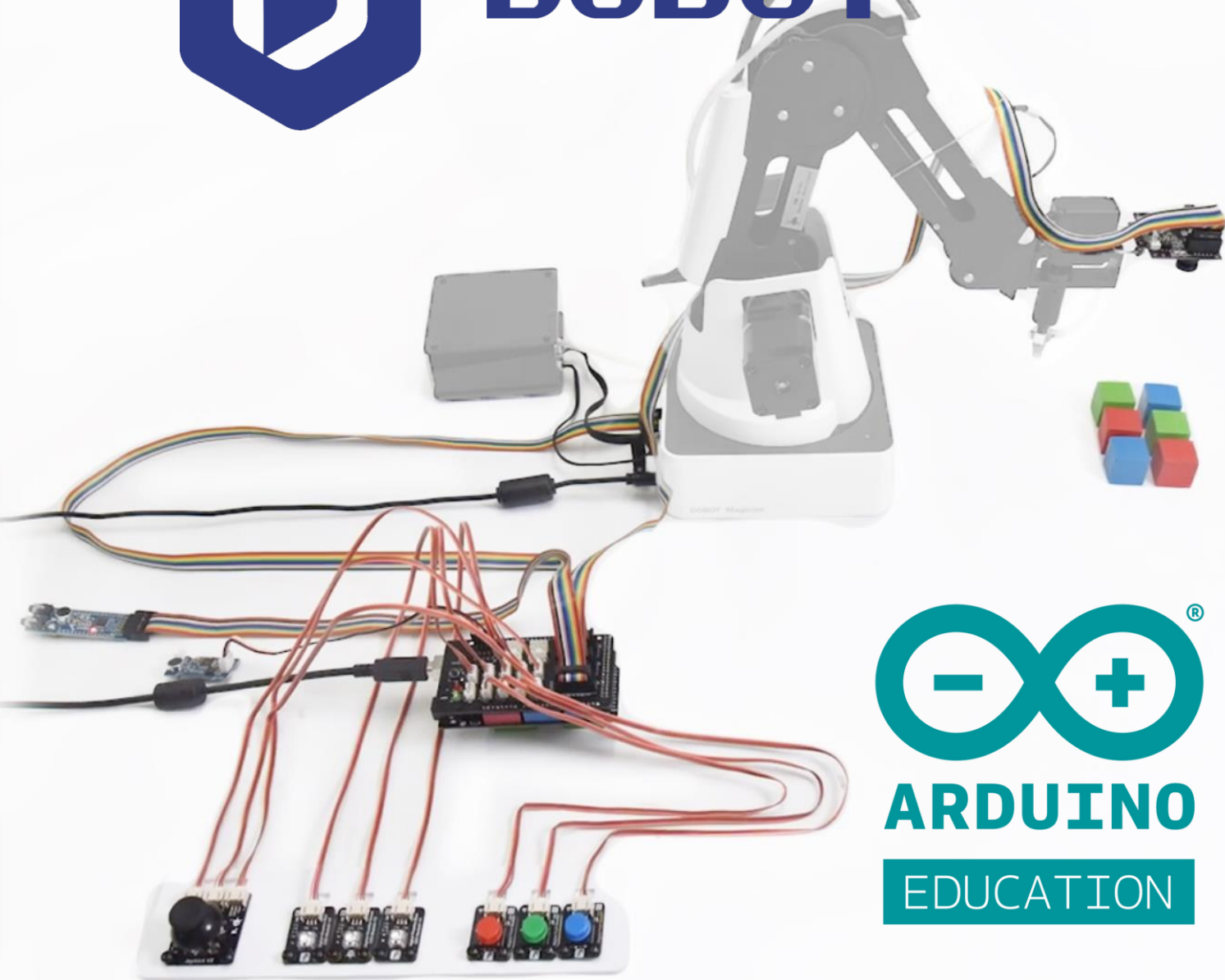


# DOBOT





# DOBOT







# DOBOT



## DOBOT SENSOR KIT pro Magician



Joystick, Dvojtlačítko, PIR senzor, Snímač gest, Fotoelektrický snímač, Snímač zvuku, Snímač vlhkosti, Barevné čidlo, Senzor barvy, LED modul, Světelný senzor, Potenciometr, mikroservo, Sada AI kamery, Magic Box.

## DOBOT SENSOR KIT pro Lite





**DOBOT**

**GO**



**PŘIPRAVUJE SE  
NOVINKA**

# Magician Go

## 智能移动机器人





# ROBOTY OBVYKLE SKLADEM, IHNEDE K DODÁNÍ.

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➤ +420 607 170 914

