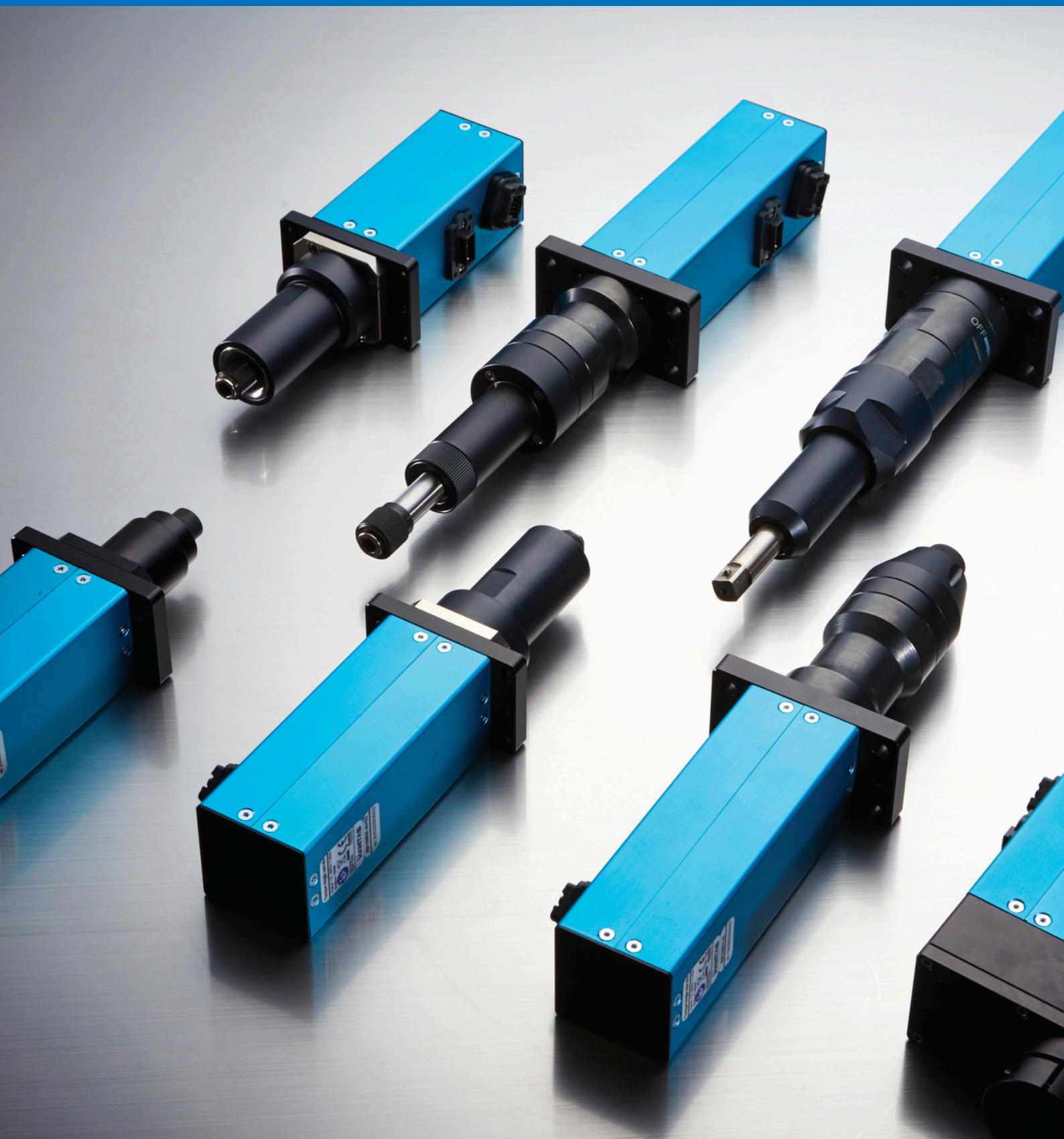


AD series

DIGITAL TORQUE & ANGLE CONTROL SPINDLE





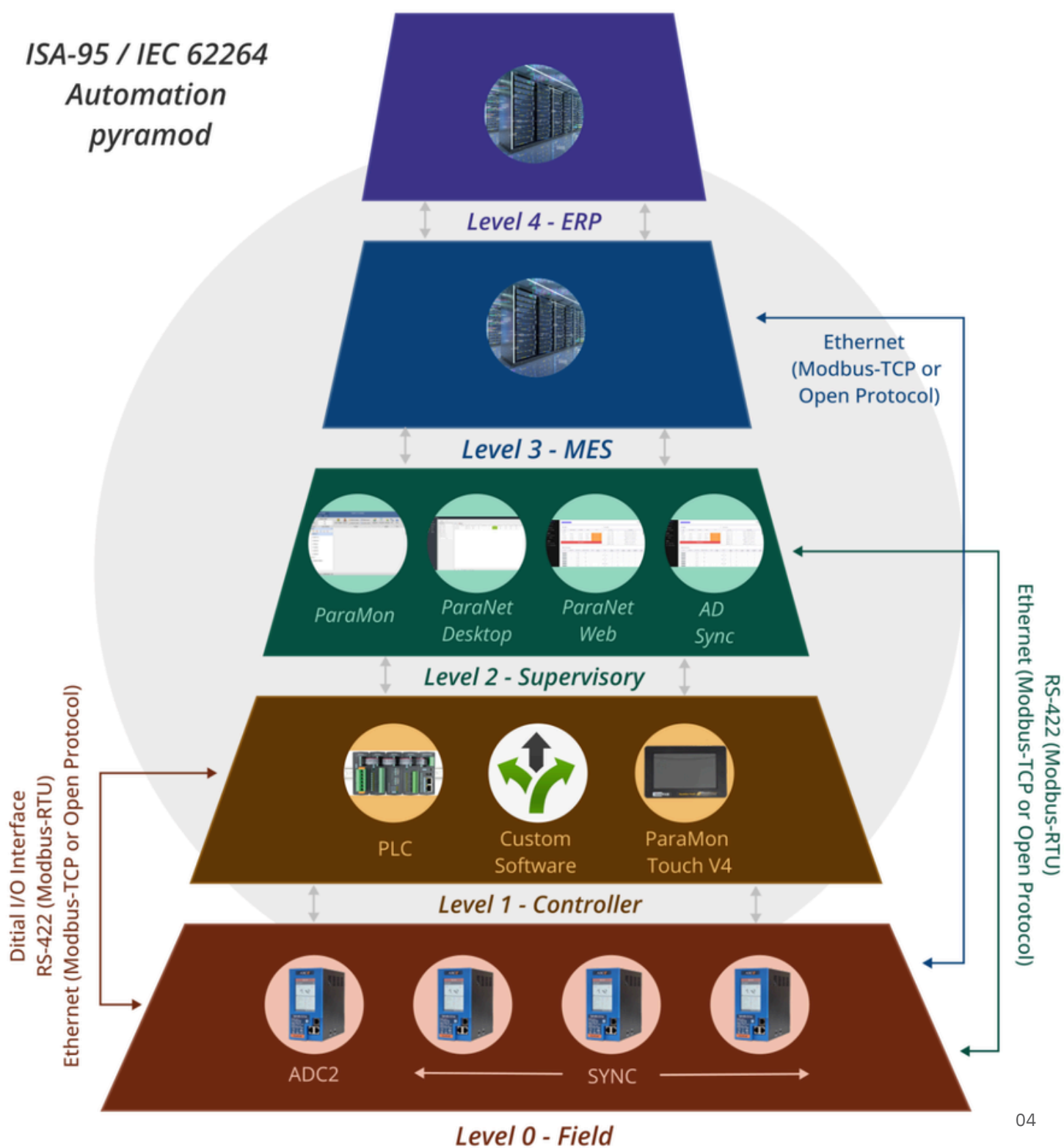


MAIN FEATURE

- Digital torque and angle setting in 31 presets and 2 multi-step sequence programs
 - Digital I/O (Input 8, output 8)
 - 3.5-inch touch screen LCD front panel
 - Auto safe speed by torque setting as a standard factory setting
 - Self-customizing on actual tightening application for optimized setting.
 - Monitoring fastening quality and count of screw numbers
 - Error information by code display
 - Easy parameter setting and monitoring by ParaMon (PC software) & LCD screen
 - Real time torque data and curve display
 - Real time fastening data output
 - Modbus TCP, RTU protocol & Open protocol
 - RS422 & Ethernet communication port
 - Torque synchronization via CAN communication in multi spindle
 - Accuracy : Current control type 7%, transducer type 5% in full scale
 - Repeatability : +/- 3%
 - 8 inputs and 8 outputs flexible digital I/O
 - Long lifetime over 5 million cycles
-



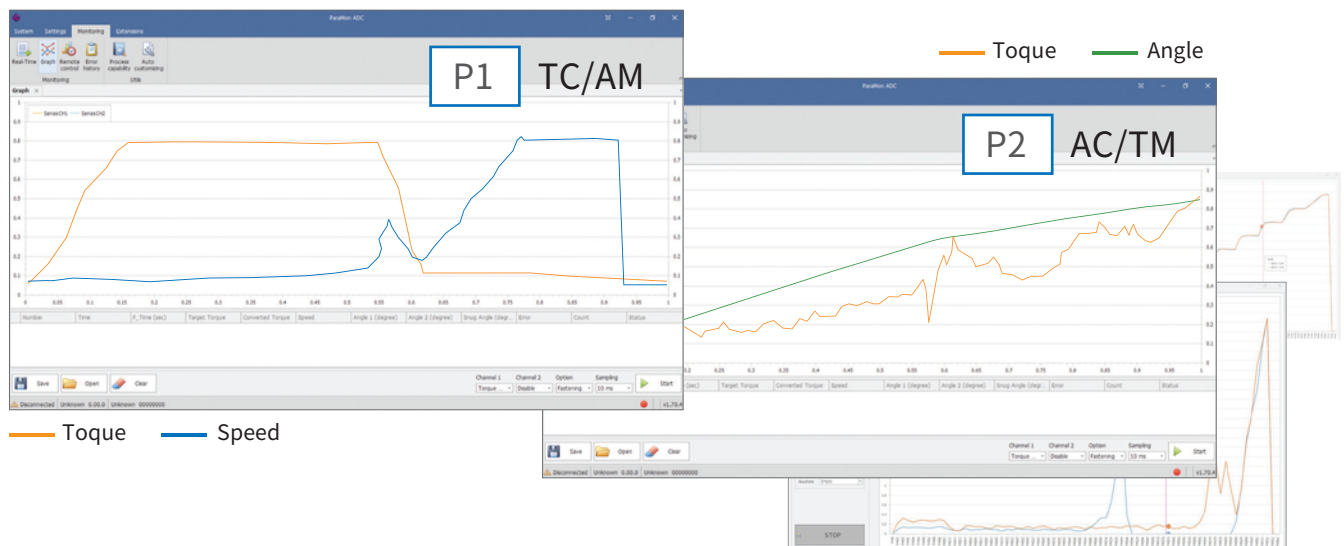
ISA-95 / IEC 62264 Automation pyramid



Torque & Angle control by preset

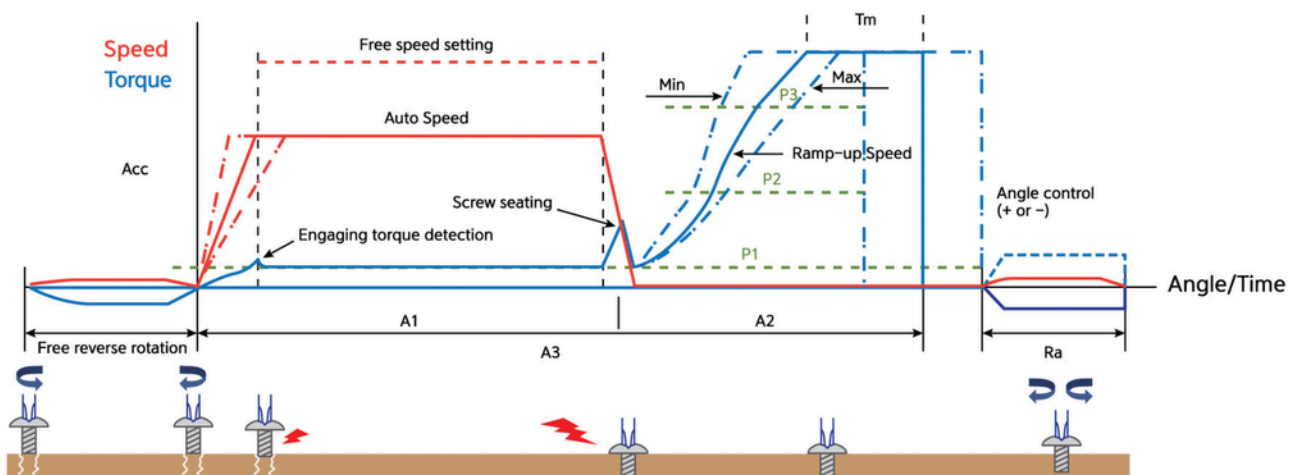
Total 31 tightening presets consist of each 16 key parameters.

This strategy can be extended to 256 presets with optional ParaMon Touch.



Each preset programs have the customized parameters as below;

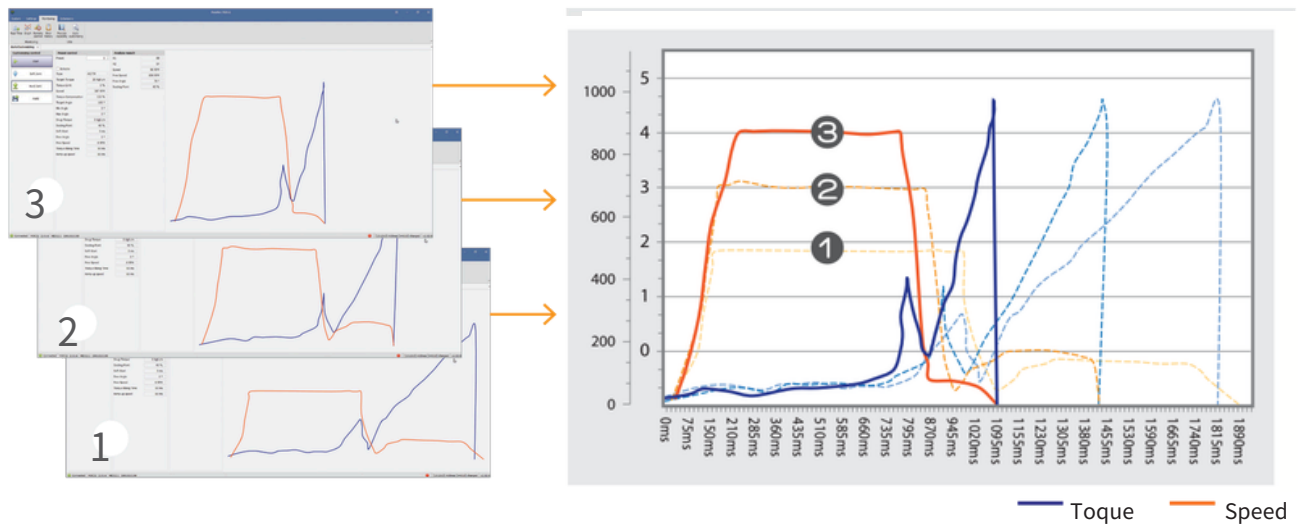
- **Tightening mode**
Torque control + angle monitoring (TC/AM)
Angle control + torque monitoring (AC/TM)
- **Torque**
Target torque, min/max torque, snug torque, seating torque, torque compensation
- **Angle**
Target angle, min/max angle, free speed angle
- **Speed**
Targets speed, Free speed
- **Time**
Softstart time, torque rising time, torque holding time
- **Advanced Function**
Angle after torque-up, Engaging torque detection, Free reverse rotation, Thread tapping.



Easy guidance to the optimized tightening condition by built-in self customizing simulation feature

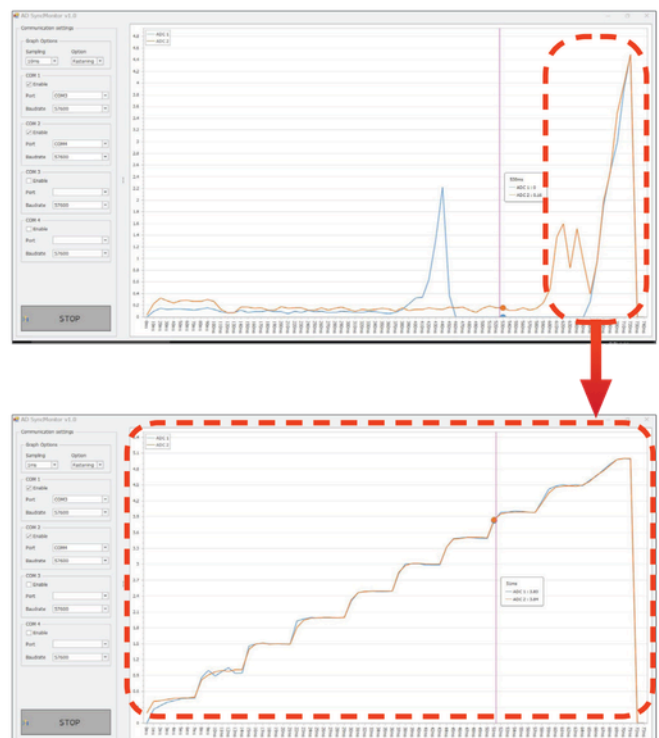
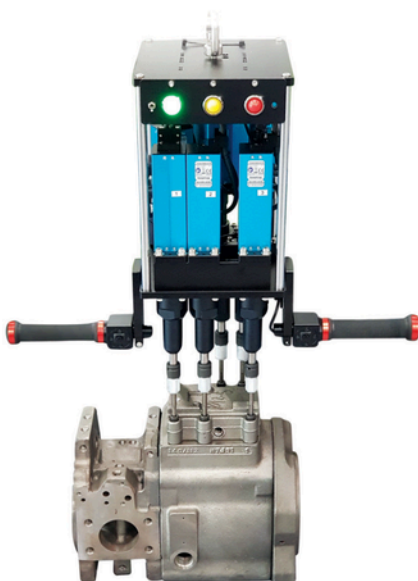
Auto customizing simulation

Self customizing software will find the optimized parameter condition to provide torque accuracy for the target torque in most fast speed. Just apply tightening with factory setting parameters until the software stop changing parameter settings.



Synchronized fastening up to 32 tools, Multi-spindle

ADC 2 provides the synchronized fastening feature up to 32 spindles.



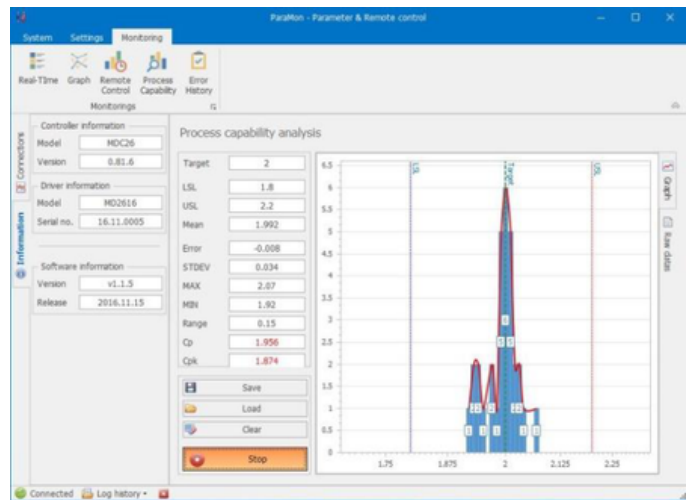
Free PC software ParaMon provides easy parameter setting, data monitoring & analysis

2 channel realtime curve display for torque, speed, angle.
Torque capability analysis for mean value, standard deviation, CP and CPK.
Auto data output on every event in Modbus protocol.

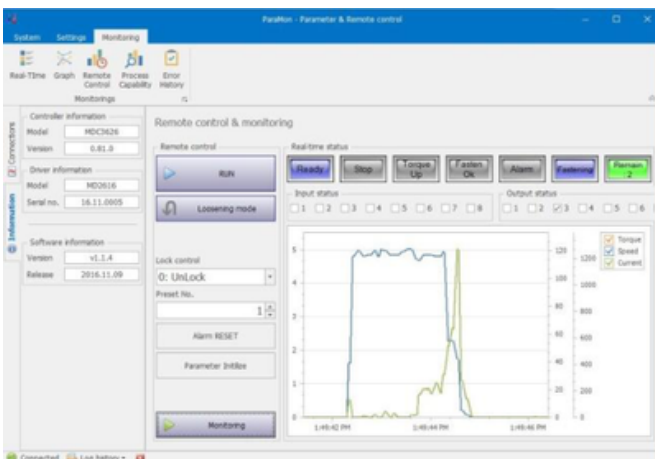
Fastening Setting

Address...	Parameter	Parameter value	Min value	Max value
Preset No.: 01				
A001	Type	☒ TC/AM ☐ AC/TM	0	1
A002	Target torque	5	4	34
A003	Torque limit (%)	3.5	0	100
A004	Target angle (not use)	0	0	9999
A005	Min angle (degree)	360	0	9999
A006	Max angle (degree)	1080	0	9999
A007	Snug torque	0	0	34
A008	Speed (rpm)	113	100	900
A009	Free angle (degree)	0	0	9999
A010	Free speed (rpm)	0	0	900
A011	Soft start (ms)	0	0	300
A012	Seating point torque (%)	50	10	95
A013	Torque rising time (ms)	50	50	200
A014	Torque holding time (ms)	2	1	20
A015	Torque compensation (%)	100	80	120

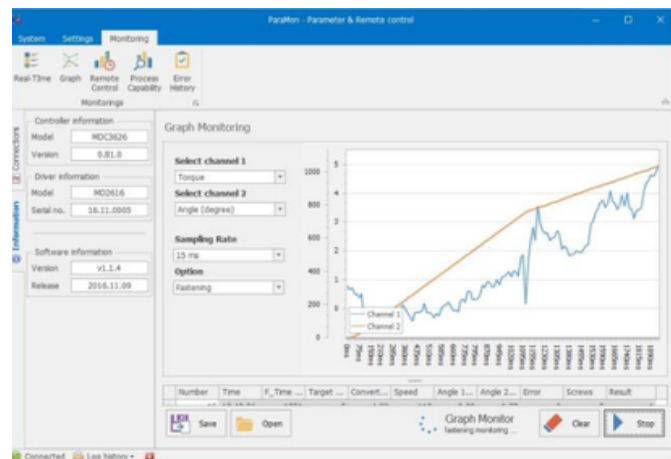
Fastening parameter setting



Process capability analysis



Remotecontrol& monitoring



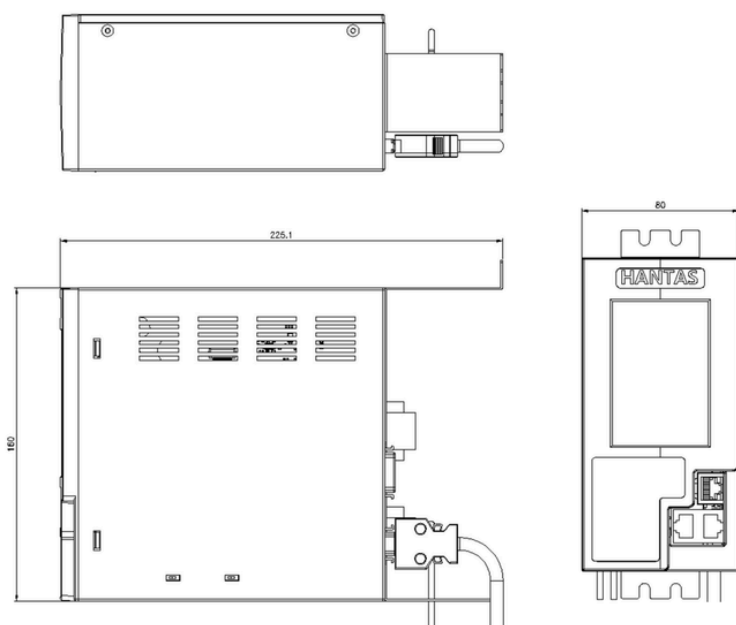
Real-time graph monitoring (2 channel)

SPECIFICATIONS OF CONTROL DRIVE & SPINDLE

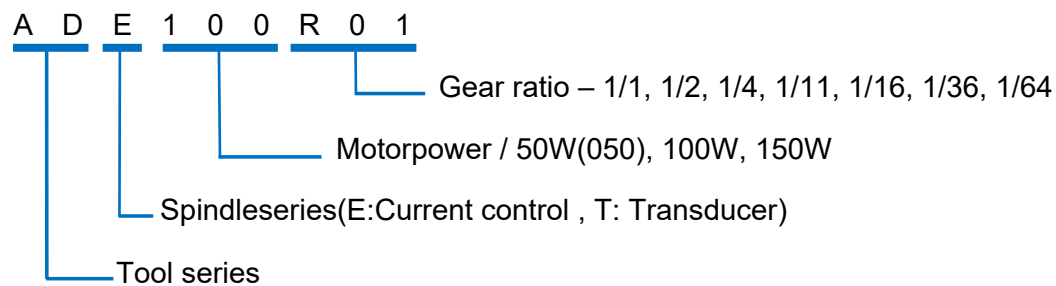
CONTROL DRIVE

Model	ADC 2
Input power	200-230Vac, 50/60Hz single phase
Rated Output	310Vdc, 4.5A
Temperature	Operation 0-50°C, Storage -20~65°C / 90% RH
Humidity	90% RH
Protection	Over current, overload, overheat, over & low voltage
COM port	RS-422, I/O, Ethernet, CAN(Sync)
Protocol	Modbus RTU & TCP, Open Protocol
No. of program	31 presets
Auto paring	Auto detection of the spindle when power ON of the drive

DRAWING OF ADC 2 CONTROLLER



MODEL



ADE050R01
ADE100R01

Bit Holder

Vacuum Pick-up Assy



ADE150R01

ADE150R02

ADT150R04

ADT150R11
ADT150R16

ADT150R36
ADT150R64

MODEL SPECIFICATION

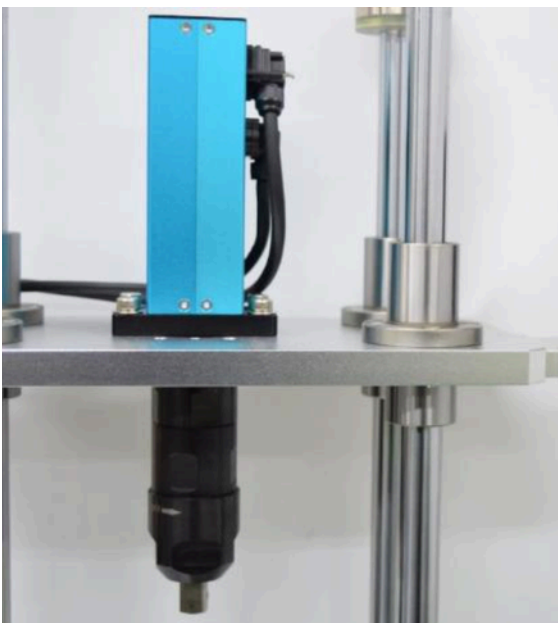
CURRENT CONTROL

Model	Torque (kgf.cm)	Speed	Bit Socket
ADE050R01	0.5 ~ 5.5	100~2000	Hex1/4" or dia.4
ADE100R01	1.5 ~ 12	150~2000	Hex1/4"
ADE150R01	2 ~ 20	150~2000	Hex1/4"
ADE150R02	4 ~ 35	150~2000	Hex1/4"
ADE150R03	6 ~ 50	100~1200	Hex1/4"
ADE150R04	8 ~ 70	100~1200	Hex1/4"
ADE150R11	20 ~ 175	50~440	Hex1/4"
ADE150R16	30 ~ 255	30~300	Hex1/4" or SQ3/8"
ADE150R24	50 ~ 385	20~200	SQ3/8"
ADE150R36	70 ~ 550	20~135	SQ3/8"
ADE150R64	100 ~ 820	10~75	SQ3/8" or SQ1/2"

TRANSDUCER

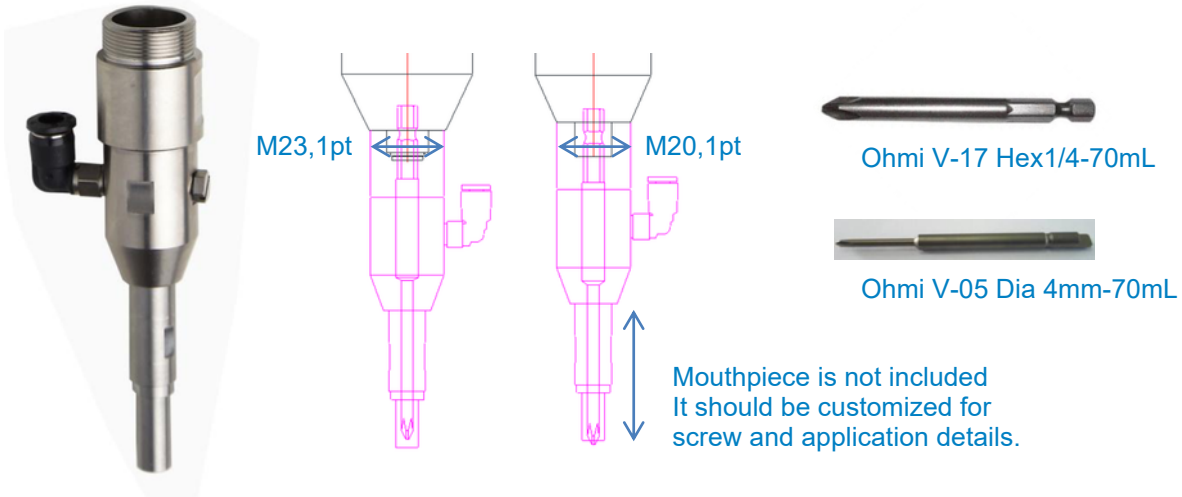
Model	Torque (kgf.cm)	Speed	Bit Socket
ADT150R03	6 ~ 50	100~1200	Hex1/4"
ADT150R04	8 ~ 70	100~1200	Hex1/4"
ADT150R11	20 ~ 175	50~440	Hex1/4"
ADT150R16	30 ~ 255	30~300	Hex1/4" or SQ3/8"
ADT150R24	50 ~ 385	20~200	SQ3/8"
ADT150R36	70 ~ 550	20~135	SQ3/8"
ADT150R64	100 ~ 820	10~75	SQ3/8" or SQ1/2"

CUSTOM DESIGN



OPTIONAL ACCESSORIES

Vacuum Pick-up Assy (VPA)



Code	Item	Specification	Screwdriver	Bit
300056	Vacuum Pick-up Assy	Hex 1/4", M20	MD26xx-A	Ohmi V-17, 70mmL
300057	Vacuum Pick-up Assy	Hex 1/4", M23	MD32xx-A	Ohmi V-17, 70mmL
300058	Vacuum Pick-up Assy	Dia 4 mm, M20	MD26xx-E	Dia 4mm half moon

Bit Holder Assy

Extra bit holder with bearing provides better bit concentricity for especially long length bit.



Code	Item	Specification	Screwdriver	Bit
300053	Bit Holder Assy	Hex 1/4", M20	MD26xx-A	Ohmi V-17, 70mmL
300054	Bit Holder Assy	Hex 1/4", M23	MD32xx-A	Ohmi V-17, 70mmL
300055	Bit Holder Assy	Dia 4 mm, M20	MD26xx-E	Dia 4mm half moon

ParaMon Touch for AD

7" color TFT LCD with touch screen pad, ParaMon Touch provides total 256 extended presets. Programs are saved in the pad itself and change settings through the Virtual Preset of the ADC2 controller. Automatic data saving in SD card.



- DC 24V, 1A
- Connection to ADC2 by RS-422 or Ethernet
- Total 256 presets programs
- Data memory in SD card
- Include same settings of ADC2
- Easy mounting on the panel

44P I/O Wiring Box

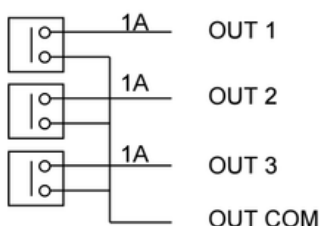
It provides easy and convenient wiring for 12 inputs and outputs of ADC controller by sharing one single 24V power source.



[105004] I/O wiring box D-Sub 44P

Output port has the relay contact with the max 1A capacity for each port. Be sure that the 24VDC power supply should have enough capacity for total output load

D-Sub 44P		D-Sub 44P		D-Sub 44P	
1	IN 1	16	OUT 1	31	24V+
2	IN 2	17	OUT 2	32	24V+
3	IN 3	18	OUT 3	33	24V+
4	IN 4	19	OUT 4	34	-
5	IN 5	20	OUT 5	35	Out Com
6	IN 6	21	OUT 6	36	Out Com
7	IN 7	22	OUT 7	37	Out Com
8	IN 8	23	OUT 8	38	-
9	IN 9	24	OUT 9	39	-
10	IN 10	25	OUT 10	40	-
11	IN 11	26	OUT 11	41	-
12	IN 12	27	OUT 12	42	-
13	-	28	-	43	-
14	IN Com	29	Out Com	44	-
15	IN Com	30	Out Com		



[500236] I/O cable D-Sub 44P-44P (DPC Touch)
[500392] I/O cable D-Sub 25P-44P (MDC controller)

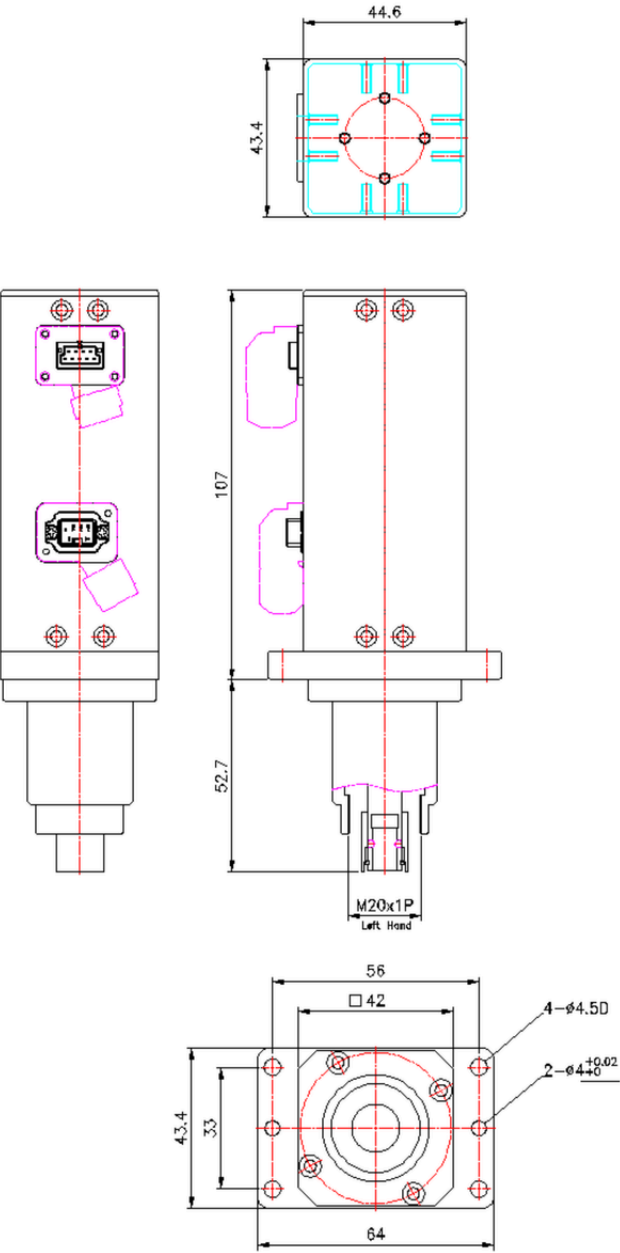
I/O simulation box

15 toggle switches for input no.1 to 15 and 8 LED lights for output no. 1 to 15 by 25P D-Sub connector. It is easy to demonstrate AD tools without PLC.

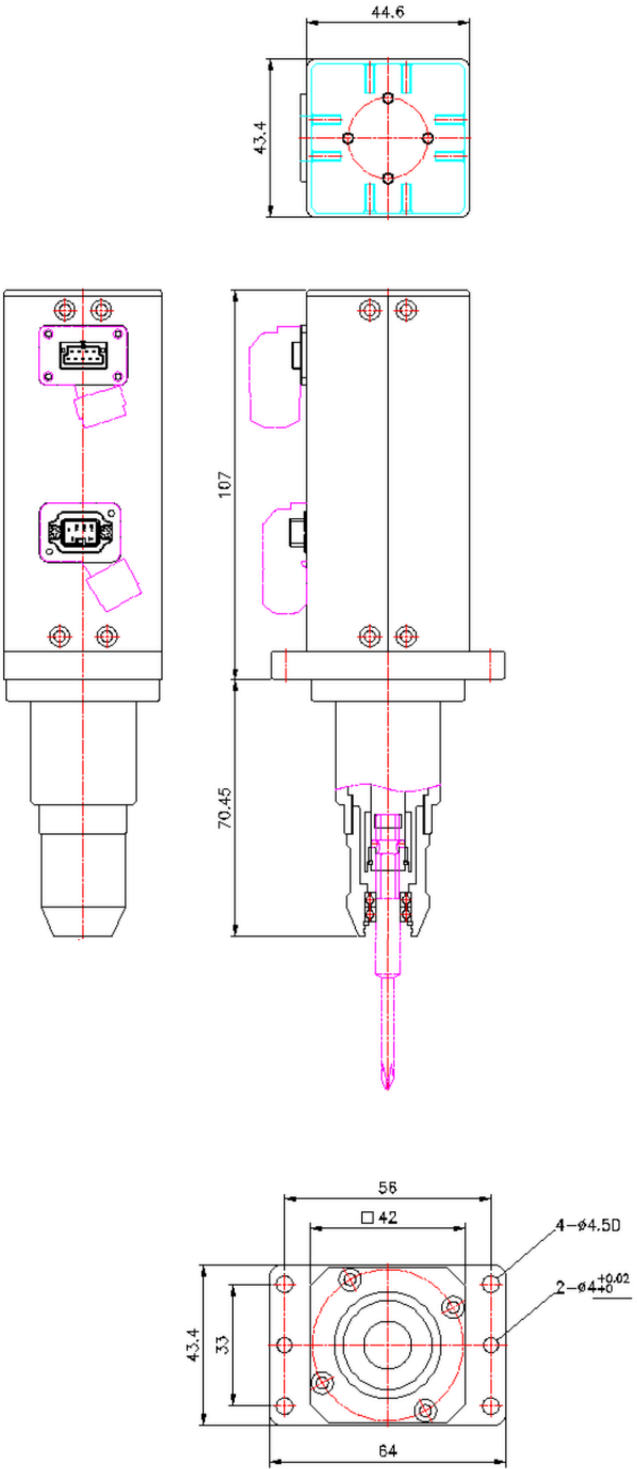


LAYOUT DRAWINGS

ADE050R01-A+C
ADE050R01-A

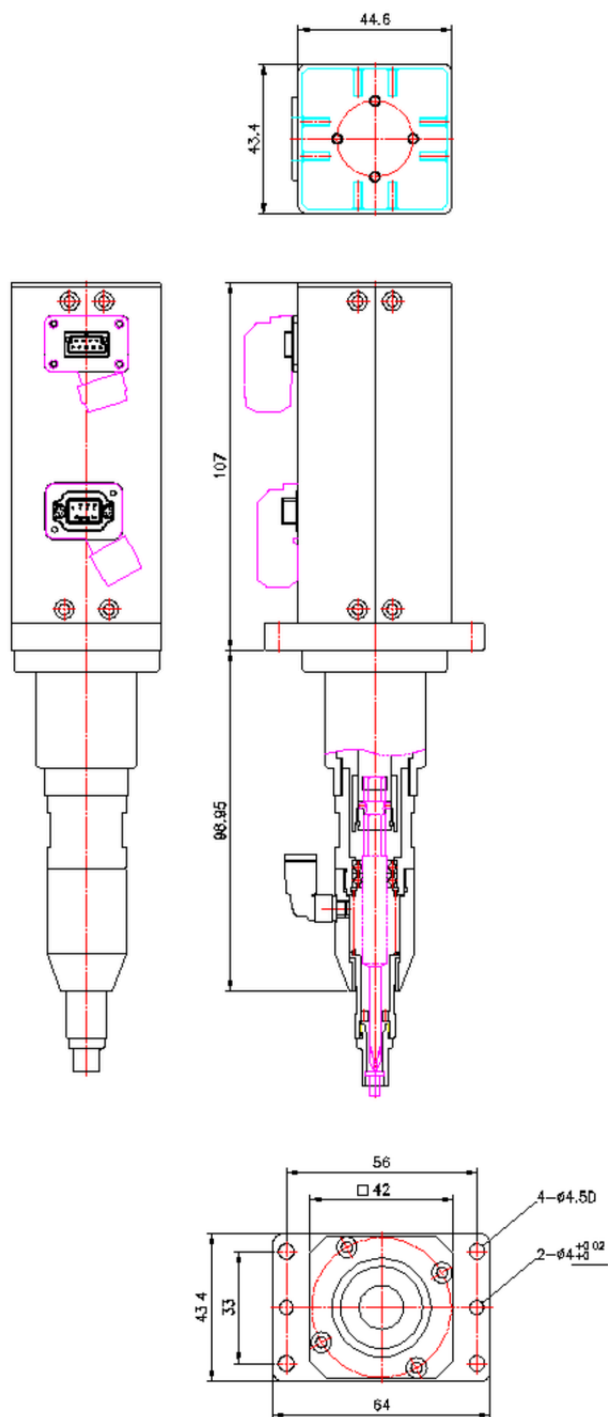


ADE050R01-A+Bit Holder

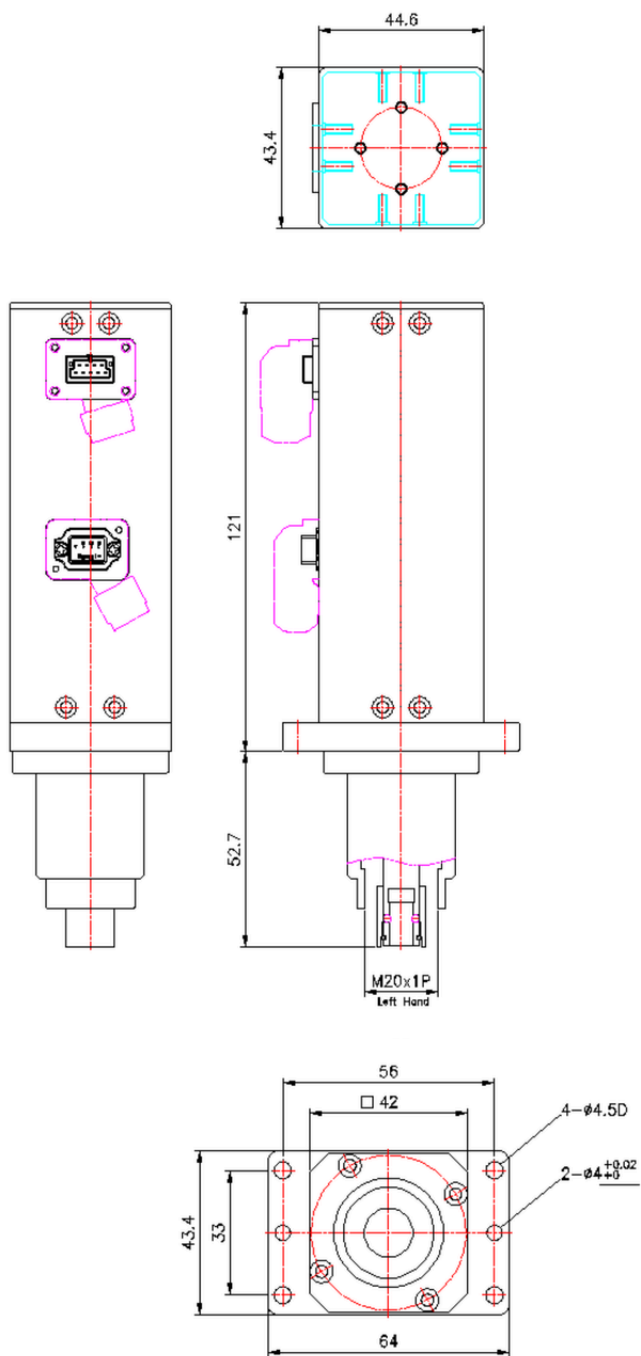


ADE050R01-A+VC

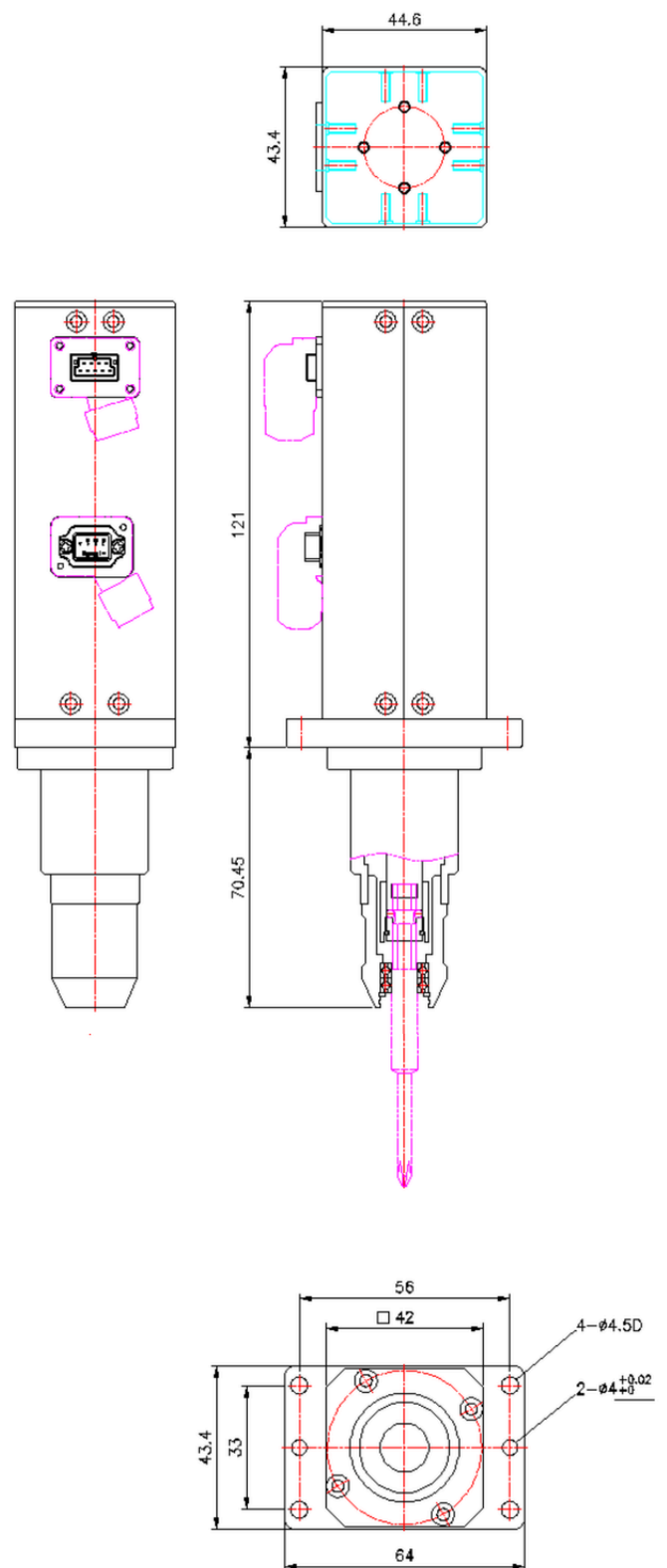
ADE050R01-A+V



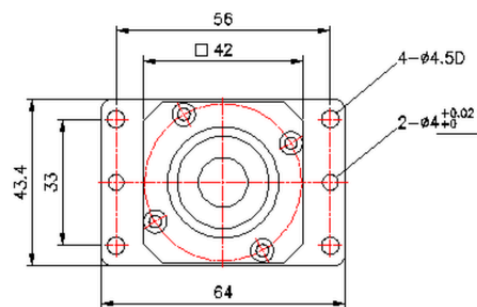
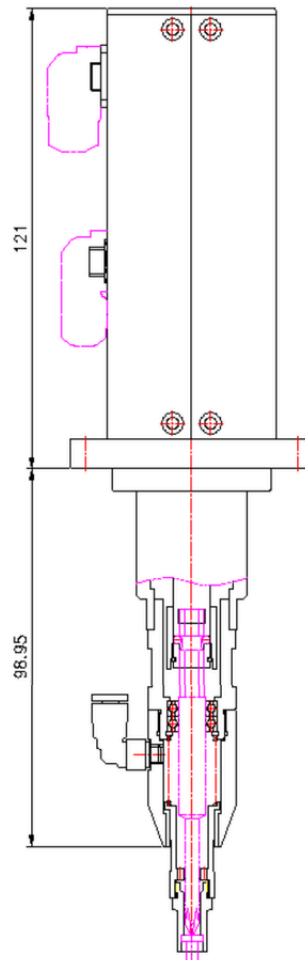
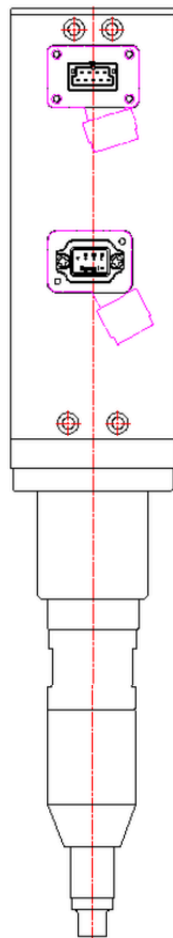
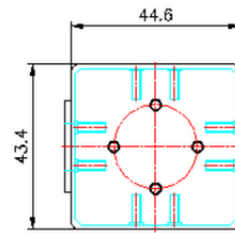
ADE100R01-A+C ADE100R01-A



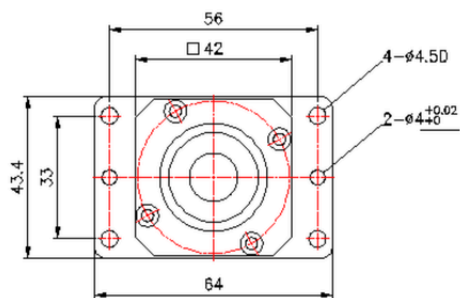
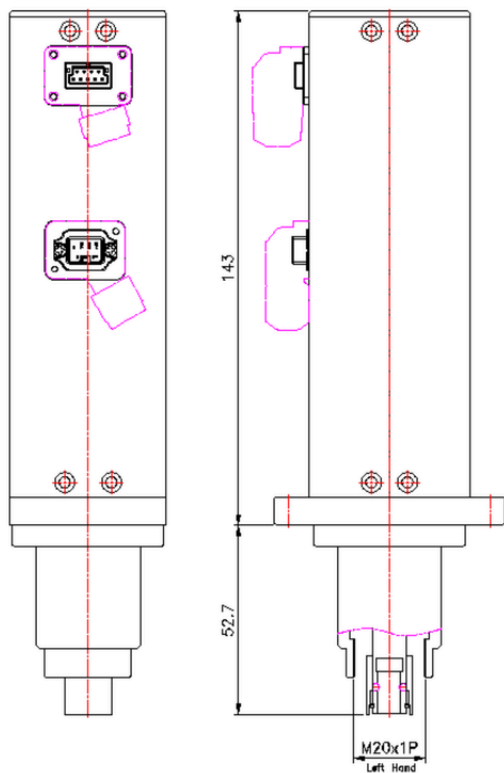
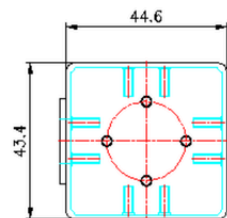
ADE100R01-A+Bit Holder



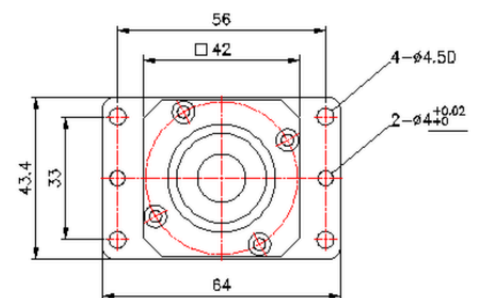
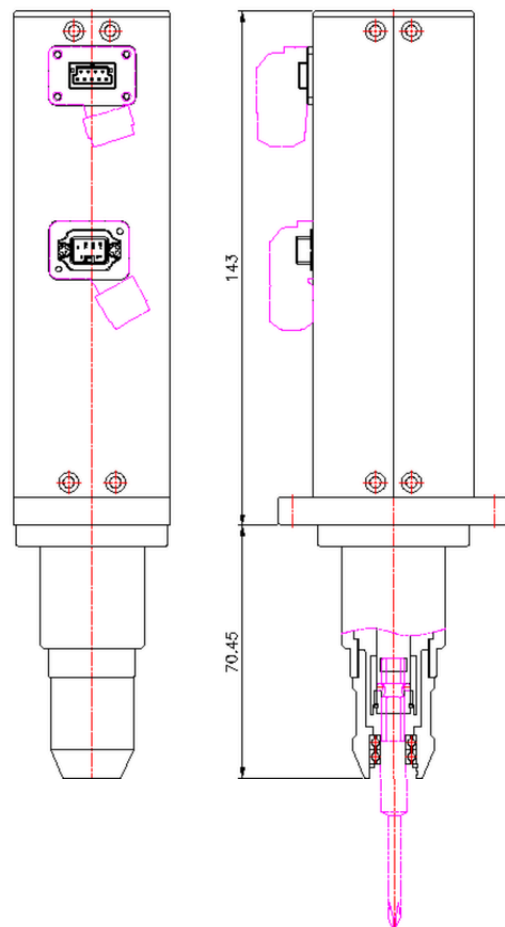
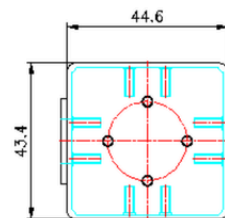
ADE100R01-A+VC
ADE100R01-A+V



ADE150R01-A+C ADE150R01-A

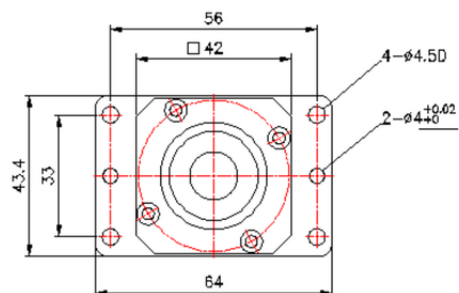
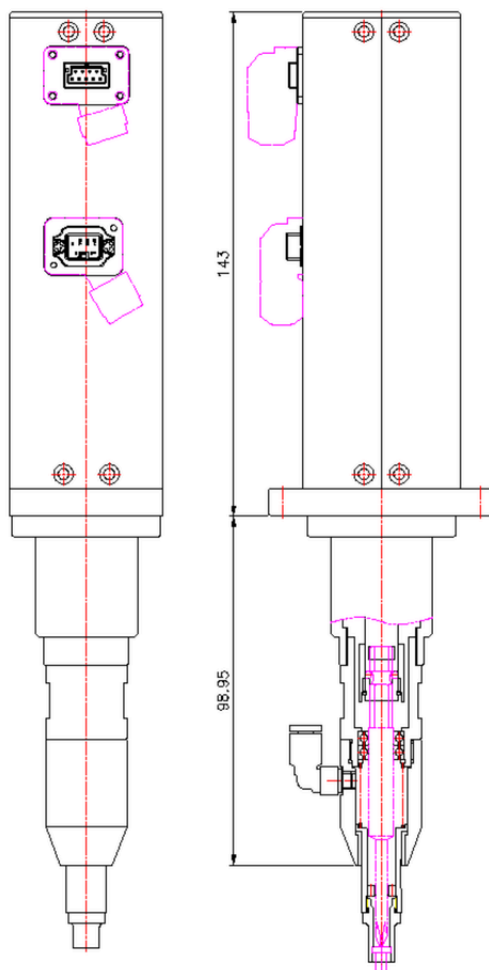
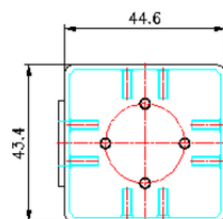


ADE150R01-A+Bit Holder



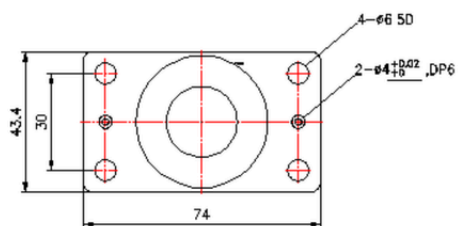
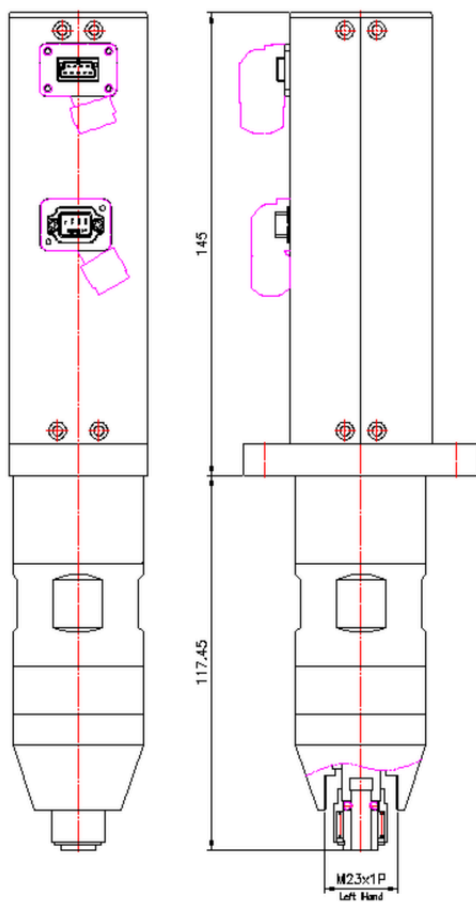
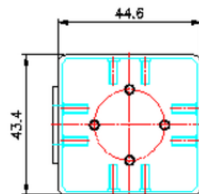
ADE150R01-A+VC

ADE150R01-A+V

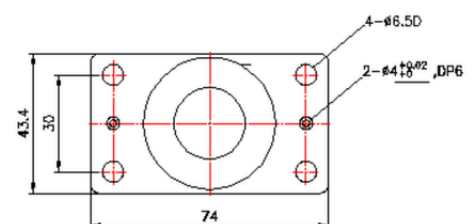
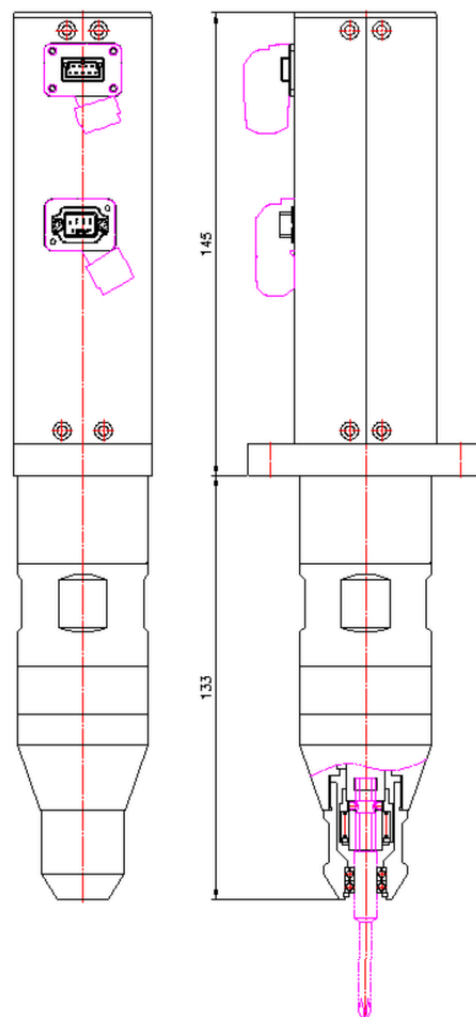
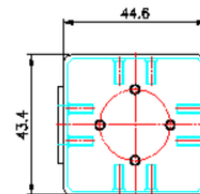


ADT150R03 / 04 / 06

ADT150R03-A+C
ADT150R03-A

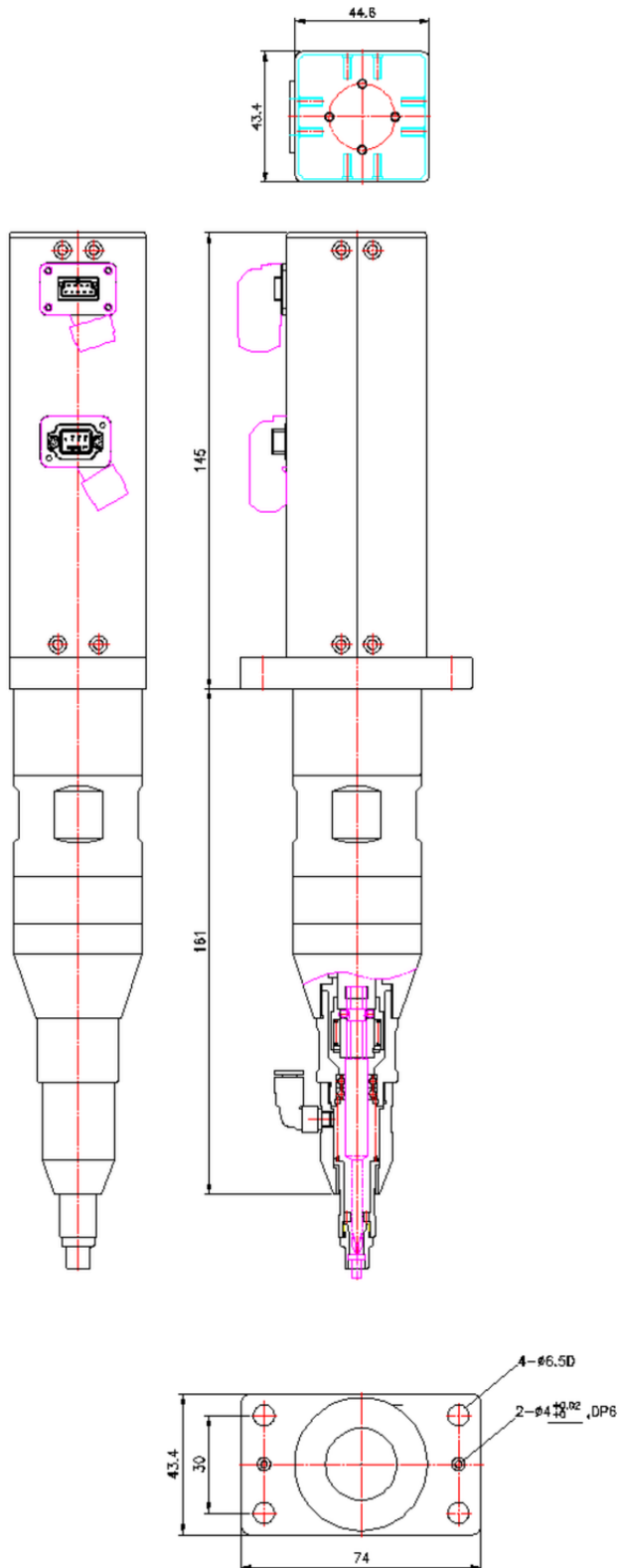


ADT150R03-A+Bit Holder

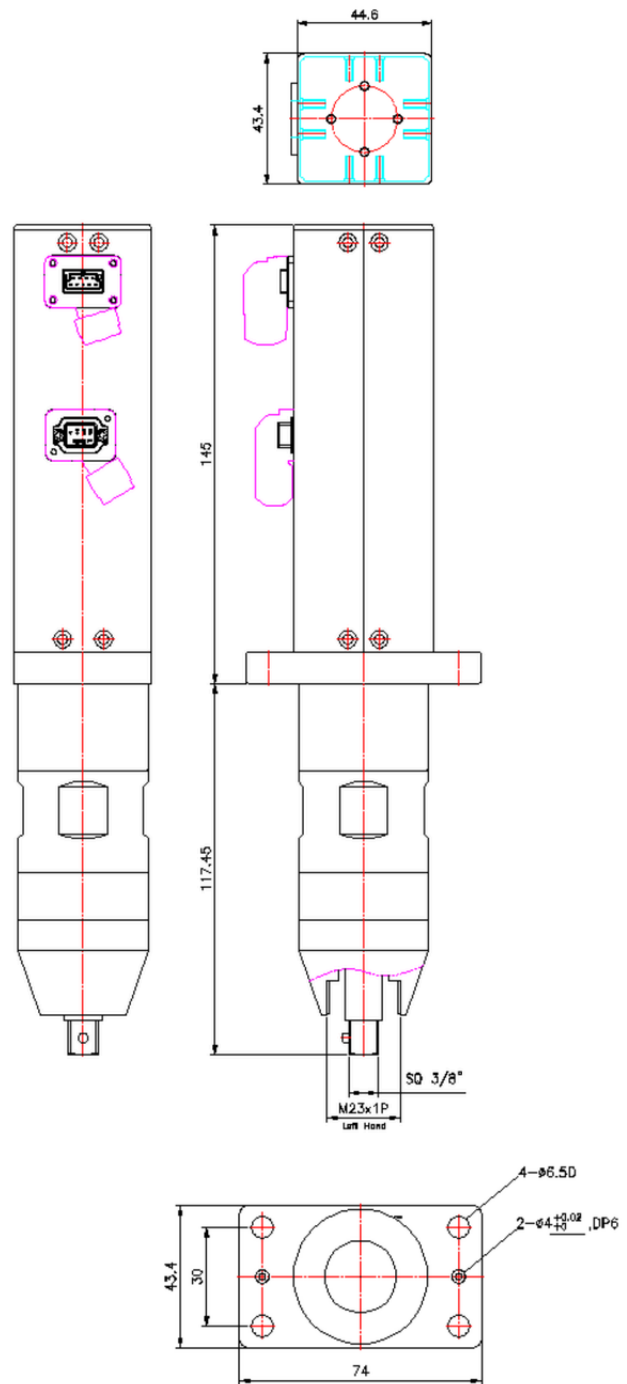


ADE150R03-A+VC

ADE150R03-A+V

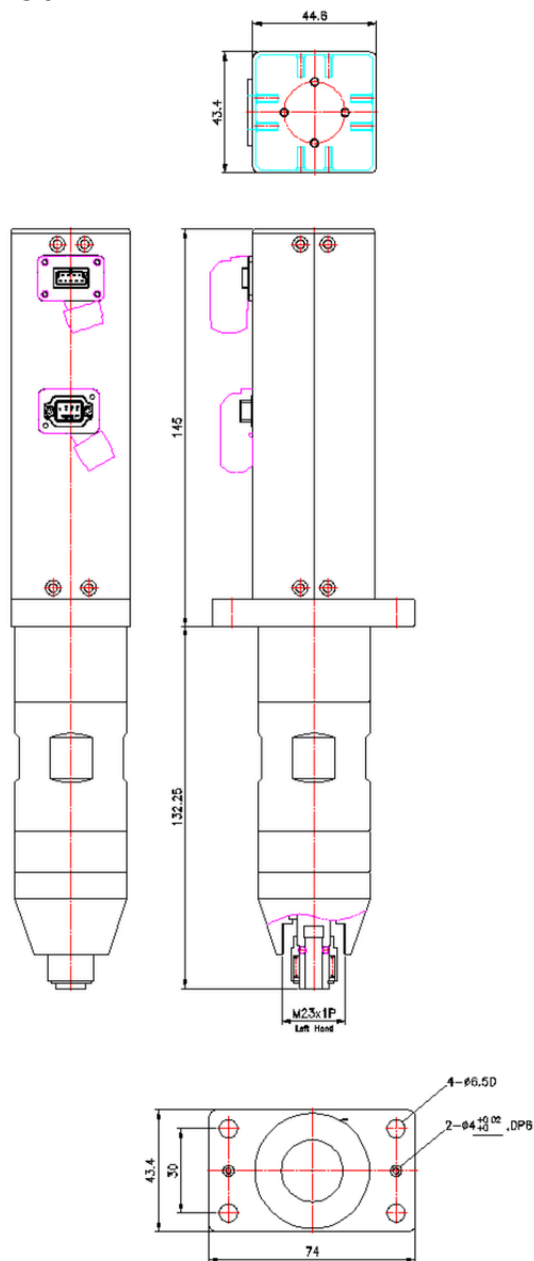


ADE150R03-Q

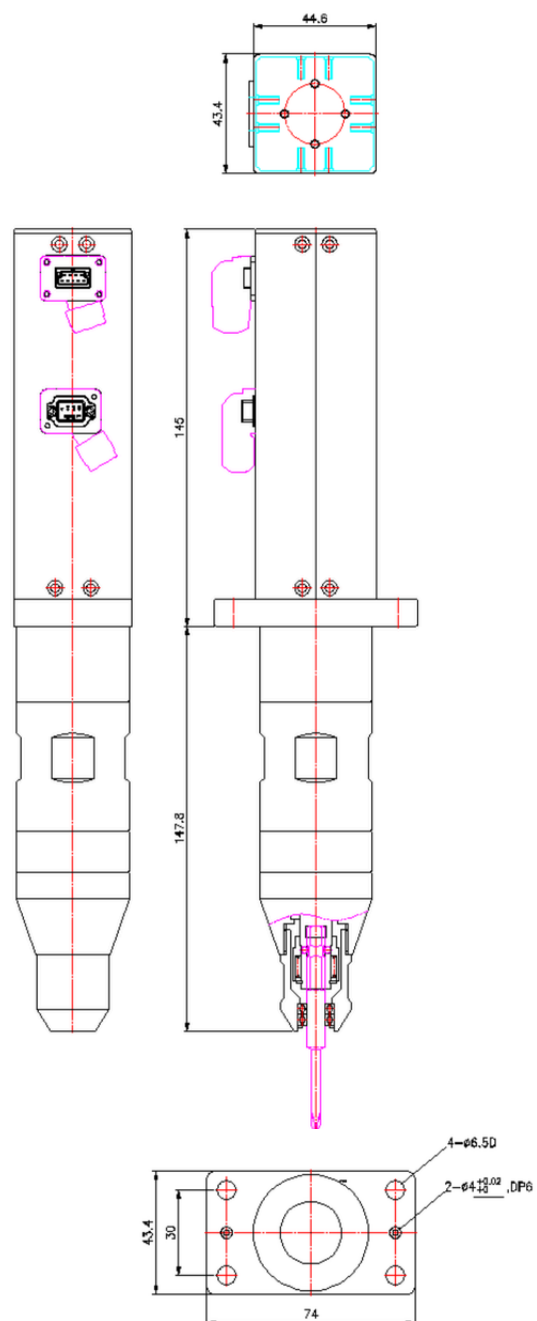


ADT150R-11 / 16 / 20 / 24 / 36

ADT150R11-A+C
ADT150R11-A

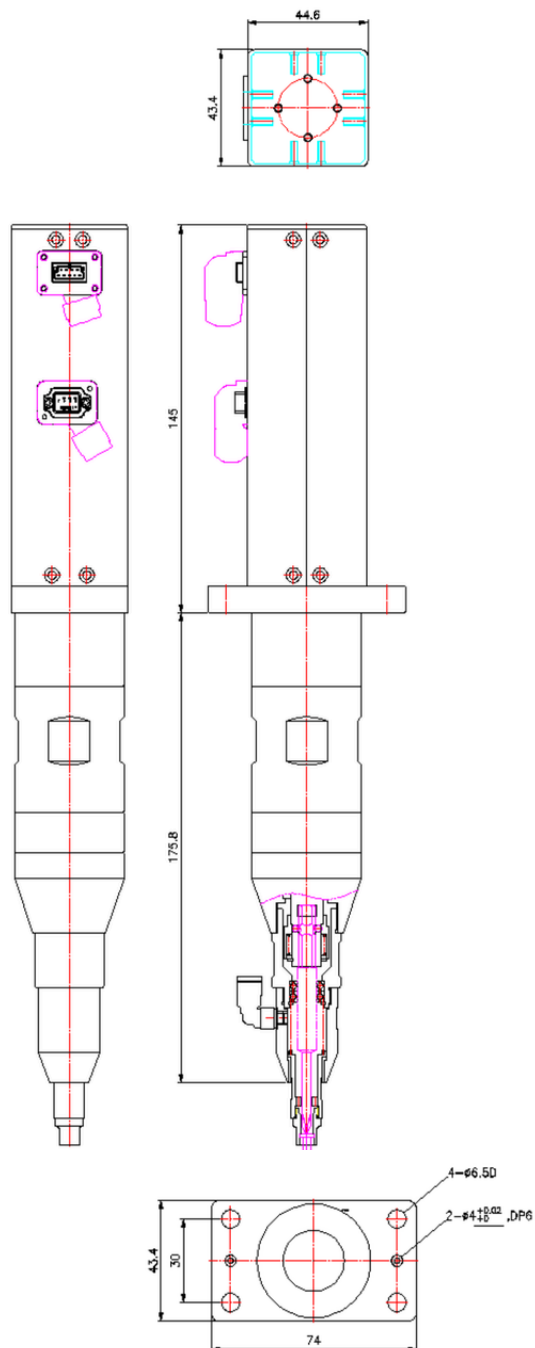


ADT150R11-A+Bit Holder

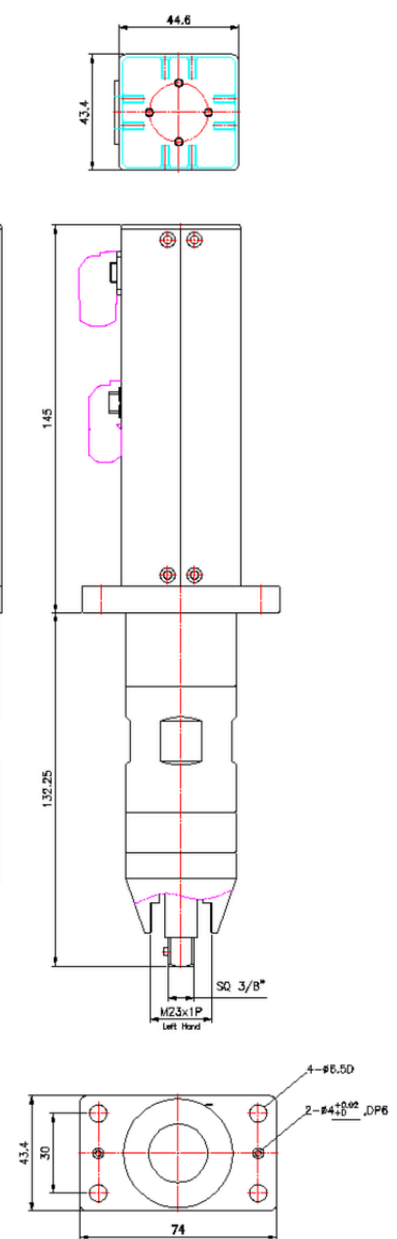


ADT150R11-A+VC

ADT150R11-A+V



ADT150R11-Q





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