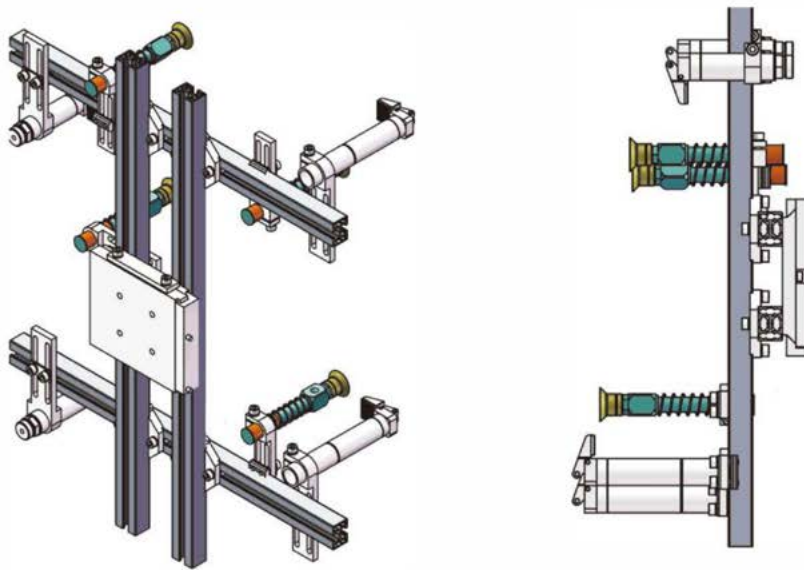
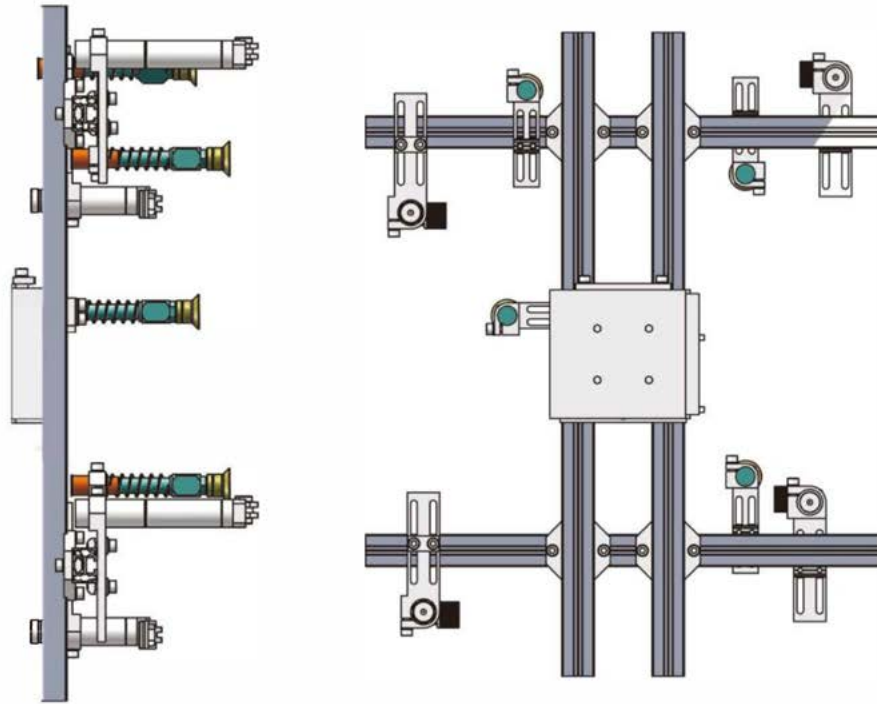




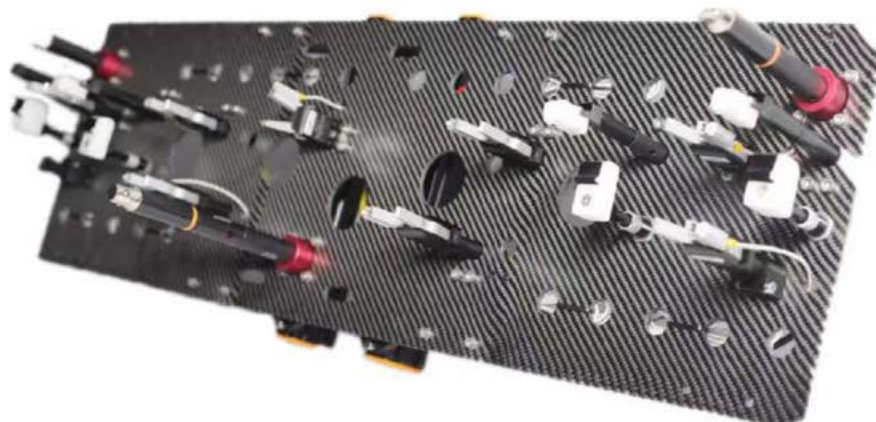
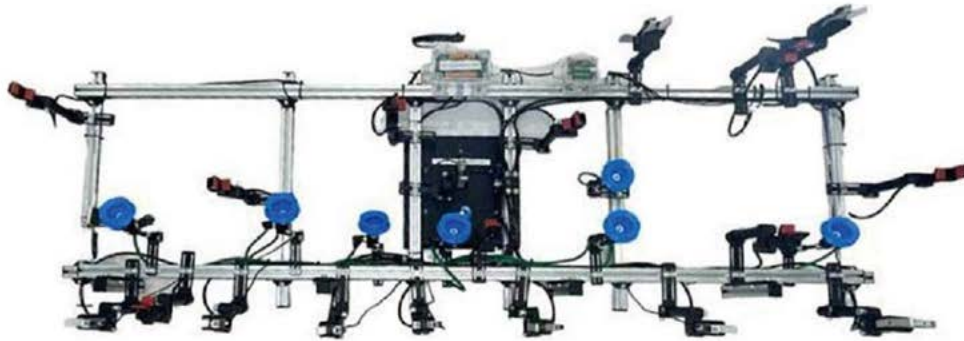
**EOAT**

*End of Arm Tooling*

## EOAT Application Example



## EOAT Application Example



# General Index



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*Aluminum Profiles*



*STN -- Page 2 ~ 3*  
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**NEW**



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*FCMB -- Page 16*  
*Cross mounting bracket for profile*



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*FRMB -- Page 18*  
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*FSEA-- Page 40*  
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*FSMB-D -- Page 36*  
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*FSCE1-- Page 44*  
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# General Index



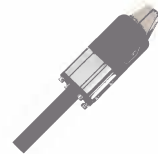
*FSCE3-- Page 45*  
*NR Air nipper mounting bracket*



*FGST20-16 -- Page 90~101*  
*16mm Sprue Gripper*



*FSCE3-NR -- Page 46*  
*NR Air nipper mounting bracket*



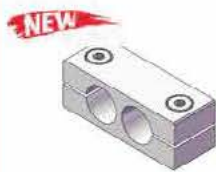
*FGSRP-32A -- Page 102*  
*Powerful Sprue Gripper*



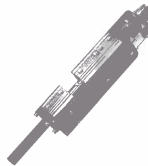
*FSCE2 -- Page 47~49*  
*NY Air nipper mounting bracket*



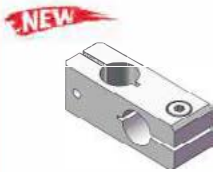
*FGSRP-32A-30 -- Page 103*  
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*FTMC1-- Page 50 (OEM/ODM)*  
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*FGSRP-32A-3020 -- Page 104*  
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*FGSR14/20-90 -- Page 105~123*  
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*FGS14-14 -- Page 65~76*  
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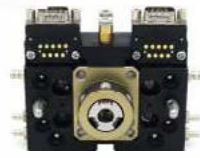
# General Index



*FMHZ2-- Page 124~127*

*Parallel Gripper*

**NEW**



*FSLA-R10 -- Page 143*

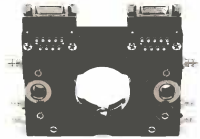
*Square quick changer (Automatic)*



*FGSS -- Page 128~135*

*Square quick changer (Manual)*

**NEW**



*FSLA-G10 -- Page 144*

*Square quick changer (Automatic)*



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*Round quick changer (Manual)*



*FQC-50/90/150/200-Page 145~151*

*Round quick changer (Manual)*

**NEW**



*FSL-R15 -- Page 139~142*

*Square quick changer (Manual)*



*FQCA-25/35/50/100-Page 151~155*

*Round quick changer (Automatic)*

**NEW**



*FSL-G15 -- Page 139~142*

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*FSVR/N/E/SK -- Page 158~166*

*Suspension for vacuum cup*

**NEW**



*FSL-R35 -- Page 139~142*

*Square quick changer (Manual)*



*FVFM -- Page 167*

*Rotative Suspension*

**NEW**



*FSL-G35 -- Page 139~142*

*Square quick changer (Manual)*



*FVSG-- Page 168*

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*Vacuum cups - 1 bellows*



*FACS/L/T/Y -- Page 176~180*

*Air Hose Connecting Fitting*

**NEW**



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*Vacuum cups - 2 bellows*



*FFT -- Page 181~182*

*Vacuum cups fitting*



*FVS3-- Page 171*

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*Air Hose*



*FVS1-M -- Page 172*

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*GT-N /NR / NS /NY /NT*



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*Sponge Vacuum cups - 2 bellows*



*FVS3-M-- Page 174*

*Sponge Vacuum cups - 3 bellows*

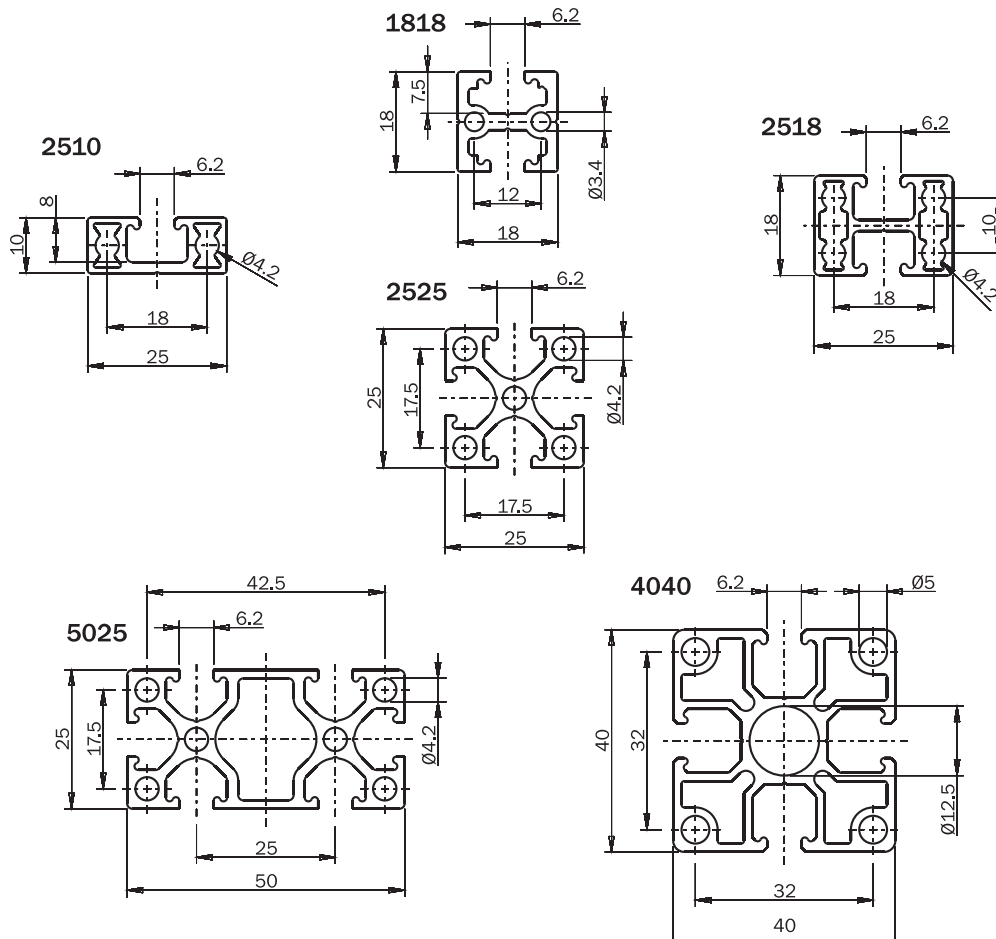
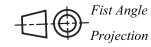


*FACB -- Page 175*

*Air Connector Fitting*

*Aluminium Profile  
AEP - series*

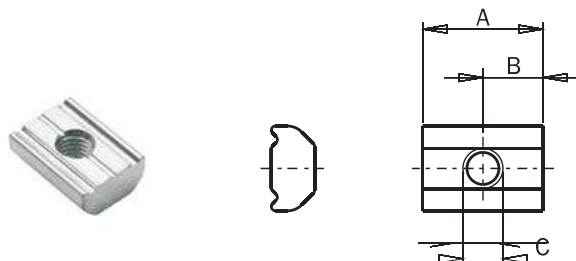
*Dimensions ( mm )*



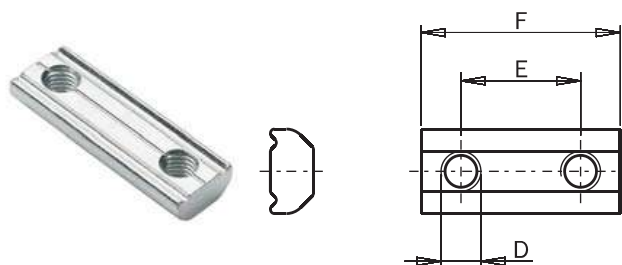
<i>Model</i>	<i>Length</i>	<i>Weight</i>	<i>Plugs</i>
<b>AEP1818-1000</b>	1000mm	425g	PP1818
<b>AEP2510-1000</b>	1000mm	310g	PP2510
<b>AEP2518-1000</b>	1000mm	400g	PP2518
<b>AEP2525-1000</b>	1000mm	610g	PP2525
<b>AEP2525-2000</b>	2000mm	1220g	PP2525
<b>AEP5025-1000</b>	1000mm	1040g	PP5025
<b>AEP5025-2000</b>	2000mm	2080g	PP5025
<b>AEP4040-1000</b>	1000mm	1300g	PP4040
<b>AEP4040-2000</b>	2000mm	2600g	PP4040

*T-Nut*  
*STN - series*

*Dimensions ( mm )*



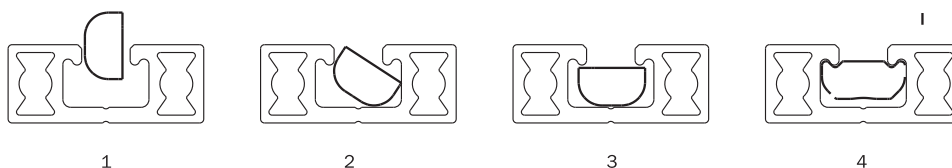
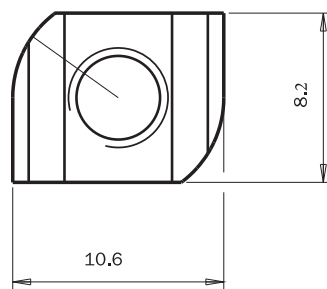
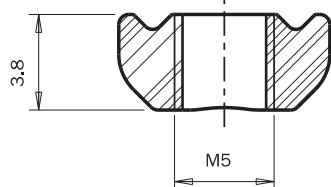
<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>Weight</i>
<b>STN-M4</b>	M4	15	7.5	5g
<b>STN-M5</b>	M5	15	7.5	5g
<b>STN-M6</b>	M6	15	7.5	5g



<i>Model</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>Weight</i>
<b>STN-M4P8</b>	M4	8	16	5g
<b>STN-M5P10</b>	M5	10	20	7g
<b>STN-M5P15</b>	M5	15	25	9g
<b>STN-M5P17</b>	M5	17	25	9g
<b>STN-M5P22</b>	M5	22	32	11g
<b>STN-M5P25</b>	M5	25	35	13g
<b>STN-M5P28</b>	M5	28	38	14g
<b>STN-M5P30</b>	M5	30	40	15g
<b>STN-M5P35</b>	M5	35	45	16g
<b>STN-M5P40</b>	M5	40	50	18g
<b>STN-M5P50</b>	M5	50	60	22g
<b>STN-M5P60</b>	M5	60	70	26g
<b>STN-M5P90</b>	M5	90	100	38g

Last-Minute Nut  
*STN-M5R*

*Dimensions ( mm )*

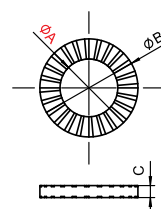


<i>Model</i>	<i>Weight</i>
<b>STN-M5R</b>	<b>2g</b>



Single Hole Shim  
STS - series

Dimensions ( mm )

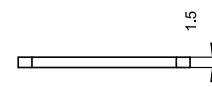
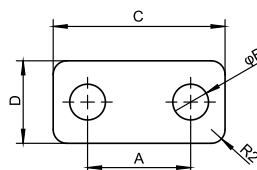


First Angle Projection

Model	A	B	C	Weight
STS-M4	4.5	7	0.45	0.07g
STS-M5	5.5	9	0.55	0.17g
STS-M6	6.5	10	0.65	0.20g

Double Hole Shim  
STD - series

Dimensions ( mm )

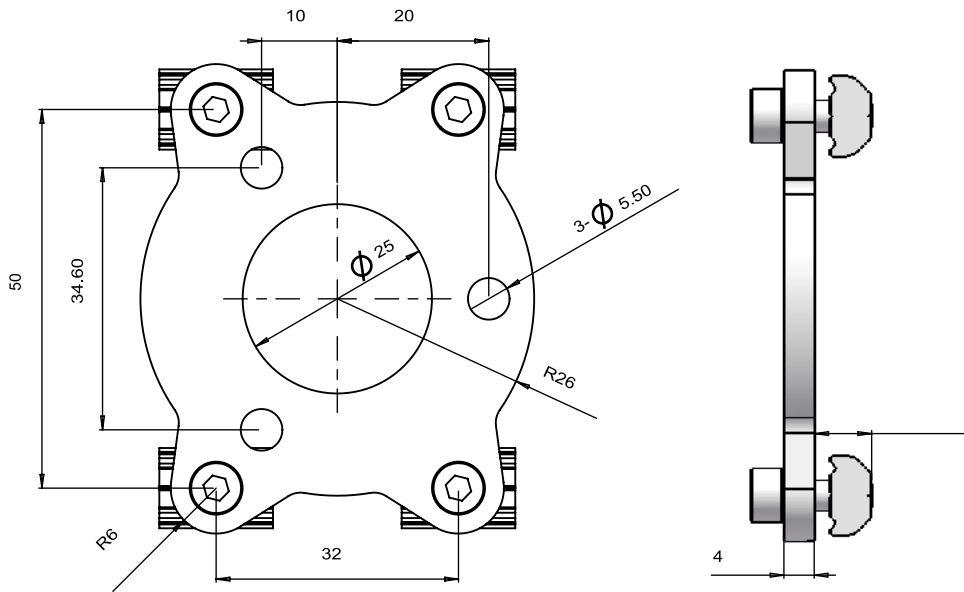


First Angle Projection

Model	A	B	C	D	Weight
STD-M4P8	8	4.5	16	12	0.07g
STD-M5P10	10	5.5	20	12	0.17g
STD-M5P15	15	5.5	25	12	0.20g
STD-M5P17	17	5.5	25	12	9g
STD-M5P22	22	5.5	32	12	11g
STD-M5P25	25	5.5	35	12	13g

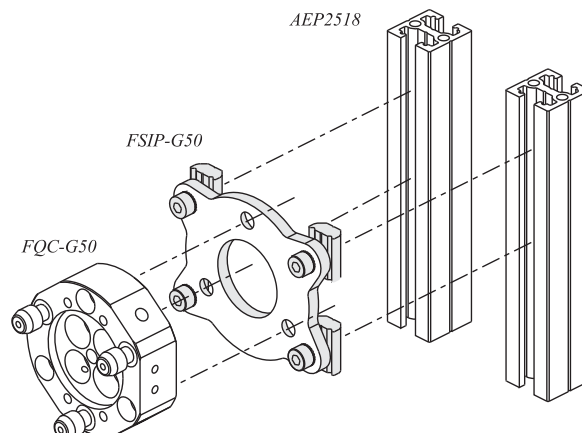
Interface Plate  
*FSIP-G50*

Dimensions ( mm )



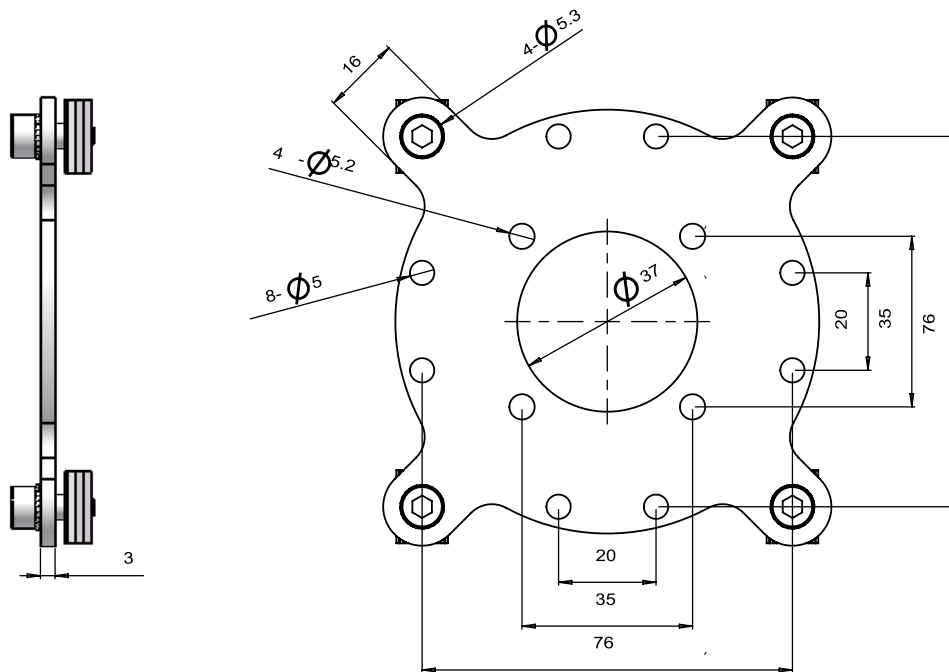
Model	Weight
<b>FSIP-G50</b>	<b>90g</b>

Application Example



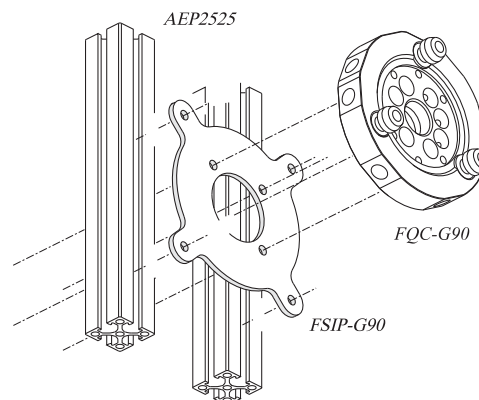
Interface Plate  
FSIP-G90

Dimensions ( mm )



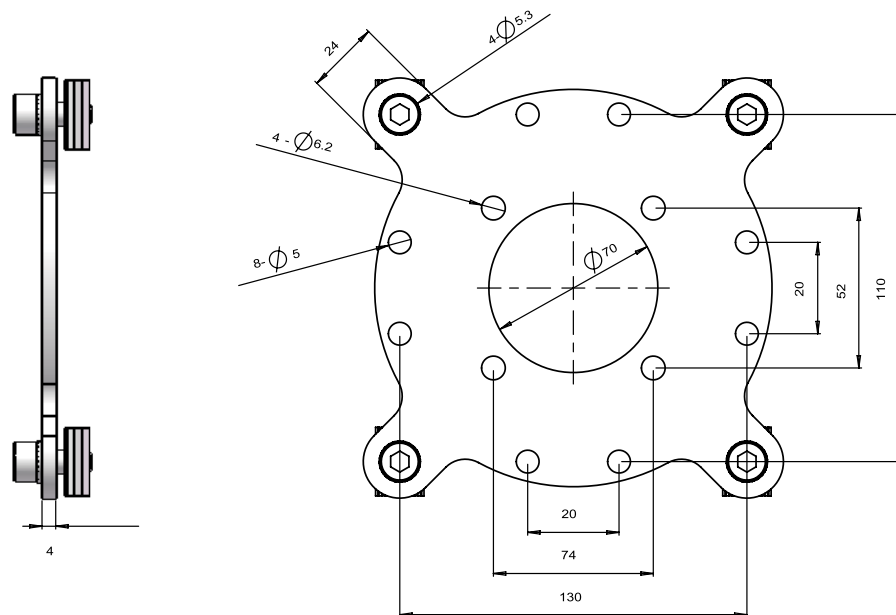
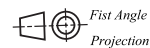
Model	Weight
FSIP-G90	190g

Application Example



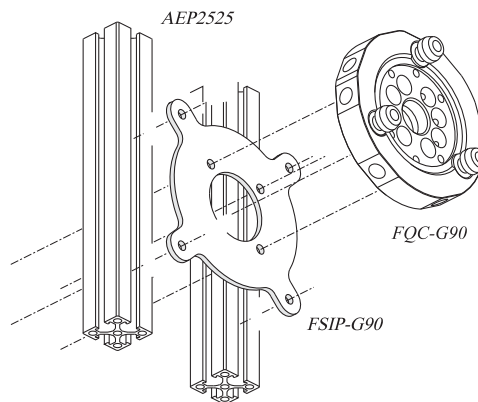
Interface Plate  
FSIP-G150

Dimensions ( mm )



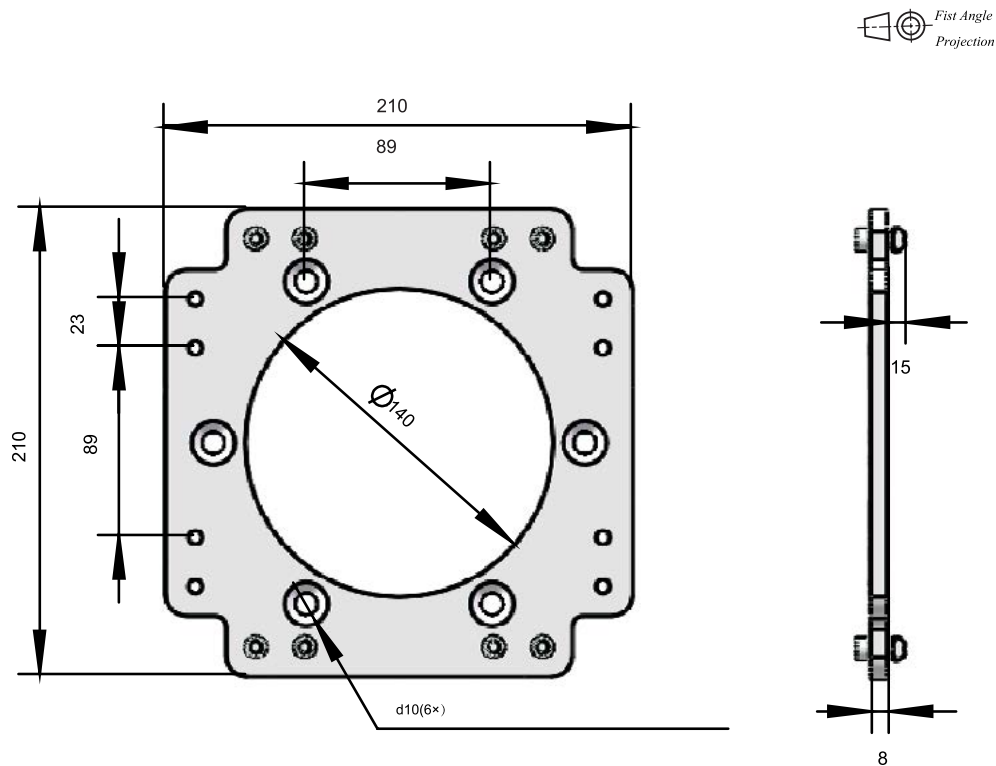
Model	Weight
<b>FSIP-G150</b>	<b>540g</b>

Application Example



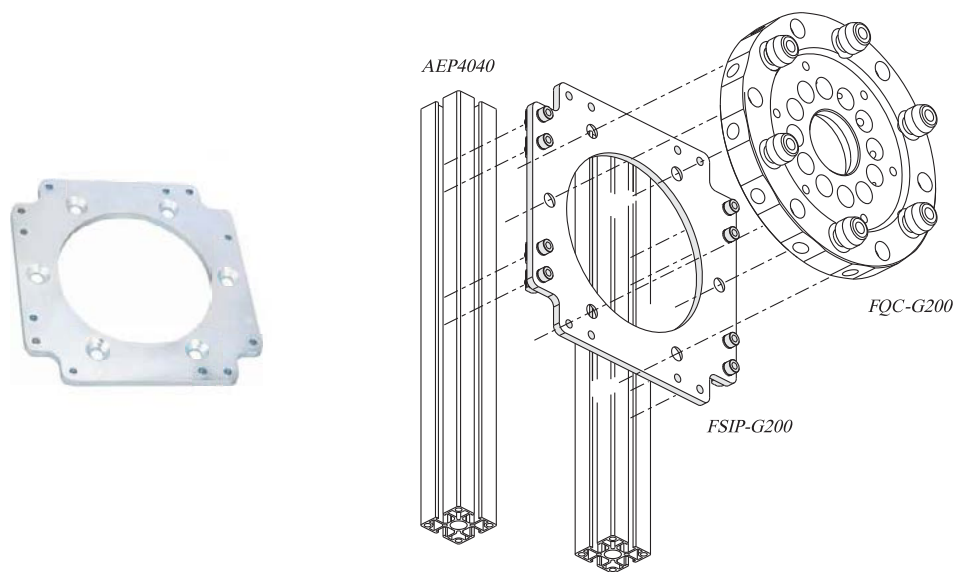
Interface Plate  
FSIP-G200

Dimensions ( mm )



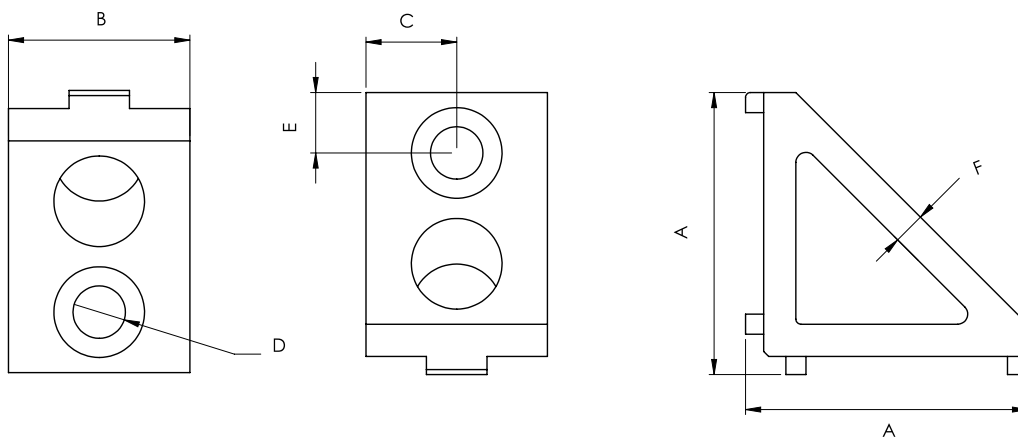
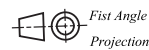
Model	Weight
FSIP-G200	1850g

Application Example



Angle Bracket for profile  
FFAB - series

Dimensions ( mm )



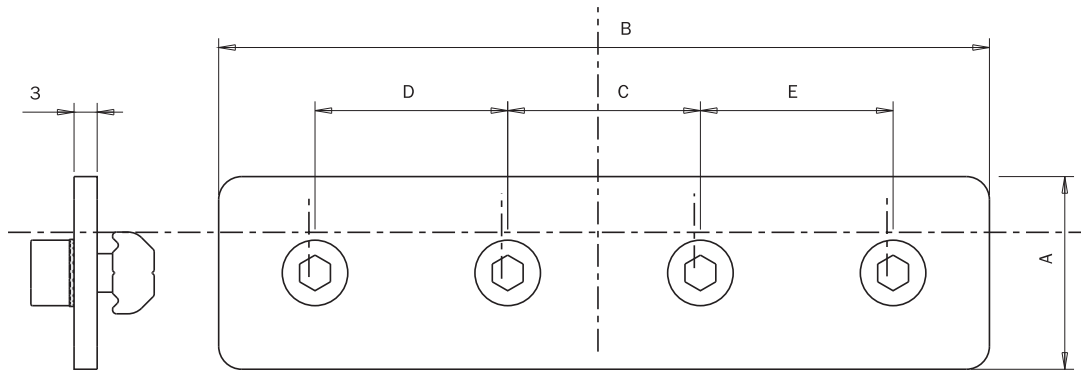
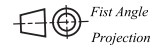
Model	A	B	C	D	E	F	Weight
FFAB-2525T	28	18	9	ø5.2	6	3.2	27g
FFAB-2550T	28	40	25	ø5.2	6	3.2	58g
FFAB-4040T	50	22	11	ø6.2	10	5.5	63g
FFAB-4080T	50	70	40	ø6.2	10	5.5	190g

Application Example



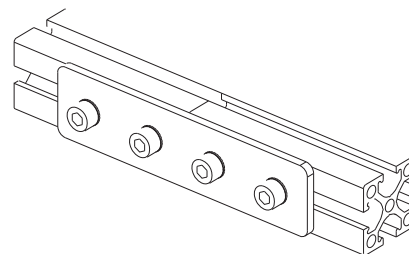
Straight Fixing Plate  
FSP - series

Dimensions ( mm )



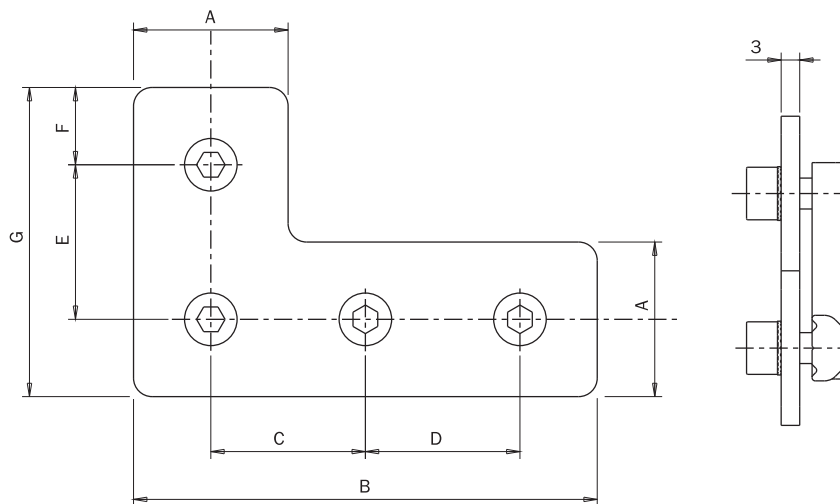
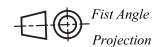
<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>Weight</i>
<b>FSP-2550T</b>	25	50	25			45g
<b>FSP-25100T</b>	25	100	25	25	25	95g
<b>FSP-40160T</b>	40	160	40	40	40	195g

Application Example



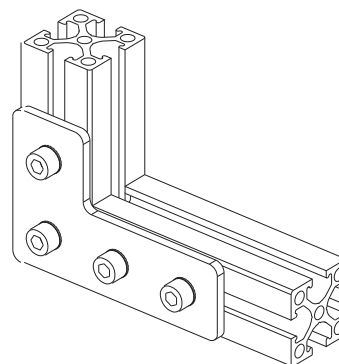
L-type Fixing Plate  
*FLP* - series

Dimensions ( mm )



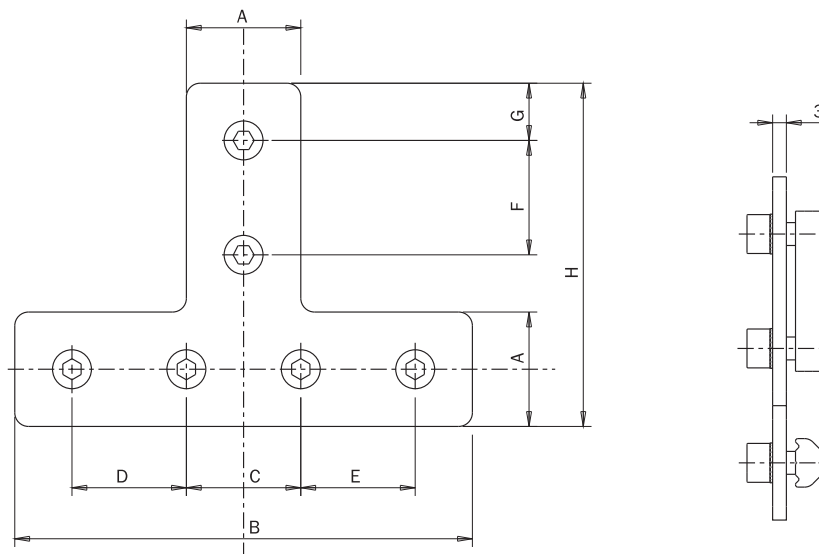
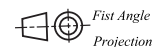
<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>Weight</i>
<b>FLP-2550T</b>	25	50	25		25	12.5	50	70g
<b>FLP-2575T</b>	25	75	25	25	25	12.5	50	95g
<b>FLP-40120T</b>	40	120	40	40	40	20	80	200g

*Application Example*



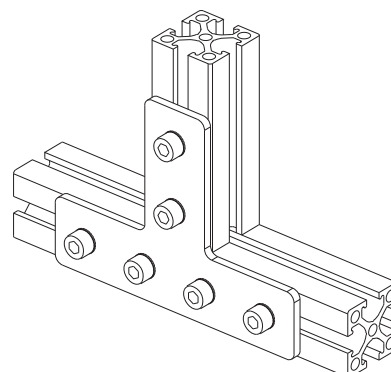
T-shaped fixing plate  
-FTP - series

Dimensions ( mm )



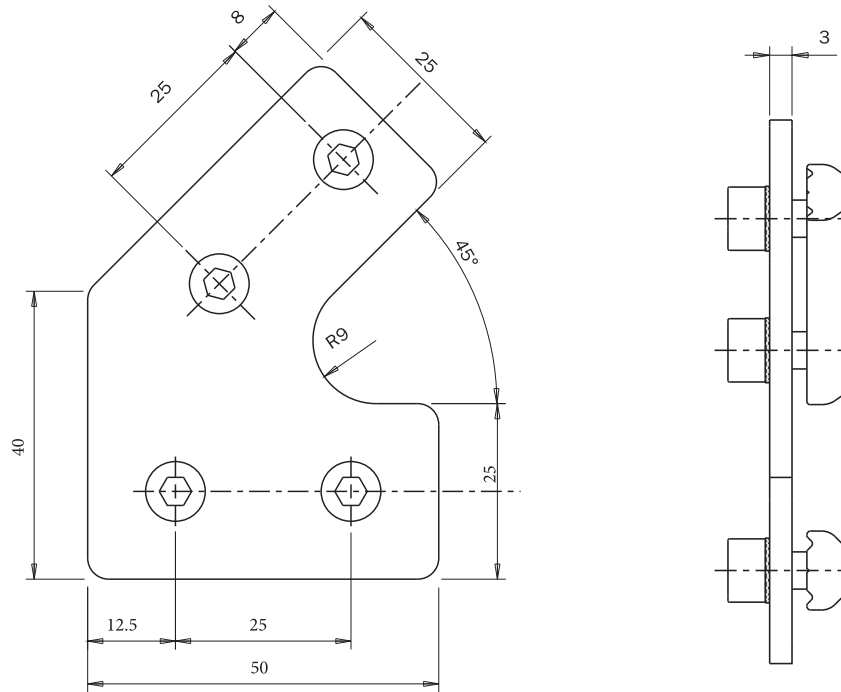
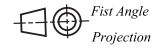
<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>Weight</i>
<b>FTP-2550T</b>	25	50	25			25	12.5	75	95g
<b>FTP-25100T</b>	25	100	25	25	25	25	12.5	75	145g
<b>FTP-40120T</b>	40	120	90			40	15	110	250g

Application Example



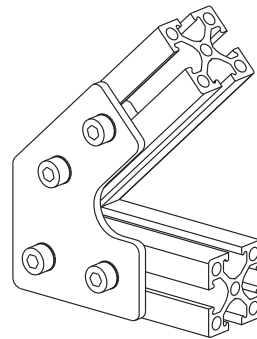
T-shaped fixing plate  
*FTP-45T*

Dimensions ( mm )



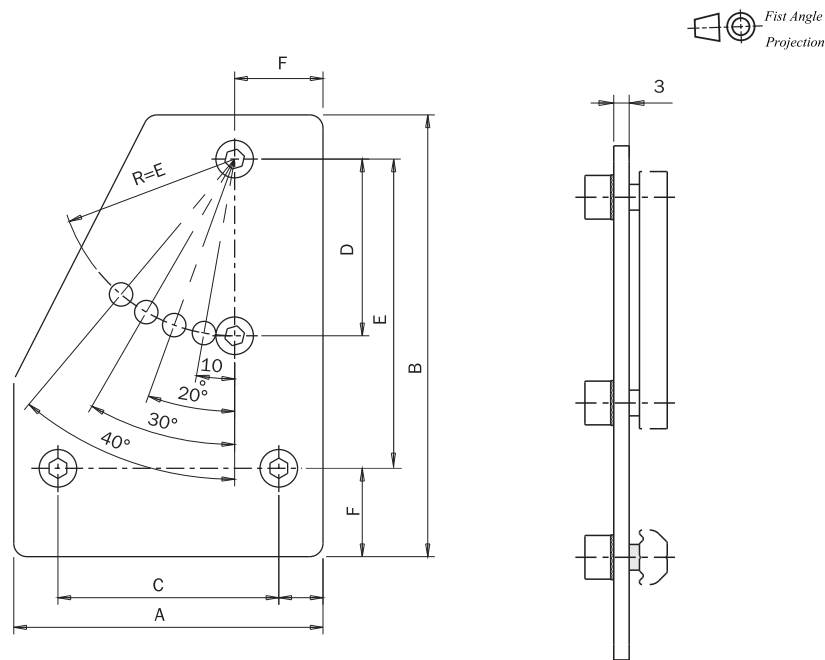
Model	Weight
<b>FTP-45T</b>	100g

*Application Example*



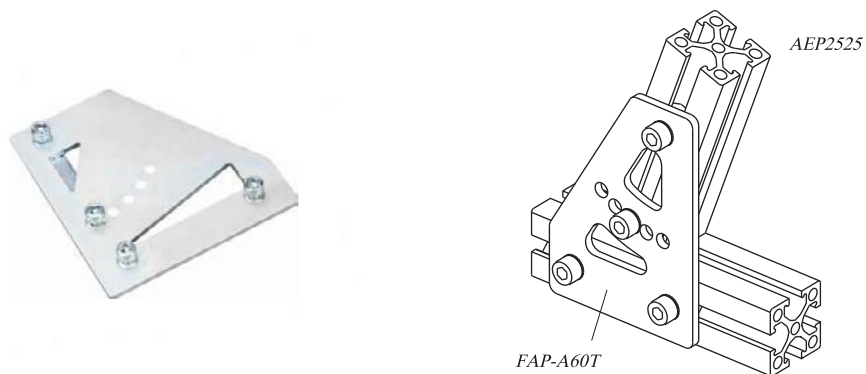
Shaped fixing plate with adjustable angle  
FAP - series

Dimensions (mm)



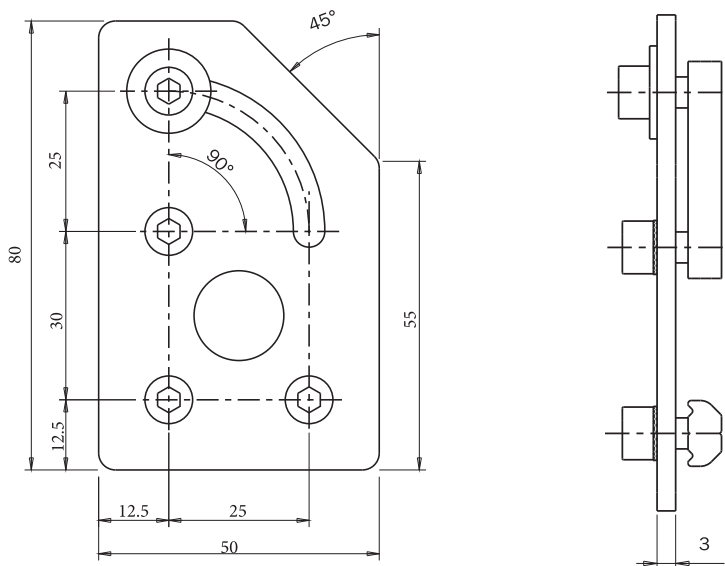
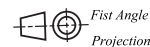
<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>L</i>	<i>M</i>	<i>Weight</i>
<b>FAP-A60T</b>	60	85	40	10	40	12.5	76	12.5	25	30	130g
<b>FAP-A90T</b>	90	95	60	15	50	12.5	86	12.5	25	30	215g
<b>FAP-A70T</b>	70	100	50	10	40	20	90	20	40	27	175g

Application Example



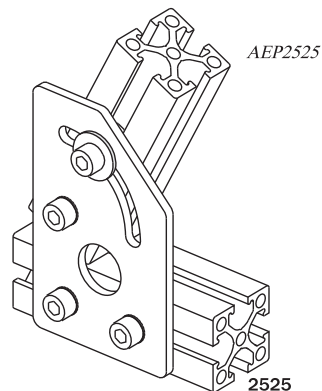
Shaped fixing plate with adjustable angle  
*FAP-A50T*

*Dimensions (mm)*



<i>Model</i>	<i>Weight</i>
<b>FAP-50T</b>	115g

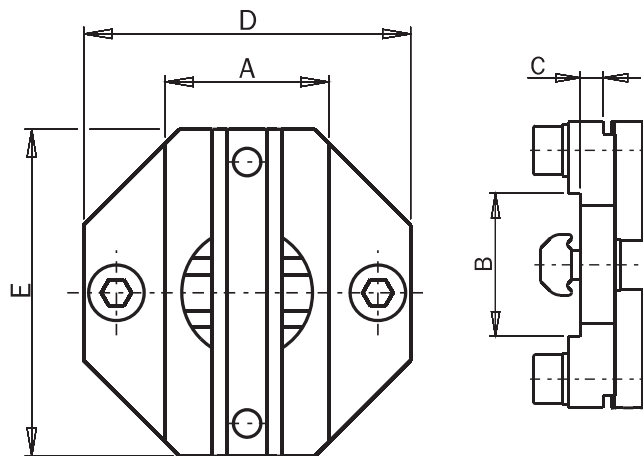
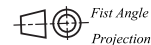
*Application Example*



Cross mounting bracket for profile

**FCMB** - series

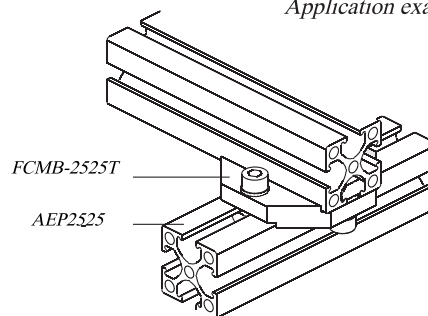
*Dimensions (mm)*



<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>Weight</i>
FCMB-1818T	18	18	2	38	38	40
FCMB-1825T	18	25	4	38	45	60
FCMB-2020T	20	20	4	50	50	30
FCMB-2525T	25	25	4	50	50	75
FCMB-2540T	25	40	4	45	60	75
FCMB-2550T	25	50	4	70	70	155
FCMB-2580T	25	80	4	45	100	140
FCMB-4040T	40	40	4	60	60	85
FCMB-4080T	40	80	4	60	100	175
FCMB-5050T	50	50	4	70	70	170
FCMB-8080T	80	80	4	100	100	255
FCMB-3030T	30	30	4	50	50	74



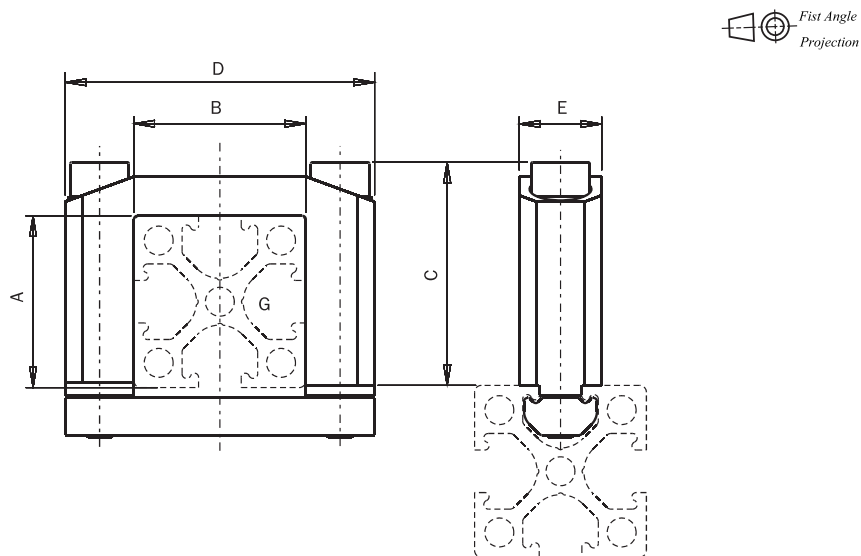
*Application example*



Cross (square) joint connector

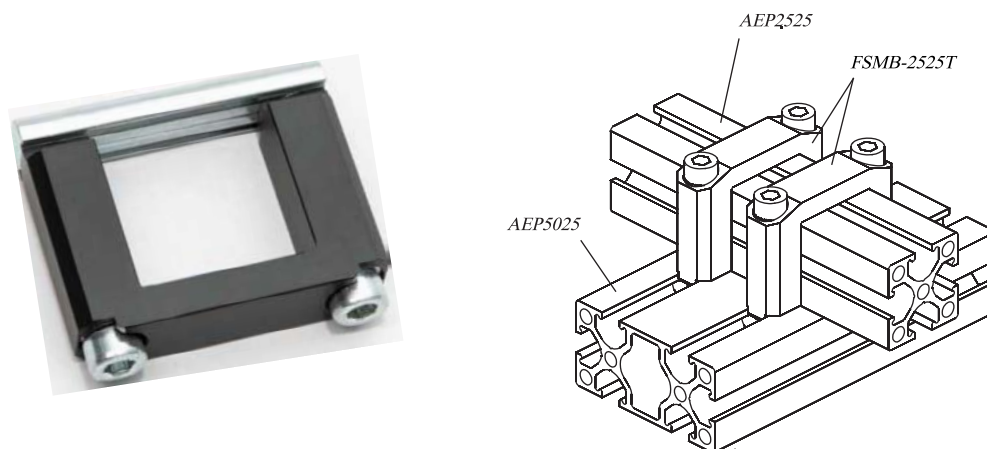
*FSMB* - series

*Dimensions (mm)*



Model	A	B	C	D	E	Weight
FSMB-1818T	18	18	29	38	12	40g
FSMB-1825T	18	25	29	45	12	45g
FSMB-2525T	25	25	32	45	12	45g
FSMB-5025T	50	25	57	45	12	65g
FSMB-2550T	25	50	32	70	12	65g

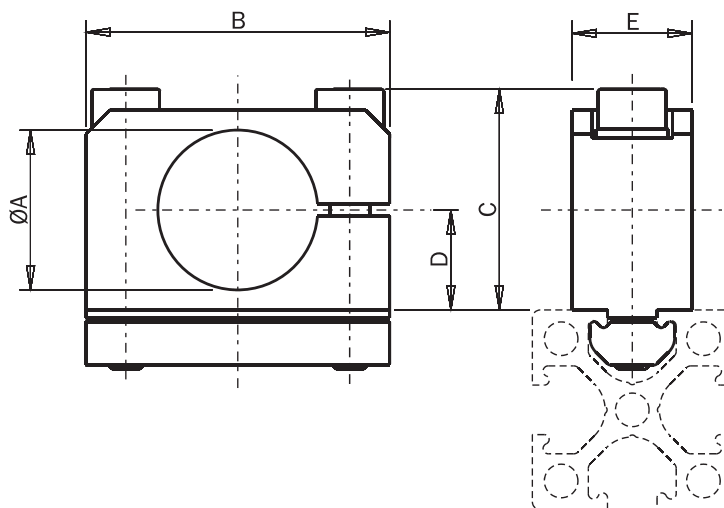
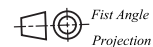
*Application example*



Cross (round) joint connector

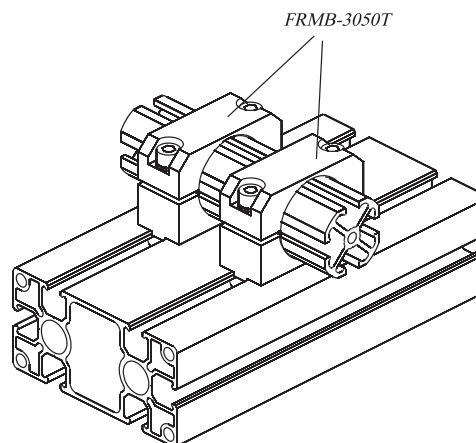
*FRMB* - series

*Dimensions (mm)*



<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>Weight</i>
FRMB-1025T	10	25	18.5	7	10	15g
FRMB-1432T	14	32	23	9	12	32g
FRMB-2038T	20	38	28	12.5	15	45g
FRMB-3050T	30	50	34	17	20	75g
FRMB-5070T	50	70	56	28	25	150g

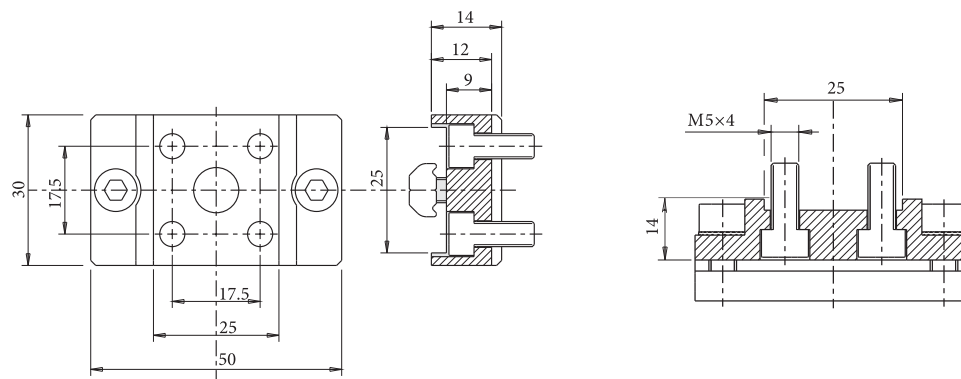
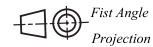
*Application example*



*Cross joint connector*

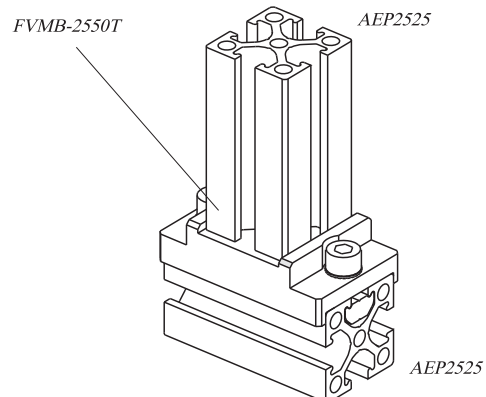
*FVMB-2550T*

*Dimensions (mm)*



Model	Weight
FVMB-2550T	65g

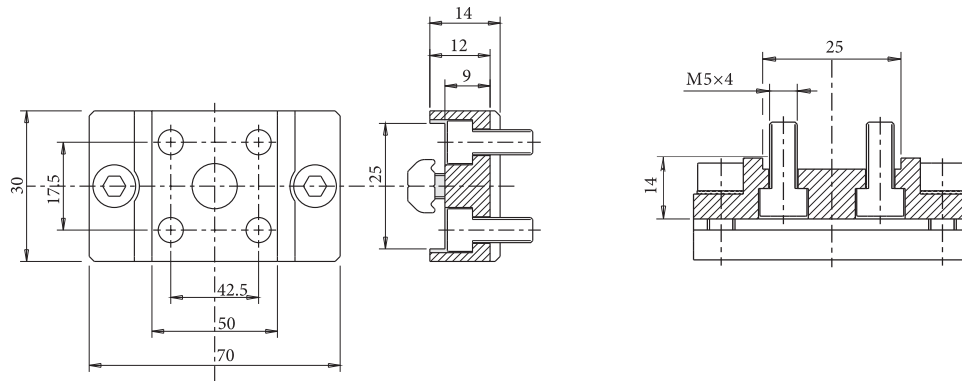
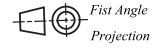
*Application example*



Cross joint connector

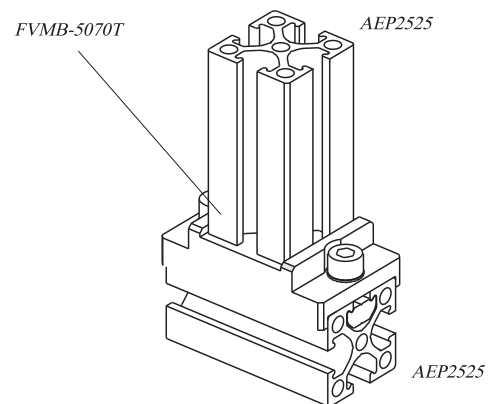
FVMB-5070T

Dimensions (mm)



Model	Weight
VMB-5070T	85g

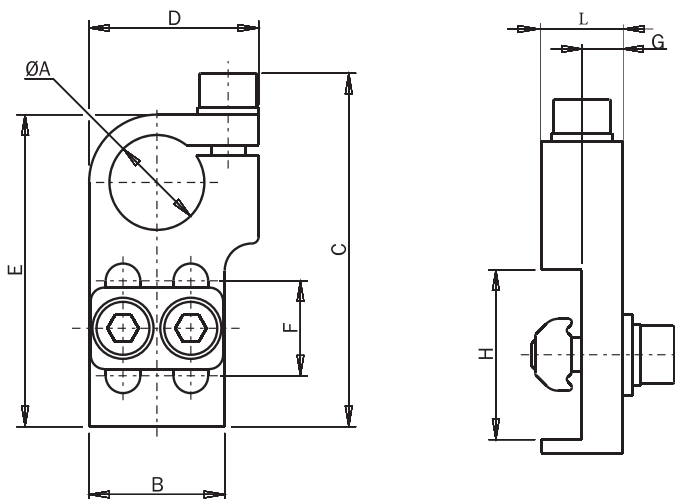
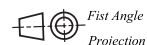
Application example



Mounting bracket

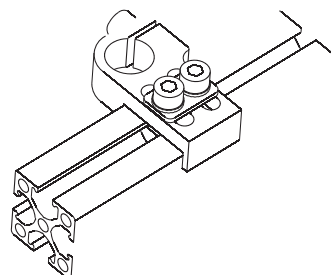
FMBE - series

Dimensions (mm)



Model	A	B	C	D	E	F	G	H	L	Weight
MBE-1010T	10	16	43	20	38	10	4.5	18	8	20g
MBE-1014T	10	16	49	20	44	14	4.5	25	8	21g
MBE-1210T	12	16	43	20.5	38	10	4.5	18	8	22g
MBE-1214T	12	16	50	20.5	45	14	4.5	25	8	10g
MBE-1414T	14	20	52.1	25	46	14	6	25	12	34g
MBE-2014T	20	25	57.1	30	51.5	14	6.2	25	12	45g
MBE-2022T	20	25	74.1	30	68	22	6	40	12	48g

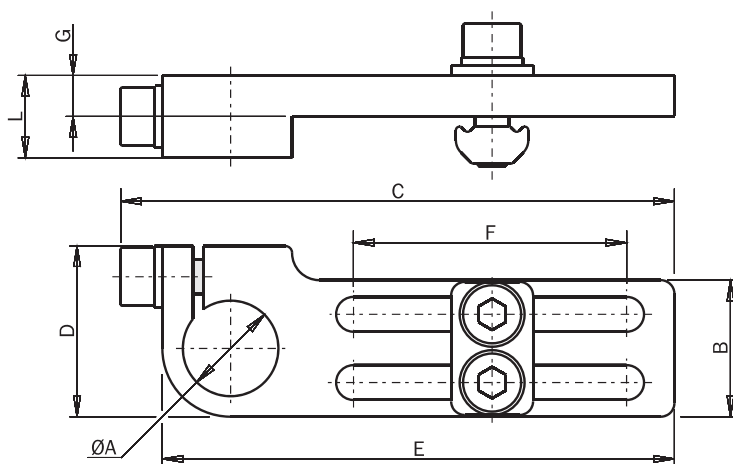
Application example



Mounting bracket

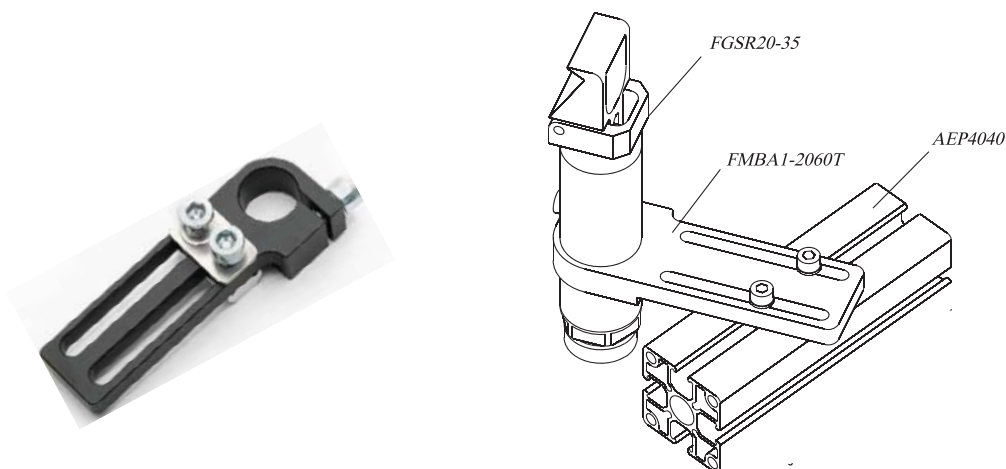
FMBA1 - series

Dimensions (mm)



Model	A	B	C	D	E	F	G	L	Weight
FMBA1-0840T	8	16	75	20	70	40	4.5	8	13g
FMBA1-1040T	10	16	75	20	70	40	4.5	8	23g
FMBA1-1240T	12	16	75	20	70	40	4.5	8	20g
FMBA1-1440T	14	20	81.1	25	75	40	4.5	12	38g
FMBA1-1450T	14	20	91.1	25	85	50	6	12	40g
FMBA1-2060T	20	25	111.1	30	105	60	6.2	12	55g
FMBA1-3060T	30	35	121.1	40	115	60	6	12	95g

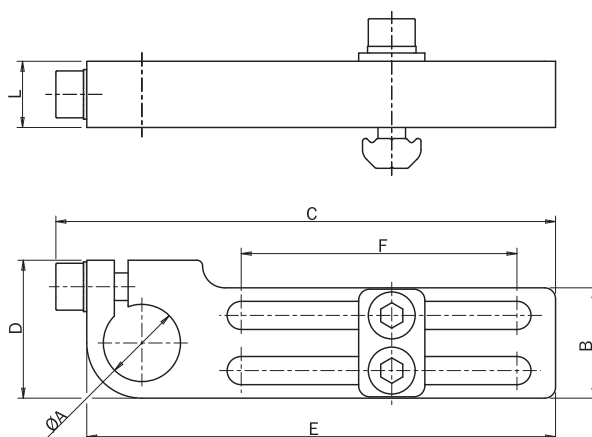
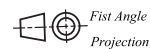
Application example



Heavy duty mounting bracket

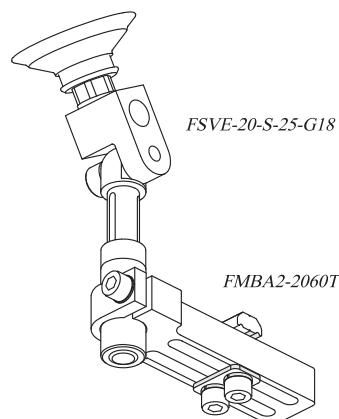
FMBA2 - series

Dimensions (mm)



Model	A	B	C	D	E	F	L	Weight
FMBA2-1040T	10	16	75	20	70	40	8.3	30g
FMBA2-1240T	12	16	75	20	70	40	8.3	40g
FMBA2-1450T	14	20	91.1	25	85	50	12	60g
FMBA2-2060T	20	25	111.1	30	105	60	15	85g
FMBA2-3060T	30	35	121.1	40	115	60	20	175g

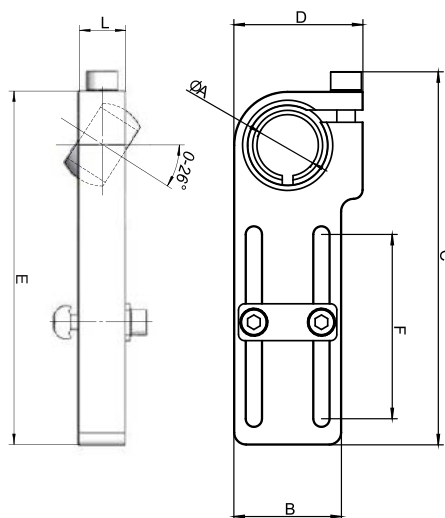
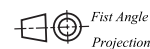
Application example



Heavy duty mounting bracket with adjustable angle ring

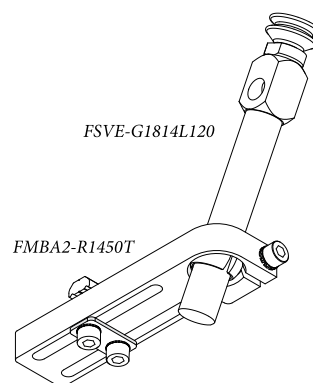
*FMBA2-R - series*

*Dimensions (mm)*



<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>L</i>	<i>Weight</i>
FMBA2-R1040T	10	20	85	25	85	50	8.3	30g
FMBA2-R1450T	14	25	111.5	31	105	60	12	60g
FMBA2-R2060T	20	35	121.8	42	115	60	15	85g

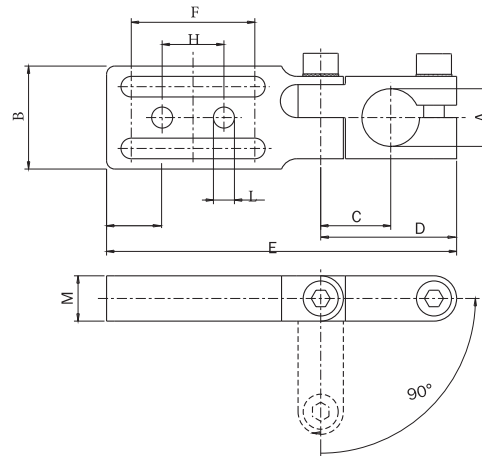
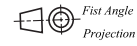
*Application example*



Slotted angular bracket

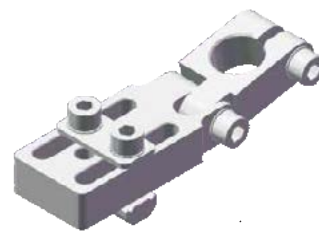
FMBA3 - series

Dimensions (mm)

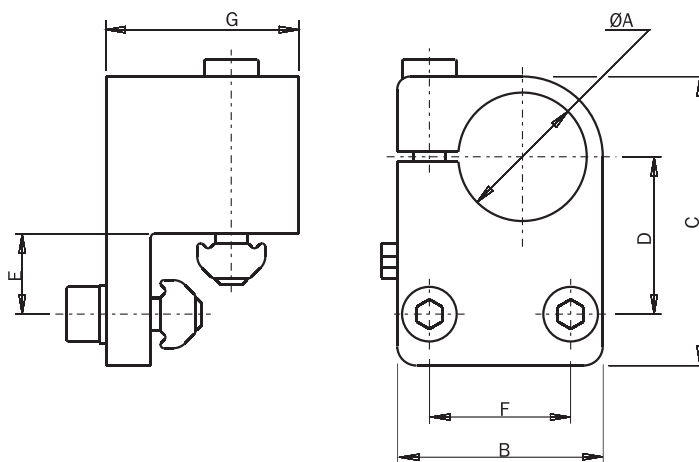
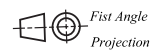


Model	A	B	C	D	E	F	G	H	L	M	Weight
MBA3-1020T	10	16	14	26.5	70	20				9	30g
MBA3-1220T	12	16	14	26.5	70	20				9	35g
MBA3-1430T	14	25	17	33	85	30	13.5	15	5.1	11	50g
MBA3-2040T	20	25	22	42	105	40	18.5	15	5.1	13	90g
MBA3-3050T	30	36	28	54.5	115	50	21	22	5.1	16	185g

Application example

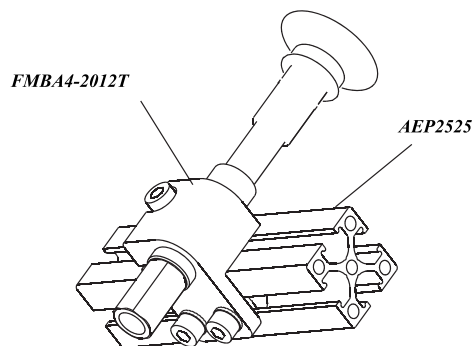


*Dimensions (mm)*

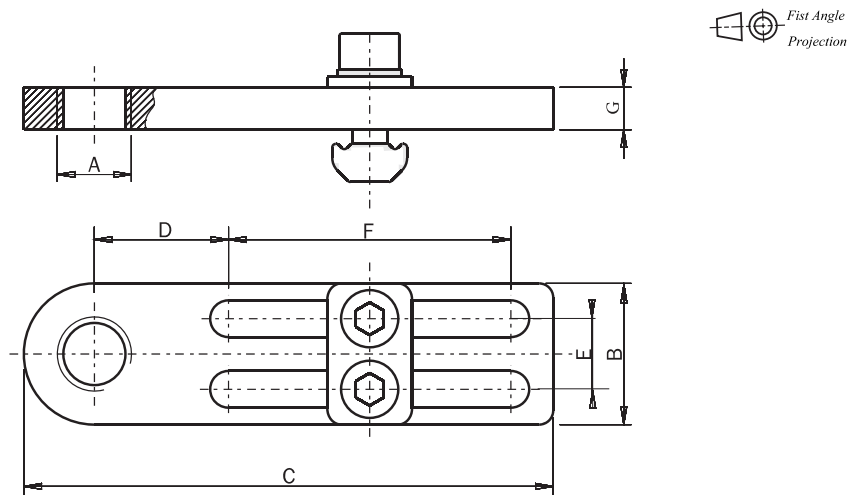


<i>Model</i>	A	B	C	D	E	F	G	Weight
FMBA4-1412T	14	25	40	22	12.5	15	25	50g
FMBA4-2012T	20	32	45	24.5	12.5	22	30	70g
FMBA4-2020T	20	35	54.5	33	20	25	35	95g
FMBA4-3012T	30	40	55	29.5	12.5	30	30	90g
FMBA4-3020T	30	45	65.5	39	20	35	40	150g

*Application example*

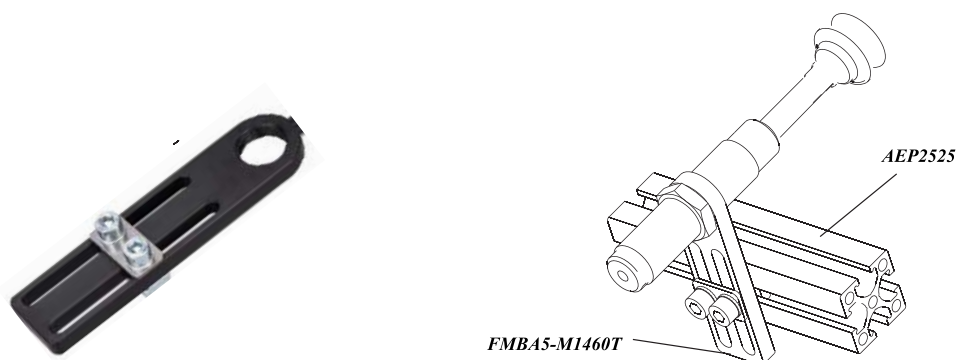


Dimensions (mm)



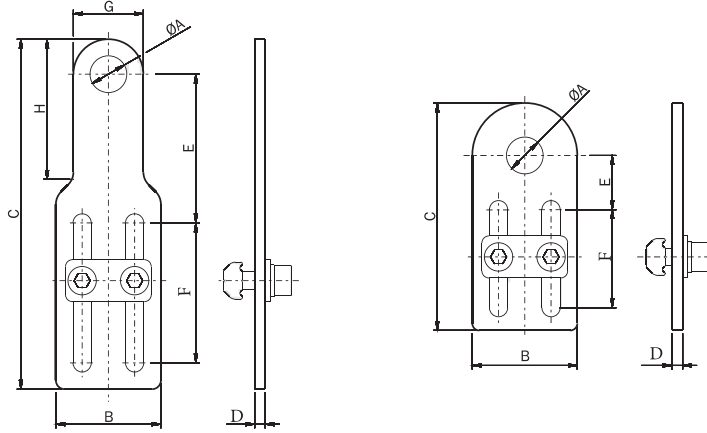
Model	A	B	C	D	E	F	G	Weight
FMBA5-G1840T	G18	20	75	19	10	40	6	25g
FMBA5-G1860T	G18	25	105	26.5	15	60	6	42g
FMBA5-M1040T	M10*1	20	75	19	10	40	6	30g
FMBA5-M1060T	M10*1	25	105	26.5	15	60	6	40g
FMBA5-M1240T	M12*1	20	75	19	10	40	6	30g
FMBA5-M1260T	M12*1	25	105	26.5	15	60	6	47g
FMBA5-M1440T	M14*1	20	75	19	10	40	6	20g
FMBA5-M1460T	M14*1	25	105	26.5	15	60	6	40g
FMBA5-M1640T	M16*1	20	75	19	10	40	6	20g
FMBA5-M1660T	M16*1	25	105	26.5	15	60	6	40g
FMBA5-M2040T	M20*1	25	75	16.5	15	40	6	30g
FMBA5-M2060T	M20*1	25	105	26.5	15	60	6	35g

Application example



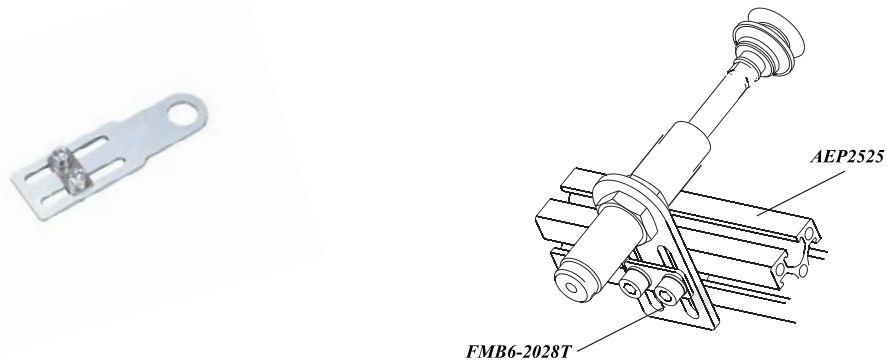
Dimensions (mm)

First Angle Projection



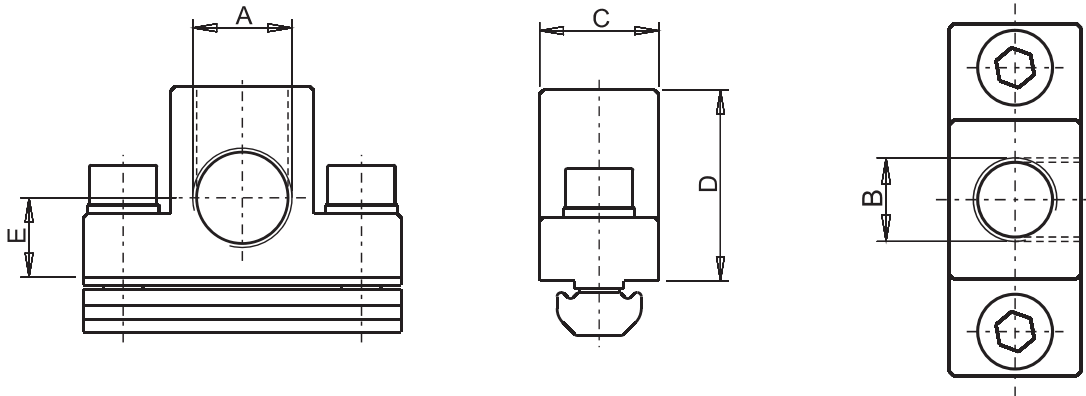
Model	A	B	C	D	E	F	G	H	Weight
FMBA6-1040T	10.5	30	100	3	42.5	40	6	38	60g
FMBA6-1240T	12.5	30	100	3	42.5	40	6	38	60g
FMBA6-1440T	14.5	30	100		42.5	40	6	38	60g
FMBA6-1640T	16.5	30	100	3	42.5	40	6		60g
FMBA6-2040T	20.5	30	100	3	42.5	40	6		60g
FMBA6-2240T	22.5	30	100	5	42.5	40	6	26	105g
FMBA6-2540T	25.5	30	100	5	42.5	40	6	26	100g
FMBA6-1028T	10.5	30	65	3	15.5	28	6		45g
FMBA6-1228T	12.5	30	65	3	15.5	28	6		45g
FMBA6-1428T	14.5	30	65	3	15.5	28	6		45g
FMBA6-1628T	16.5	30	65	3	15.5	28	6		45g
FMBA6-2028T	20.5	30	65	3	15.5	28	6		45g
FMBA6-2228T	22.5	30	70	5	17	28	6	26	75g
FMBA6-2528T	25.5	30	70	5	17	28	6	26	75g

Application example



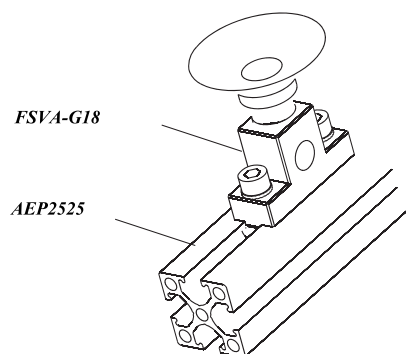
Dimensions (mm)

First Angle Projection



Model	A	B	C	D	E	Weight
FSVA-G18	G18	G18	15	24	12	42g
FSVA-G14	G14	G14	15	24	10	40g

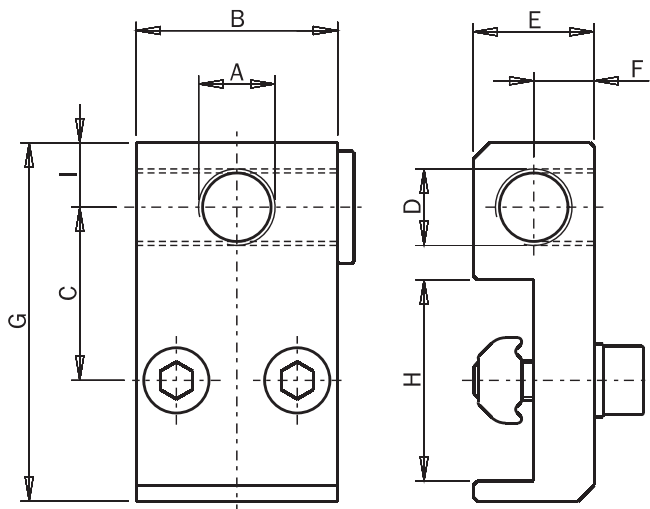
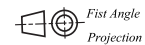
Application example



Mounting bracket for vacuum cup

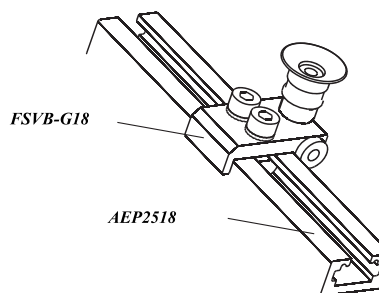
FSVB - series

Dimensions (mm)



Model	A	B	C	D	E	F	G	H	I	Weight
FSVB-M5	M5	16	13.5	M5	8	4	29	18	4.3	15g
FSVB-G18	G18	25	21.5	G18	15	7.5	44.5	25	8	45g
FSVB-G14	G14	25	21.5	G14	15	7.5	46.5	25	10	45g

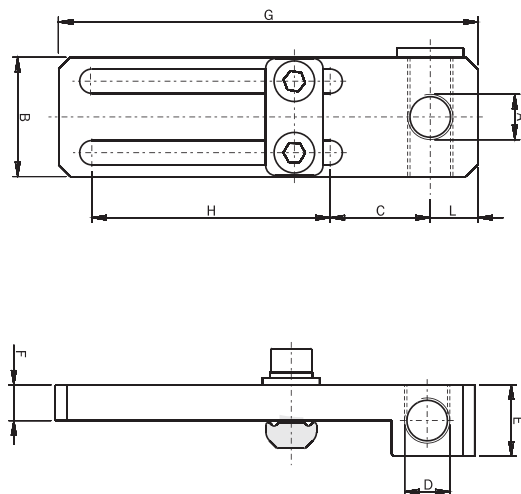
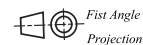
Application example



Long mounting bracket for vacuum cup

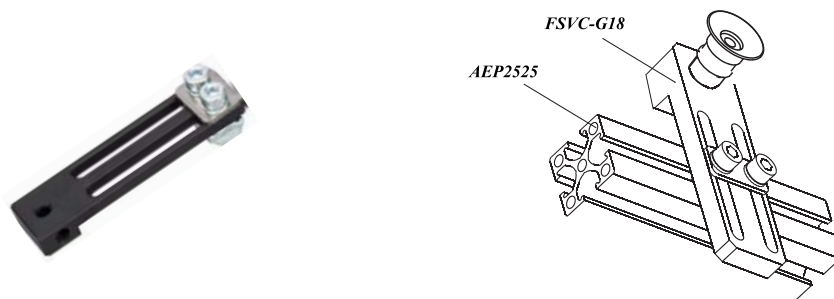
FSVC - series

Dimensions (mm)

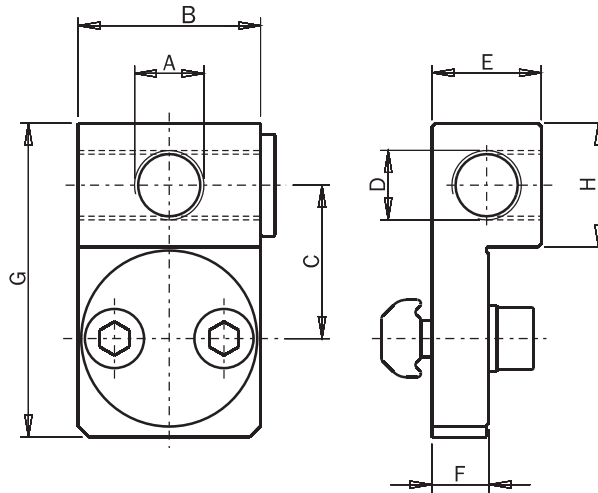
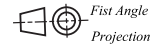


Model	A	B	C	D	E	F	G	H	I	Weight
FSVC-M5	M5	16	14	M5	8	4	65	40	6	20g
FSVC-G18	G18	25	21	G18	15	7.5	88	50	10	60g
FSVC-G14	G14	25	21	G14	15	7.5	88	50	10	60g

Application example

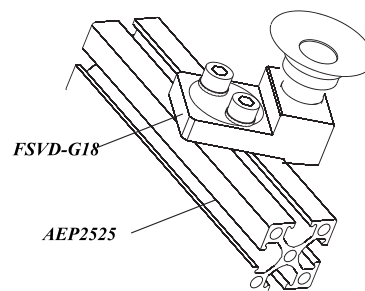
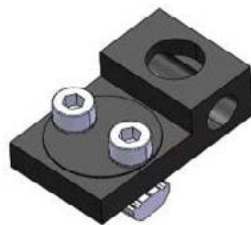


Dimensions (mm)



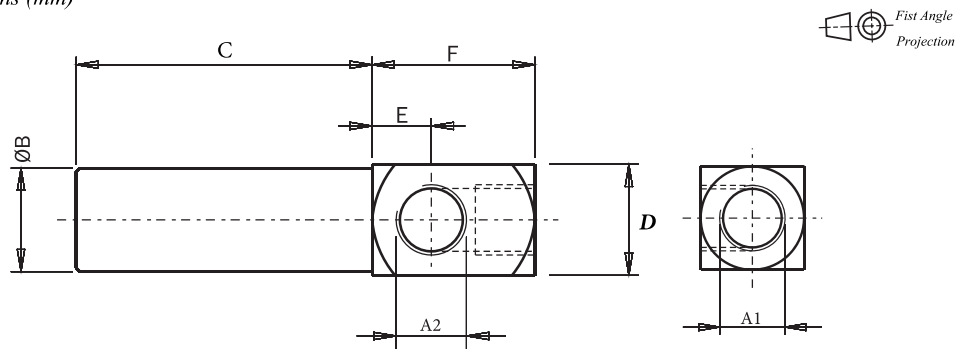
Model	A	B	C	D	E	F	G	H	Weight
FSVD-M5	M5	16	13	M5	10	5.3	28	10	15g
FSVD-G18	G18	25	21	G18	15	7.8	43	17	45g
FSVD-G14	G14	25	21	G14	15	7.8	43	17	42g

Application example



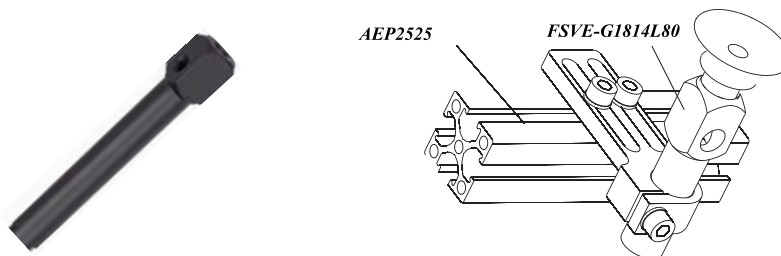
END-51103

Dimensions (mm)



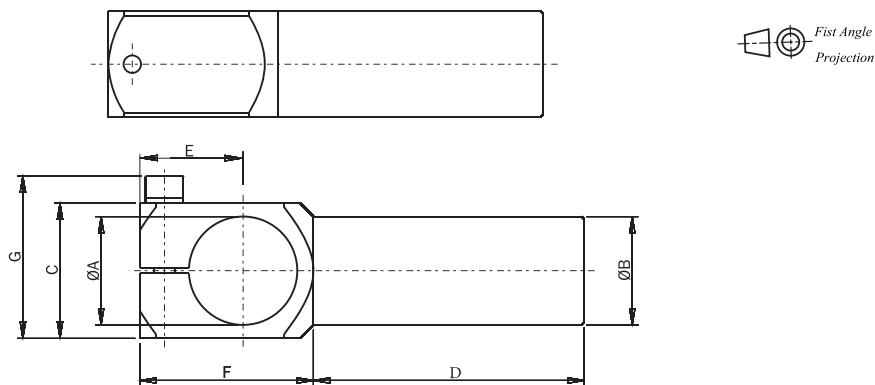
Model	A1	A2	B	C	D	E	F	Weight
FSVE-M510L30	M5	M5	10	30	11	6	16	10g
FSVE-M510L60	M5	M5	10	60	11	6	16	13g
FSVE-M510L90	M5	M5	10	90	11	6	16	17g
FSVE-M512L30	M5	M5	12	30	13	7	17	12g
FSVE-M512L60	M5	M5	12	60	13	7	17	15g
FSVE-M512L90	M5	M5	12	90	13	7	17	19g
FSVE-G1814L40	G1/8	G1/8	14	40	15	8	22	17g
FSVE-G1814L80	G1/8	G1/8	14	80	15	8	22	25g
FSVE-G1814L120	G1/8	G1/8	14	120	15	8	22	32g
FSVE-G1420L50	G1/4	G1/4	20	50	20	8	23	40g
FSVE-G1420L100	G1/4	G1/4	20	100	20	8	23	60g
FSVE-G1420L150	G1/4	G1/4	20	150	20	8	23	75g

Application example



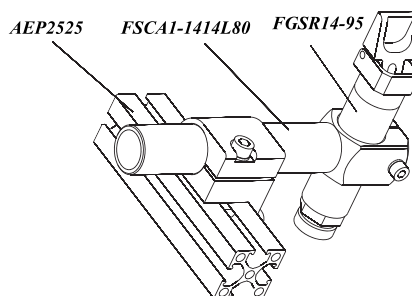
*FSCA1 - series*

*Dimensions (mm)*

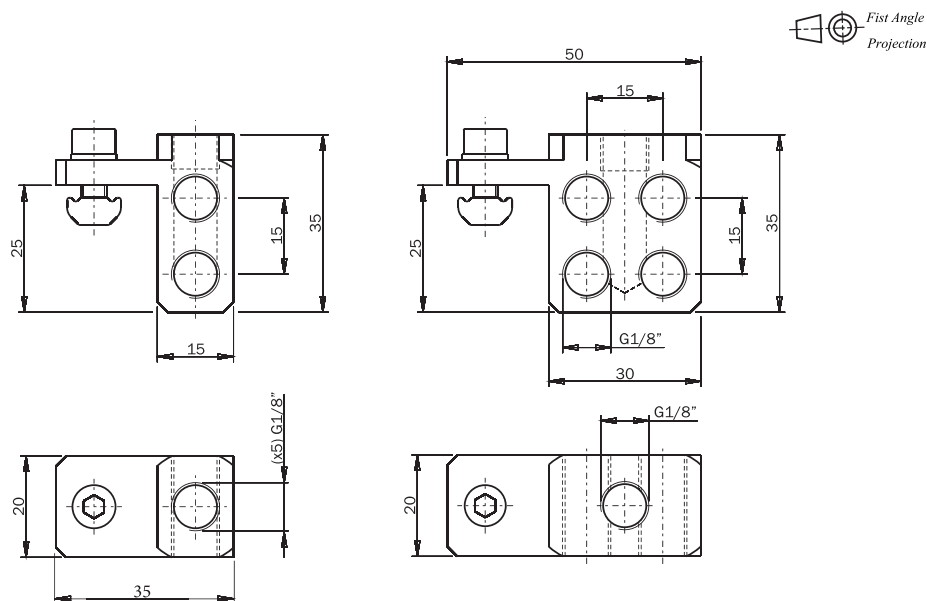


<i>Model</i>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>Weight</b>
FSCA1-1010L30	10	10	14	30	12	19	19	10g
FSCA1-1010L60	10	10	14	60	12	19	19	15g
FSCA1-1010L90	10	10	14	90	12	19	19	20g
FSCA1-1212L30	12	12	19	30	14	21	21	13g
FSCA1-1212L60	12	12	19	60	14	21	21	18g
FSCA1-1212L90	12	12	19	90	14	21	21	23g
FSCA1-1414L40	14	14	18	40	16	26	24	20g
FSCA1-1414L80	14	14	18	80	16	26	24	30g
FSCA1-1414L120	14	14	18	120	16	26	24	40g
FSCA1-2020L50	20	20	25	50	19	32	32	45g
FSCA1-2020L100	20	20	25	100	19	32	32	70g
FSCA1-2020L150	20	20	25	150	19	32	32	105g
FSCA1-3030L80	30	30	40	80	25	44	46	170g
FSCA1-3030L140	30	30	40	140	25	44	46	230g
FSCA1-3030L200	30	30	40	200	25	44	46	300g

*Application example*

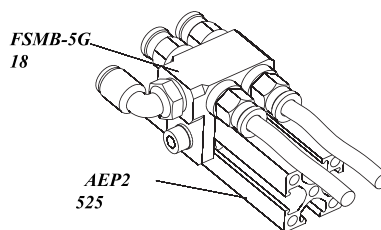


Dimensions (mm)

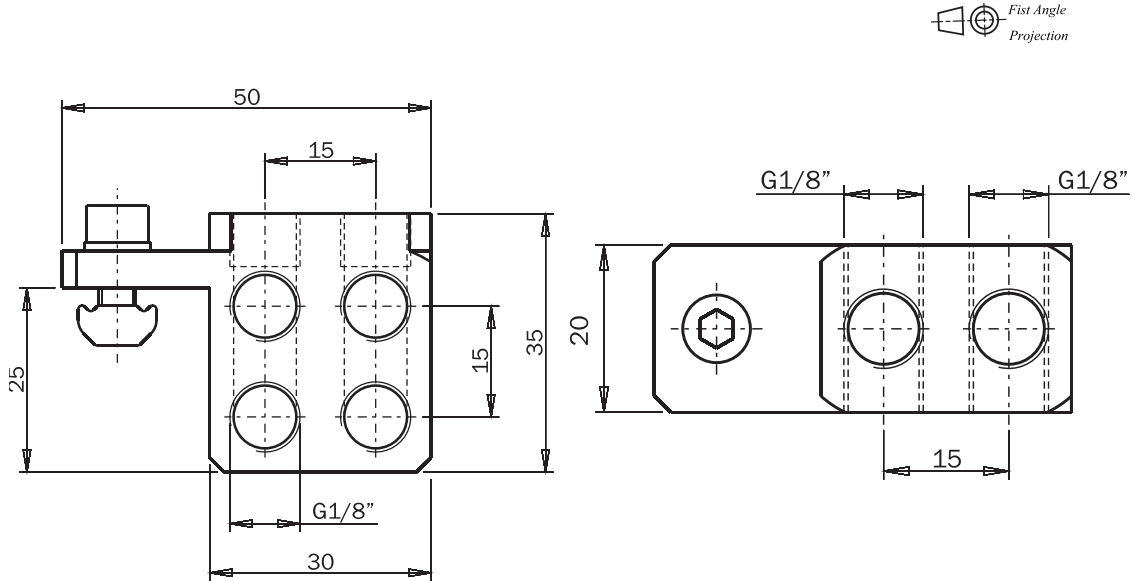


Model	Weight
FSMB-5G18	30g
FSMB-9G18	50g

Application example

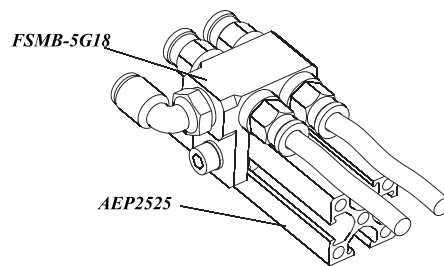


Dimensions (mm)



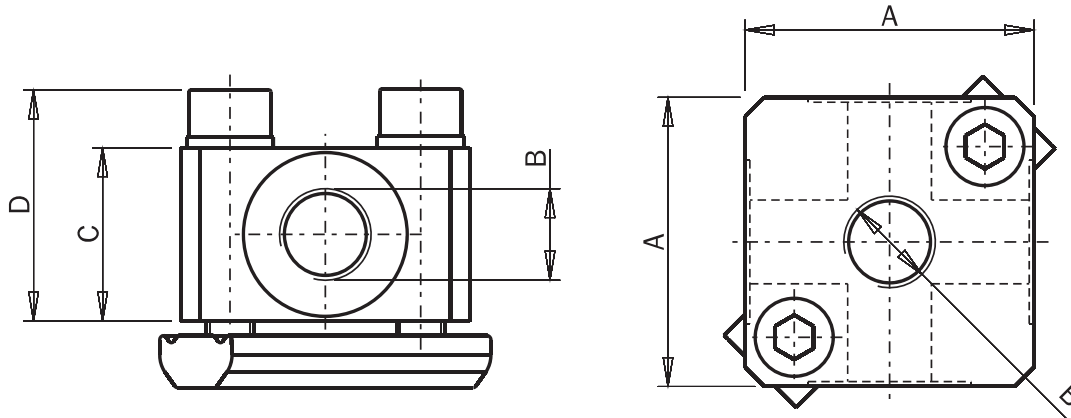
Model	Weight
FSMB-D5G18	48g

Application example



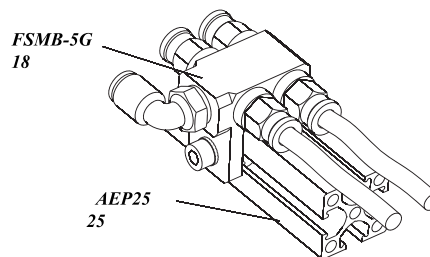
*Dimensions (mm)*

First Angle Projection

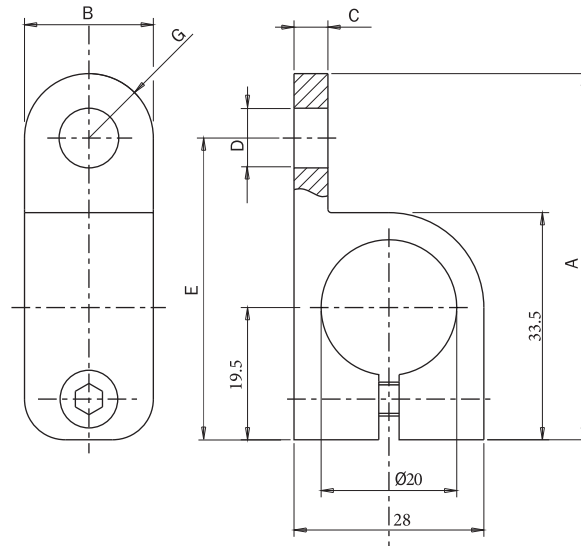
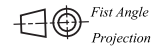


<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>Weight</i>
FSMB-A5G18T	30	5*G1/8	18	24	50g
FSMB-A5G14T	40	5*G1/4	20	23	180g

*Application example*

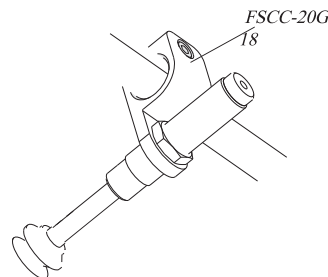


*Dimensions (mm)*

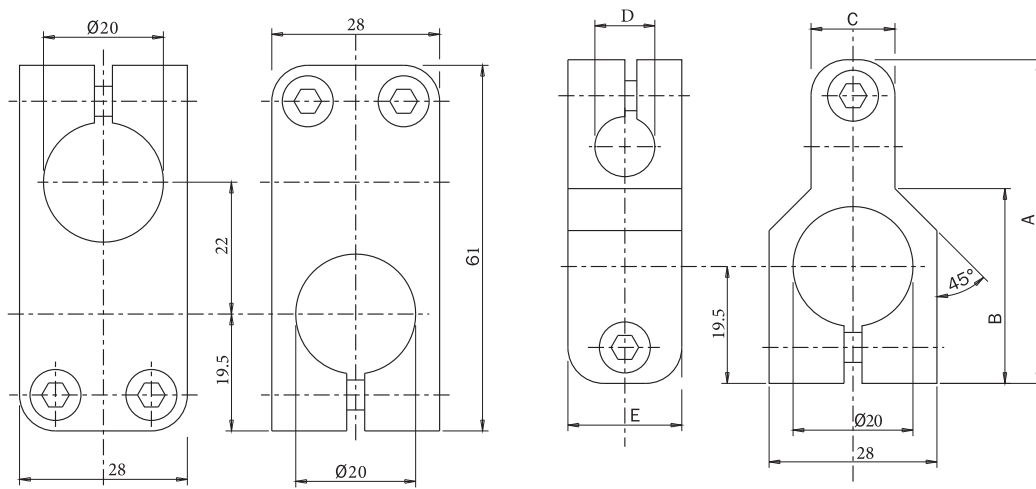
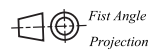


<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>G</i>	<i>Weight</i>
FSCC-20G18	53.5	19	5	G1/8	44	R9.5	30g
FSCC-20M16	60.5	24	6	M16*1	48.5	R12	40g

*Application example*



Dimensions (mm)



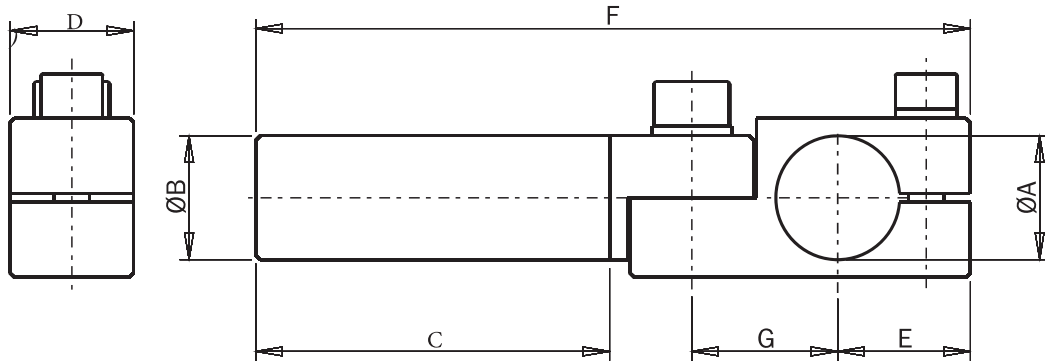
Model	A	B	C	D	E	Weight
FSCD-2010T	54	32.5	14	10	19	40g
FSCD-2014T	56	30.5	18	14	22	45g
FSCD-2020T						70g

Application example



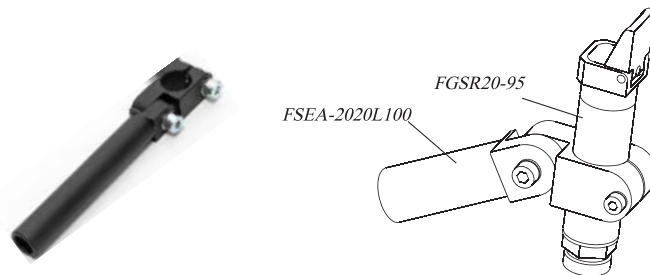
Dimensions (mm)

First Angle Projection

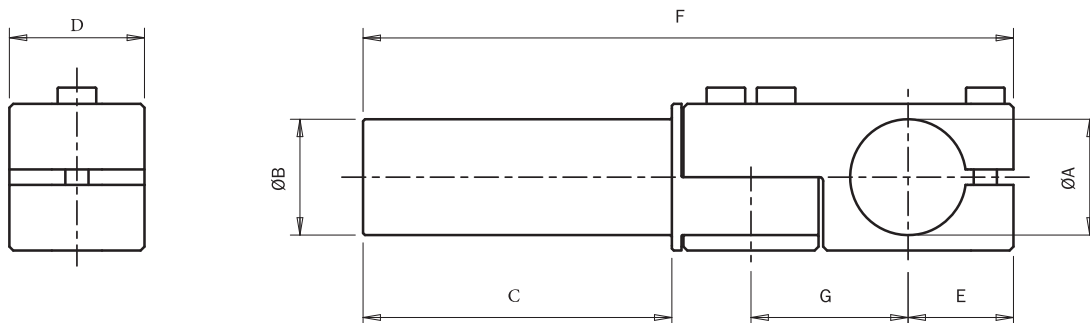
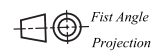


Model	A	B	C	D	E	F	G	Weight
FSEA-1010L60	10	10	60	10	13	93	12.5	20g
FSEA-1212L60	12	12	60	12	15	98	14.5	22g
FSEA-1414L40	14	14	40	14	16	82	16.5	32g
FSEA-1414L80	14	14	80	14	16	122	16.5	42g
FSEA-1414L120	14	14	120	14	16	162	16.5	50g
FSEA-2020L50	20	20	50	20	19	104	22.5	70g
FSEA-2020L100	20	20	100	20	19	154	22.5	90g
FSEA-2020L150	20	20	150	20	19	204	22.5	120g
FSEA-3030L80	30	30	80	30	27	160	34.8	235g
FSEA-3030L140	30	30	140	30	27	220	34.8	300g
FSEA-3030L200	30	30	200	30	27	280	34.8	360g

Application example

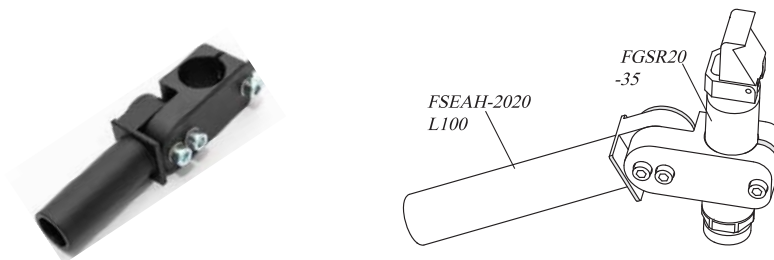


Dimensions (mm)

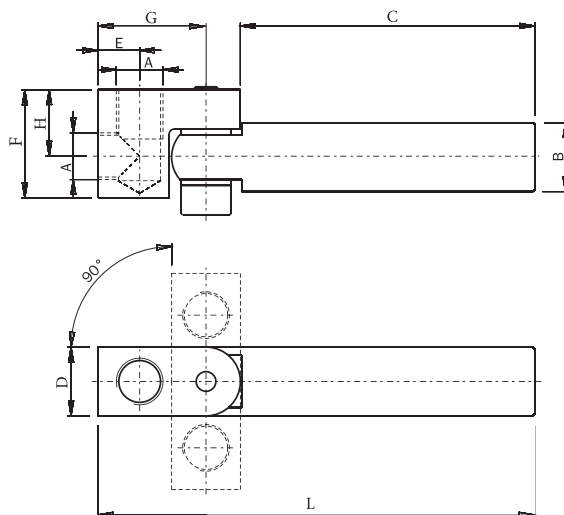


Model	A	B	C	D	E	F	G	Weight
FSEAH-2020L50	20	20	50	25	19.5	113.5	28.7	95g
FSEAH-2020L100	20	20	100	25	19.5	163.5	28.7	115g
FSEAH-2020L150	20	20	150	25	19.5	213.5	28.7	130g
FSEAH-3030L80	30	30	80	35	27.3	168.5	40.7	330g
FSEAH-3030L140	30	30	140	35	27.3	228.5	40.7	380g
FSEAH-3030L200	30	30	200	35	27.3	288.5	40.7	435g

Application example



Dimensions (mm)



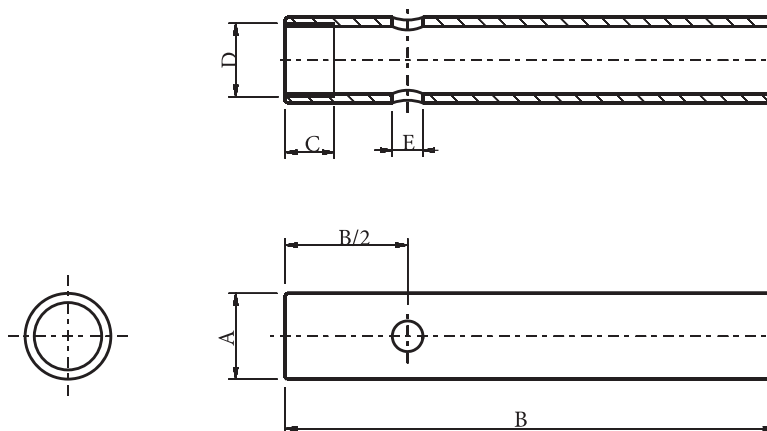
Model	A	B	C	D	E	F	G	H	L	Weight
FSEAV-M510L45	M5	10	45	10	5.5	16.5	22	11	64	18g
FSEAV-M510L90	M5	10	90	10	5.5	16.5	22	11	109	27g
FSEAV-G1814L60	G18	14	60	14	8.5	22	22	13.5	89	33g
FSEAV-G1814L120	G18	14	120	14	8.5	22	22	13.5	149	50g
FSEAV-G1820L78	G18	20	78	14	8.5	22	22	13.5	107	60g
FSEAV-G1820L153	G18	20	153	14	8.5	22	22	13.5	182	100g
FSEAV-G1420L75	G14	20	75	20	12	27	28	15	113	75g
FSEAV-G1420L150	G14	20	150	20	12	27	28	15	188	115g

Application example



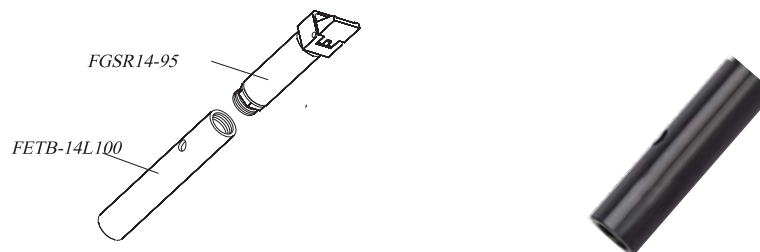
Dimensions (mm)

Fist Angle  
Projection

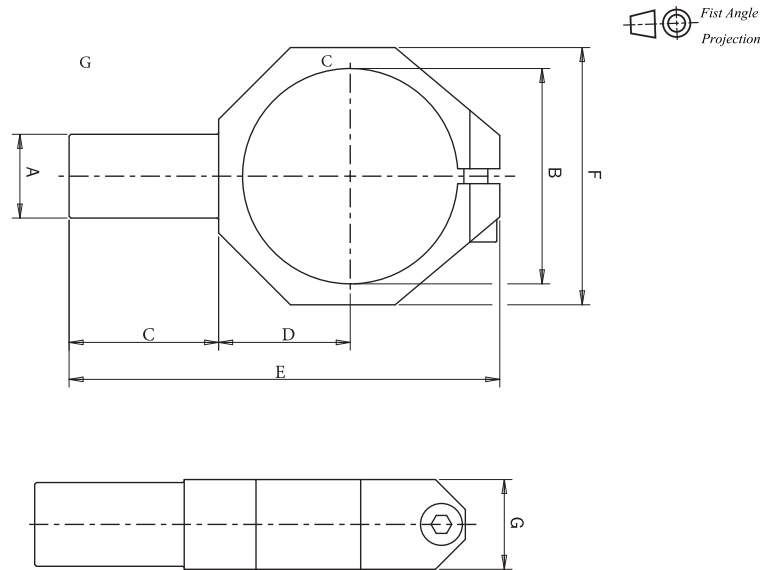


Model	A	B	C	D	E	Weight
FETB-12L50	12	50	12	M10*1	5	9g
FETB-12L100	12	100	12	M10*1	5	17g
FETB-14L50	14	50	12	M12*1	5	10g
FETB-14L100	14	100	12	M12*1	5	20g
FETB-20L50	20	50	15	M17*1	8	16g
FETB-20L100	20	100	15	M17*1	8	31g
FETB-20L150	20	150	15	M17*1	8	47g
FETB-30L50	30	50	18	M27*1	9	29g
FETB-30L100	30	100	18	M27*1	9	58g
FETB-30L150	30	150	18	M27*1	9	87g

Application example

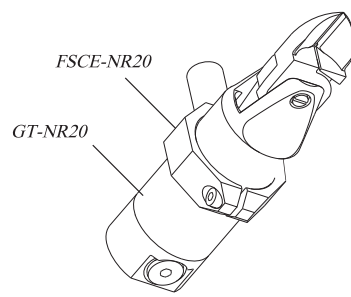


Dimensions (mm)



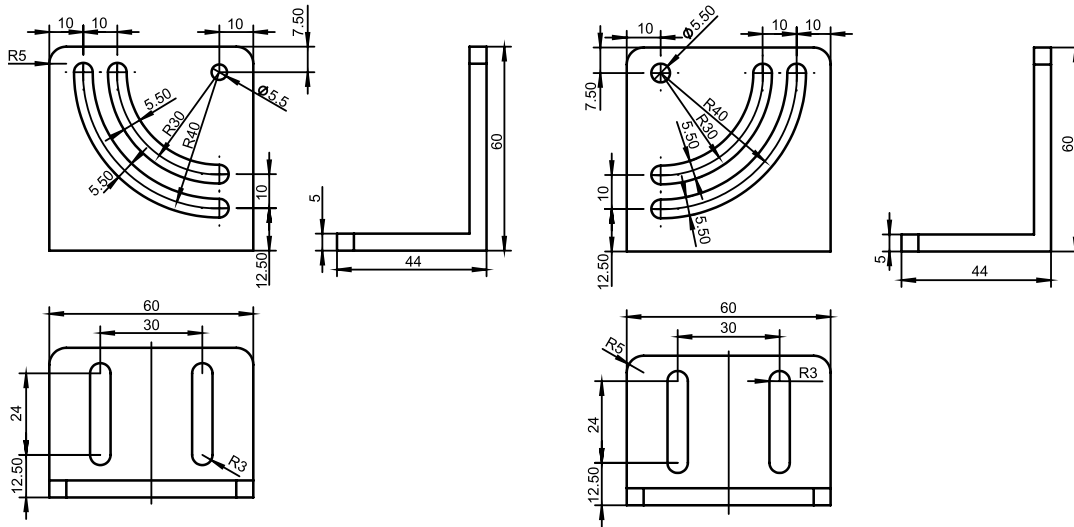
Model	A	B	C	D	E	F	G	Weight
FSCE1-NR20	20	45	35	28	94.5	53	20	65g
FSCE1-NR30	20	56	40	33	111	65	25	110g
FSCE1-NR50	30	75	48	41	138	83	40	308g

Application example



FSCE3-NR-L & R

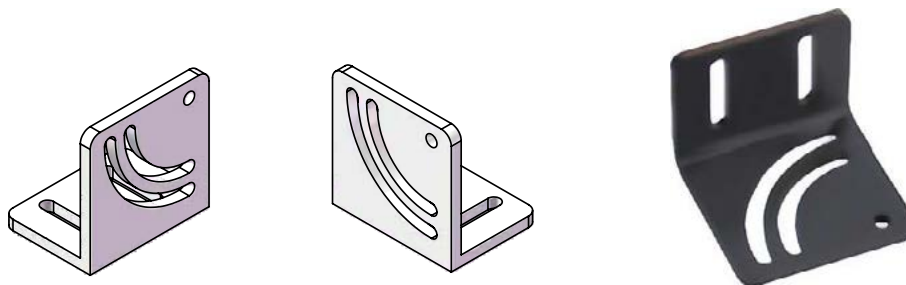
Dimensions (mm)



FSCE3-NR-L

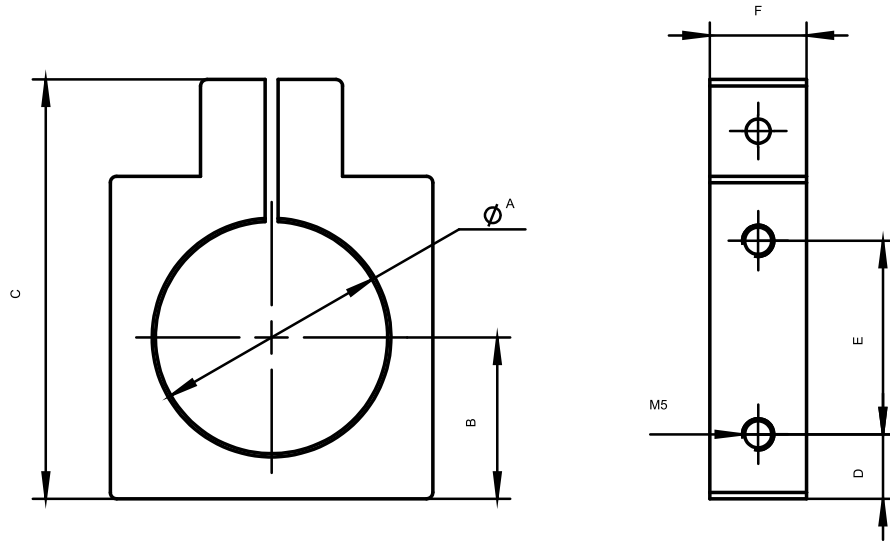
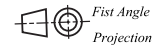
FSCE3-NR-R

Application example



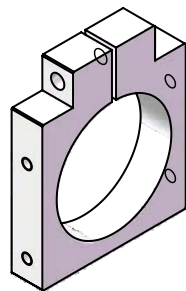
*FSCE3-NR - series*

*Dimensions (mm)*



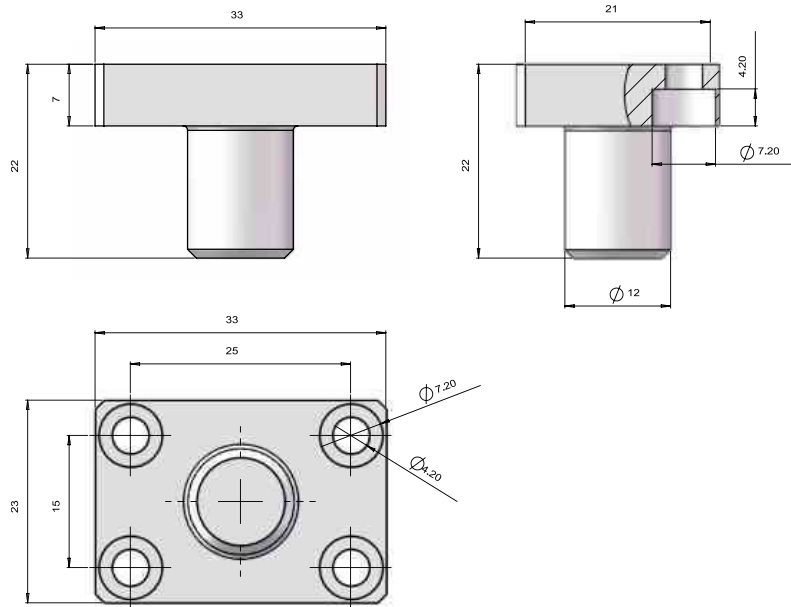
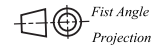
<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>Weight / g</i>
FSCE3-NR30	56	35	85	10	40	15	111
FSCE3-NR20	45	30	75	10	40	15	93
FSCE3-NR10	36	25	65	10	30	15	72

*Application example*



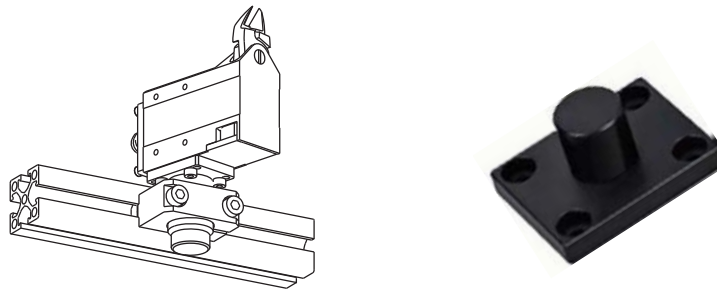
FSCE2-NY05

Dimensions (mm)



Mode	Weight
FSCE2-NY05	17g

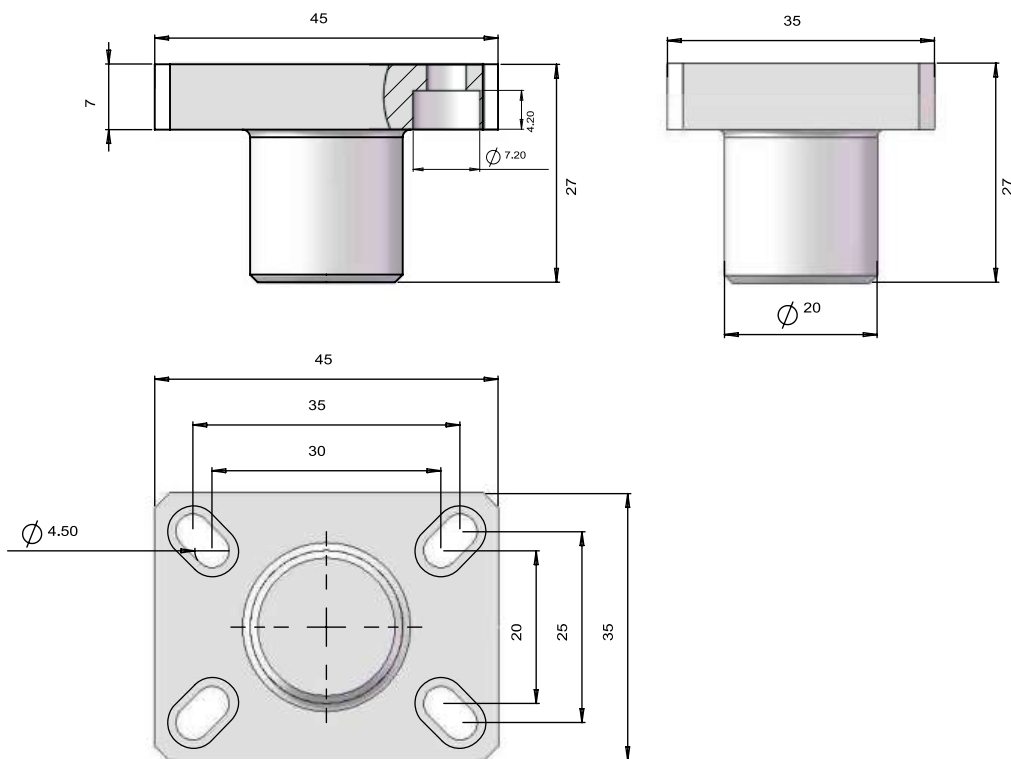
*Application example*



FSCE2-NY10-15

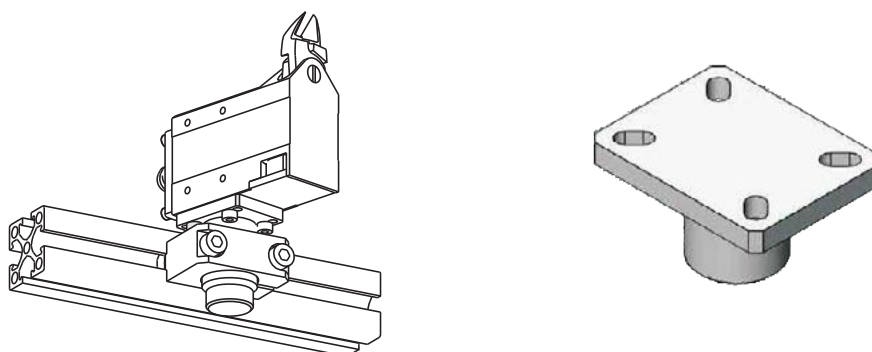
Dimensions (mm)

First Angle Projection



Mode	Weight
SCE2-NY10-15	17g

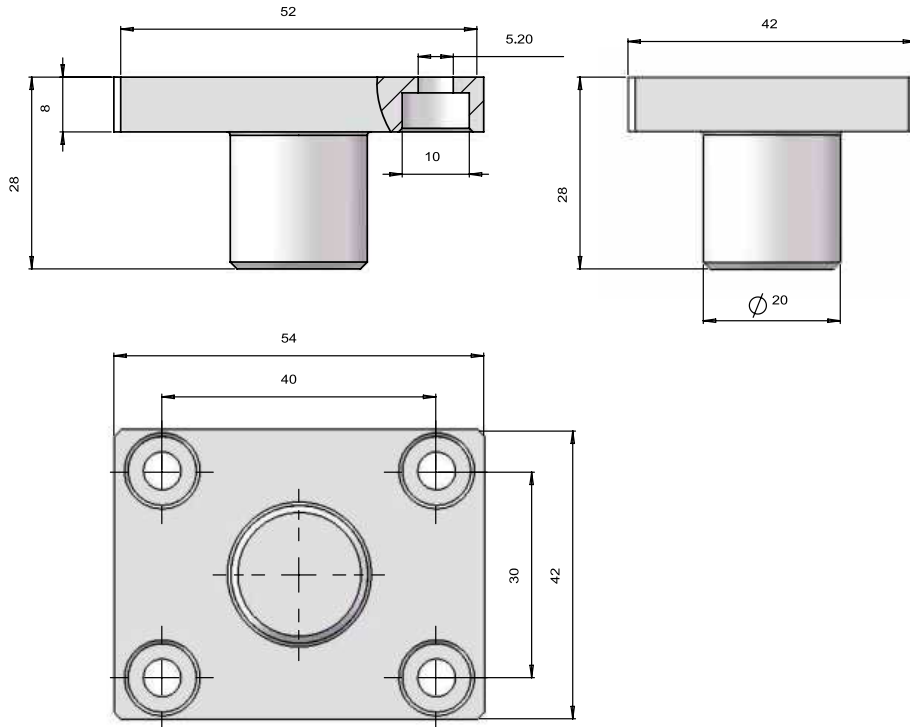
Application example



*FSCE2-NY25*

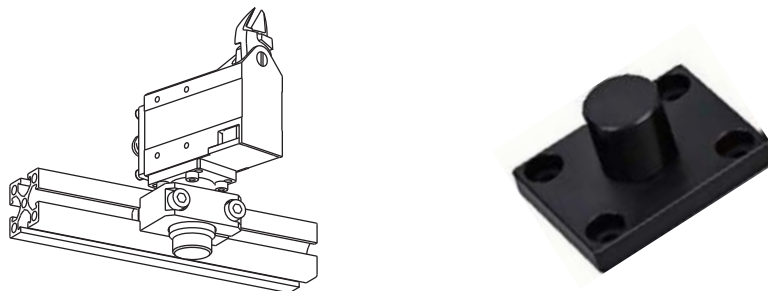
*Dimensions (mm)*

*First Angle Projection*



<i>Mode</i>	<i>Weight</i>
FSCE2-NY25	61g

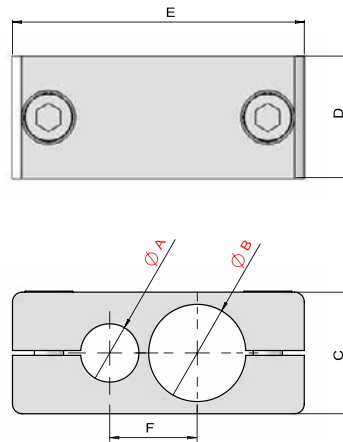
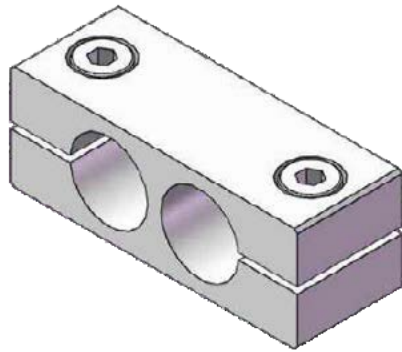
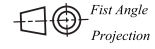
*Application example*



Tube Mounting Connector -- Factory OEM / ODM

*FTMC1 - series*

*Dimensions (mm)*

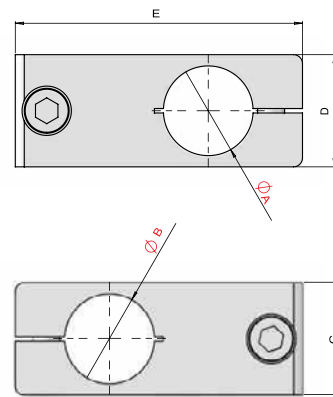
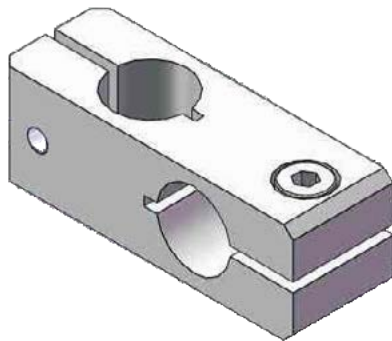


<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>Weight / g</i>
FTMC1-0808	8	8	12	12	35	10	11
FTMC1-0812	8	12	16	16	43	12	23
FTMC1-1212	12	12	16	16	44	14	21
FTMC1-2012	20	12	25	25	60	18	75
FTMC1-2020	20	20	25	25	66	24	71

Tube Cross Connector -- Factory OEM / ODM

*FTCC1 - series*

*Dimensions (mm)*



<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>Weight / g</i>
FTCC1-0808	8	8	12	12	35	10
FTCC1-1208	12	8	12	16	43	16
FTCC1-1212	12	12	16	16	47	22
FTCC1-1214	12	14	18	18	48	29
FTCC1-2012	20	12	25	25	59	72
FTCC1-2020	20	20	25	25	64	68

### FGS10 - series



FGS10B-6S



FGS10B-8M



FGS10C-8M



FGS10A-12



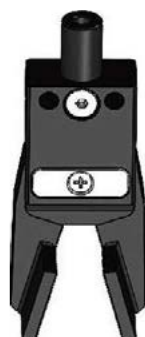
FGS10B-12



FGS10C-12



FGS10D-12



FGS10E-12



FGS10F-12



FGS10A-12-CP



FGS10B-12-CP



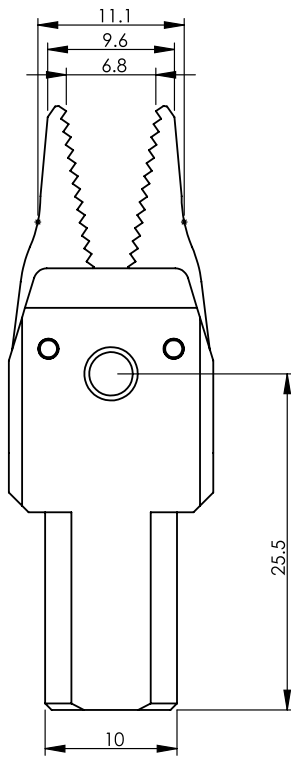
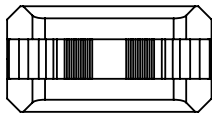
FGS10C-12-CP

Model	FGS10B-6S	FGS10B-8M	FGS10C-8M	FGS10A-12	FGS10A-12-CP / CN	FGS10B-12	FGS10B-12-CP / CN	FGS10C-12	FGS10C-12-CP / CN	FGS10D-12	FGS10E-12	FGS10F-12
Medium	Filtered & Compressed Air											
Pressure Range	2.5 ~ 8 bar											
Temperature Range	5 ~ 60 degree											
Stroke / degree	2°10	2°10	2°10	2°16	2°16	2°16	2°16	2°16	2°16	2°16	2°16	2°16
Max Working Frequency	3 Hz											
Cycle Air Consumption	0.3cm <sup>3</sup>	0.3cm <sup>3</sup>	0.3cm <sup>3</sup>	1.2cm <sup>3</sup>	1.2cm <sup>3</sup>	1.2cm <sup>3</sup>	1.2cm <sup>3</sup>	1.2cm <sup>3</sup>	1.2cm <sup>3</sup>	1.2cm <sup>3</sup>	1.2cm <sup>3</sup>	1.2cm <sup>3</sup>
Closing time without load	0.01s											
Closing gripping torque	10N/cm	24N/cm	24N/cm	80N/cm	80N/cm	80N/cm	80N/cm	80N/cm	80N/cm	80N/cm	80N/cm	80N/cm
Opening gripping torque	1N/cm	2N/cm	2N/cm	5N/cm	5N/cm	5N/cm	5N/cm	5N/cm	5N/cm	5N/cm	5N/cm	5N/cm
Air Inlet	M5											
Weight / g	7	15	15	52	58	50	58	46	55	75	55	46

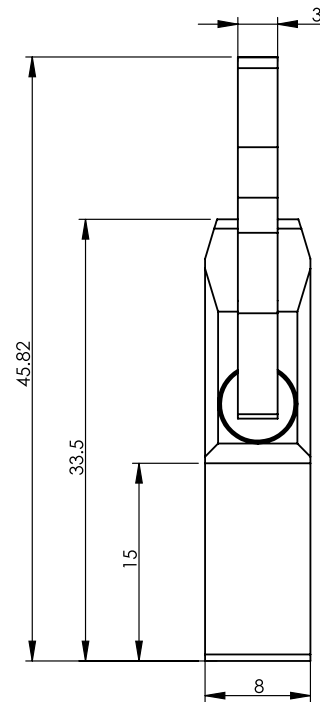
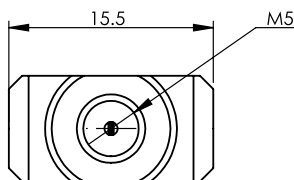
Aluminum jaws  
Single-action

Dimensions (mm)

First Angle Projection



Air connection M5



Air connection M5



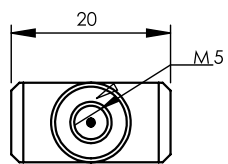
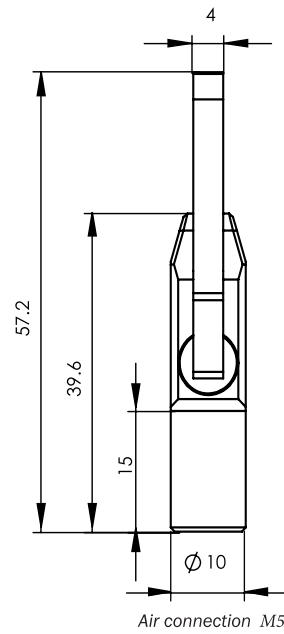
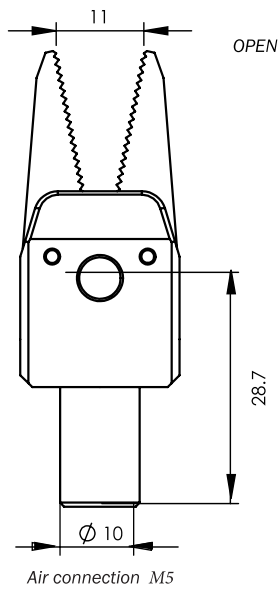
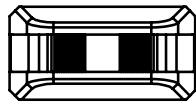
riston bore: 8mm.

Aluminum jaws

Single-action

Dimensions (mm)

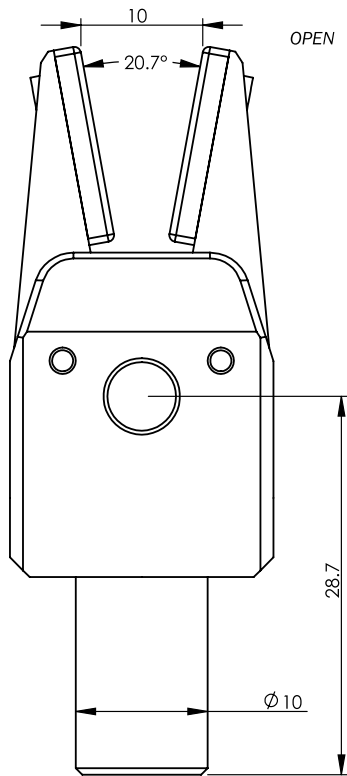
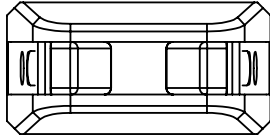
First Angle Projection



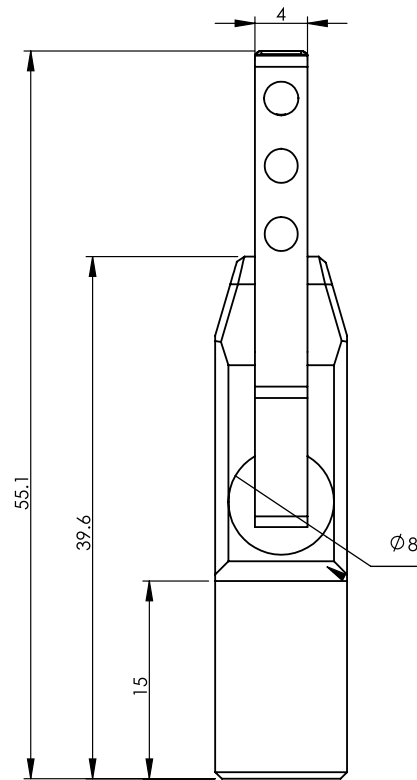
Aluminum jaws  
 Single-action  
 Silicon pads

Dimensions (mm)

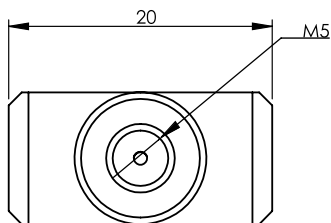
First Angle Projection



Air connection M5



Air connection M5



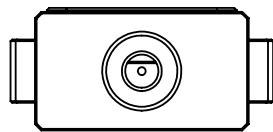
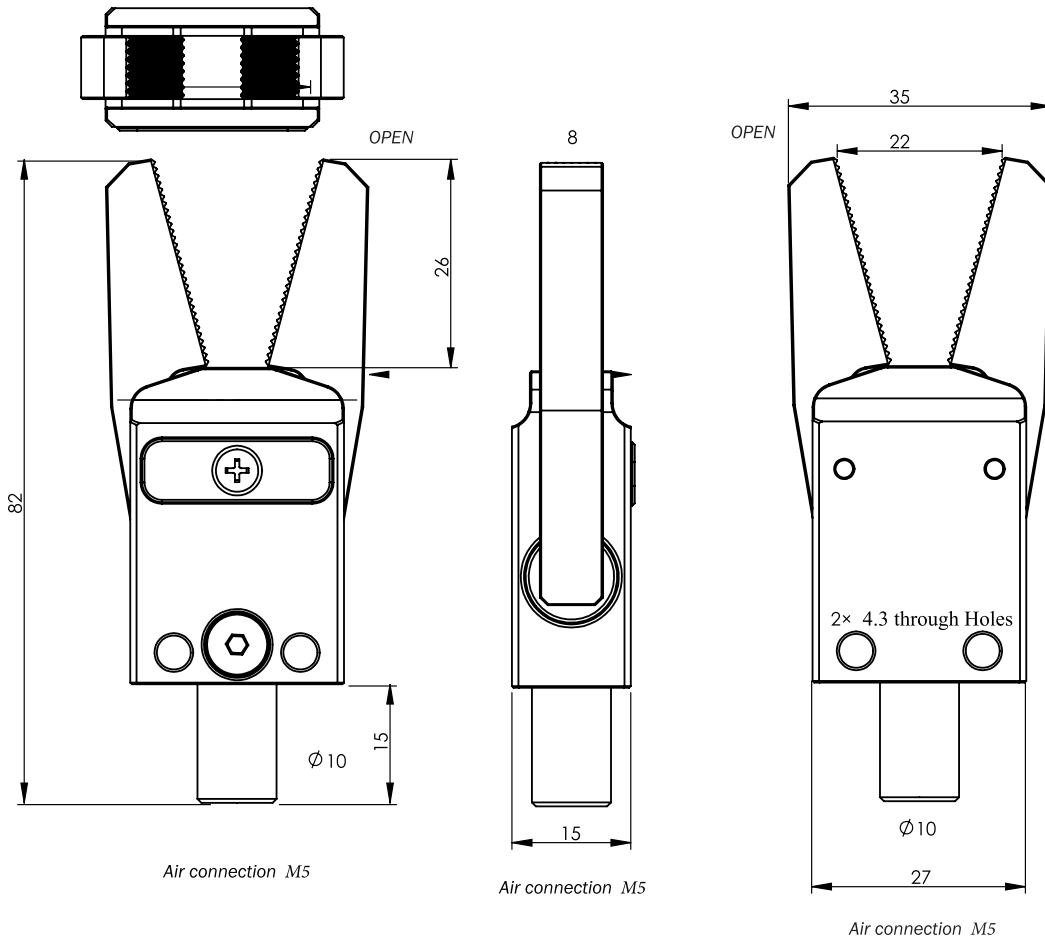
**NEW**



Aluminum jaws - A type  
Single-action

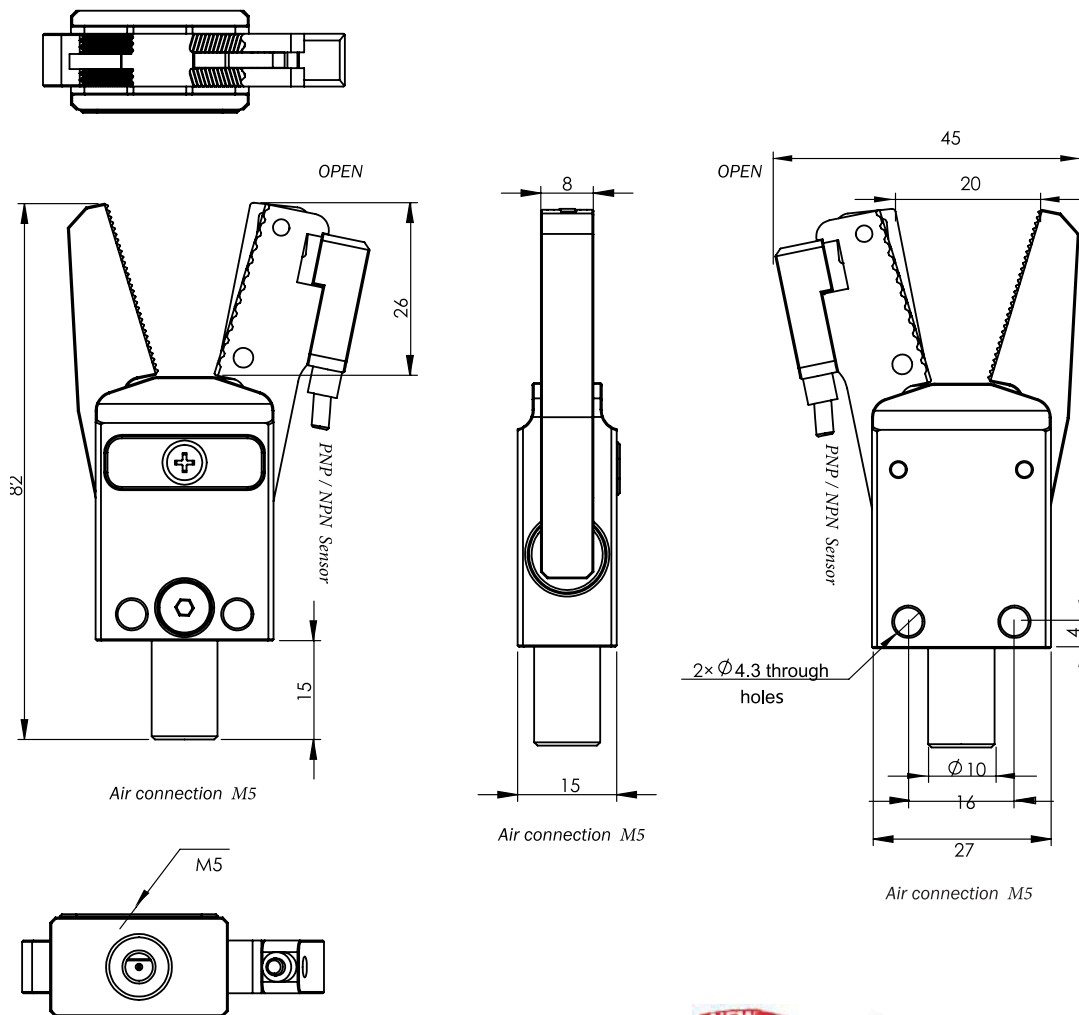
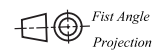
Dimensions (mm)

Fist Angle Projection



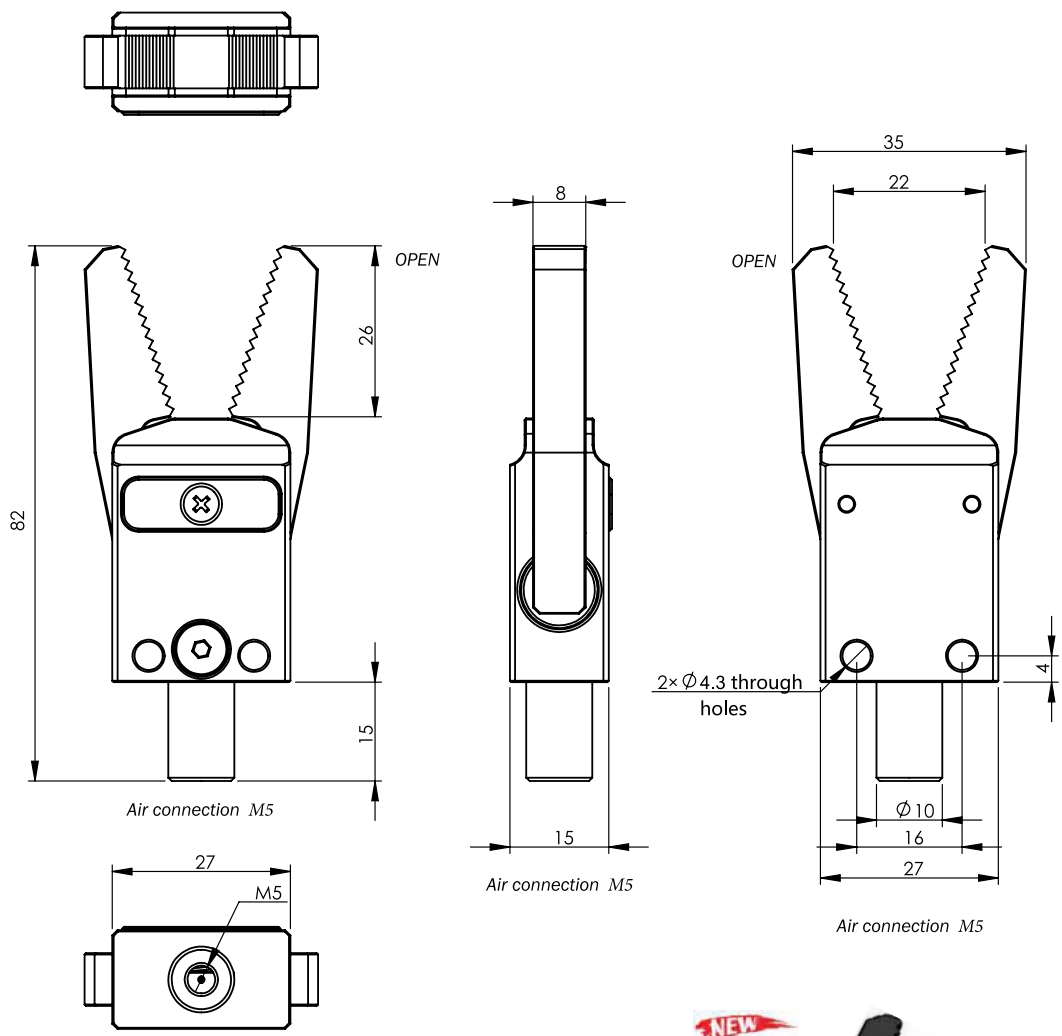
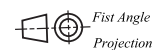
Aluminum jaws - A type  
 Single-action  
 Sensor on the jaw

Dimensions (mm)



Aluminum jaws - B type  
Single-action

Dimensions (mm)



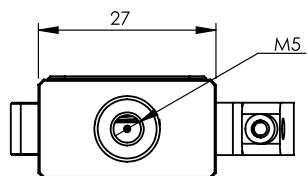
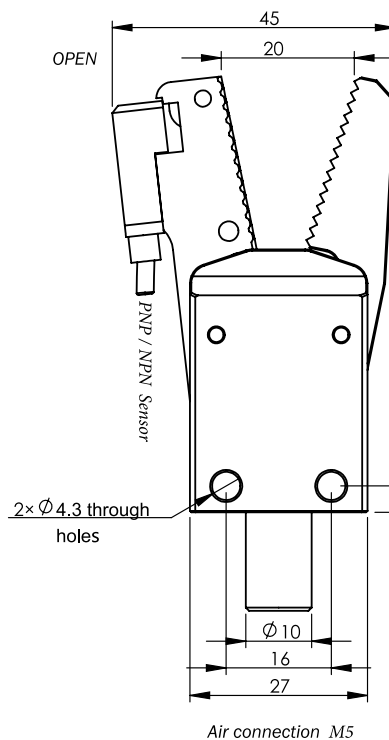
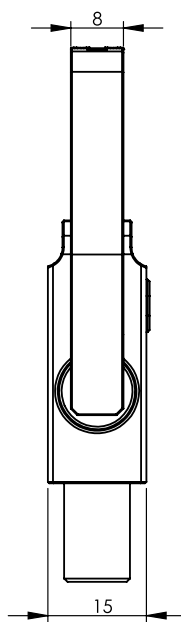
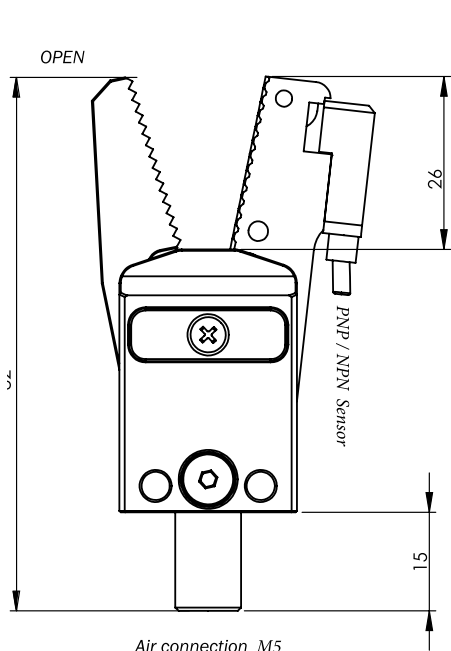
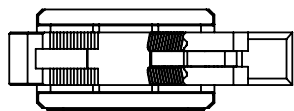
NEW



Aluminum jaws - B type  
 Single-action  
 Sensor on the jaw

Dimensions (mm)

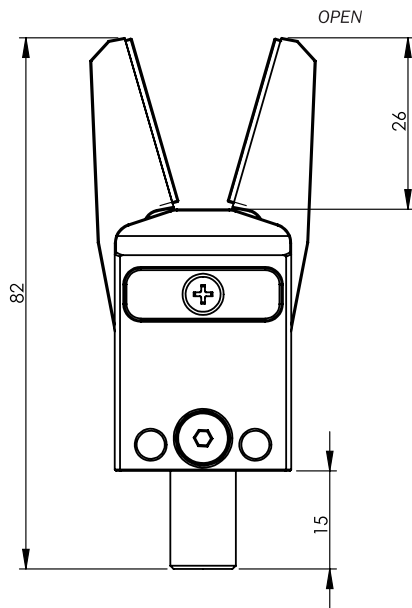
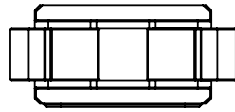
First Angle Projection



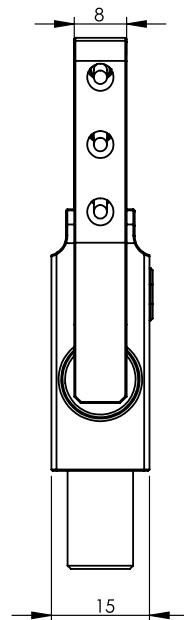
Aluminum jaws - C type  
 Single-action  
 Silicon pads

Dimensions (mm)

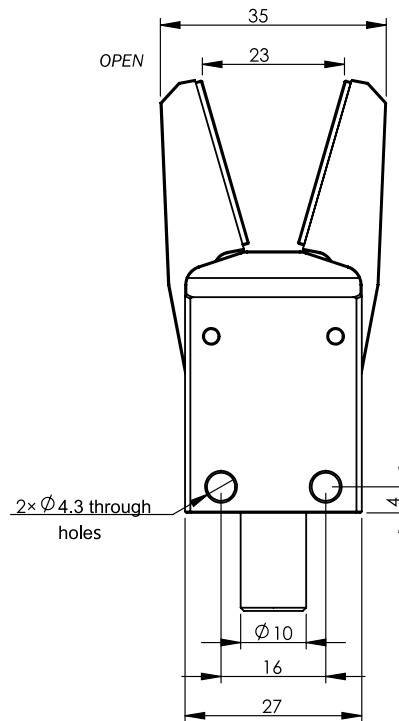
*Fist Angle Projection*



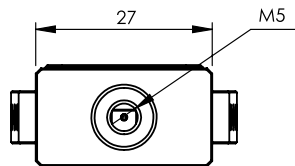
Air connection M5



Air connection M5



Air connection M5



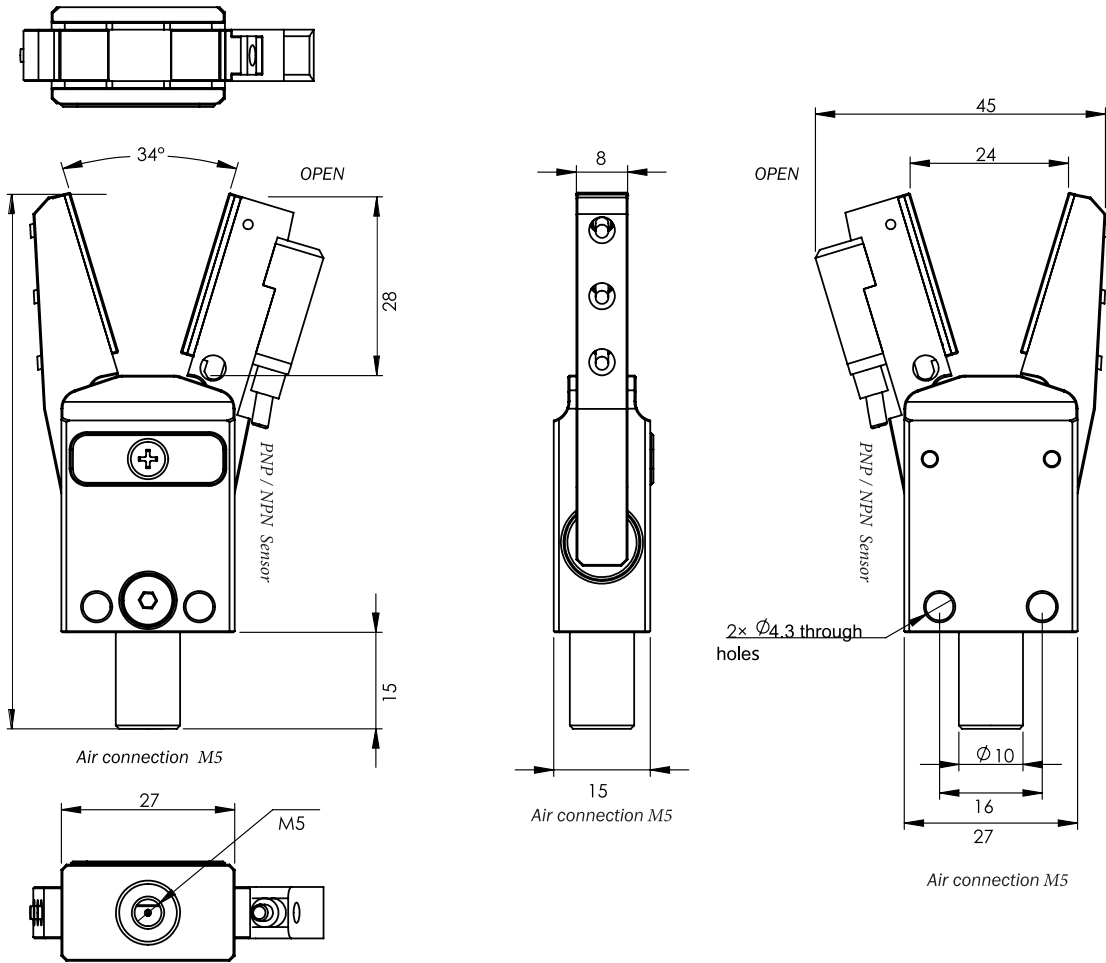
NEW



Aluminum jaws - C type  
 Single-action  
 Sensor on the jaw  
 Silicon pads

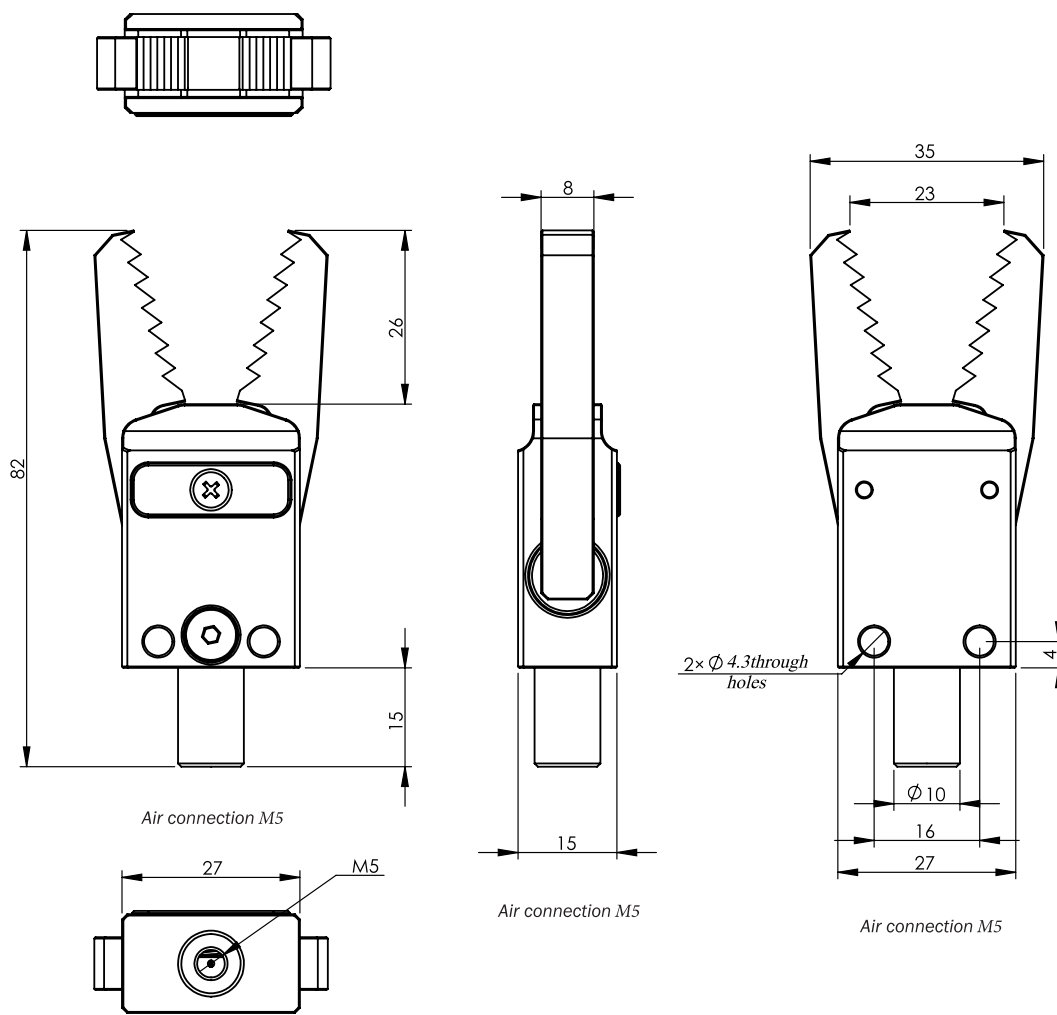
Dimensions (mm)

First Angle Projection



D-type Jaws  
 Single-action  
 Steel jaws

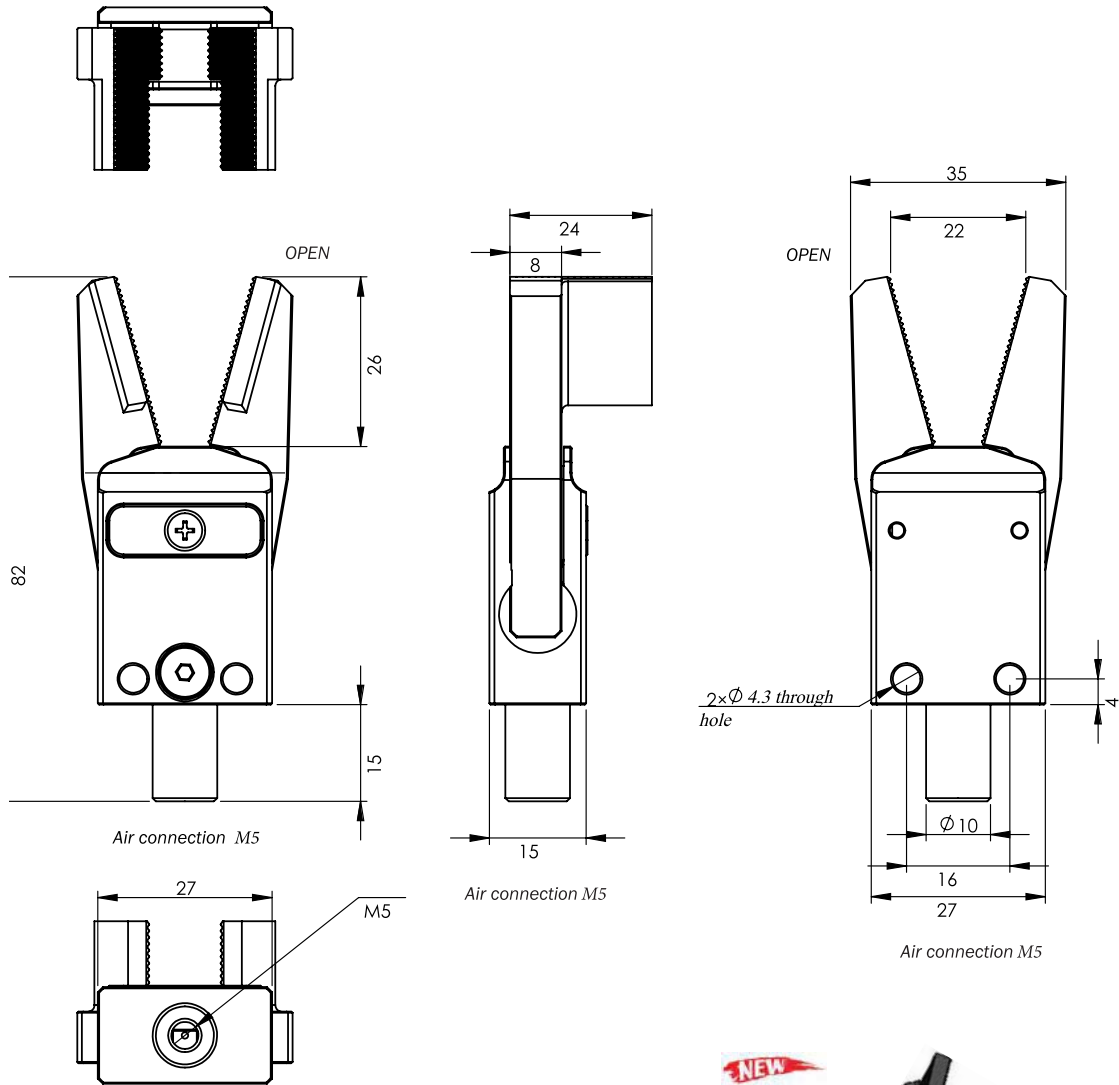
Dimensions (mm)



Aluminum jaws - E type  
Single-action

Dimensions (mm)

Fist Angle  
Projection



Piston bore: 12mm.

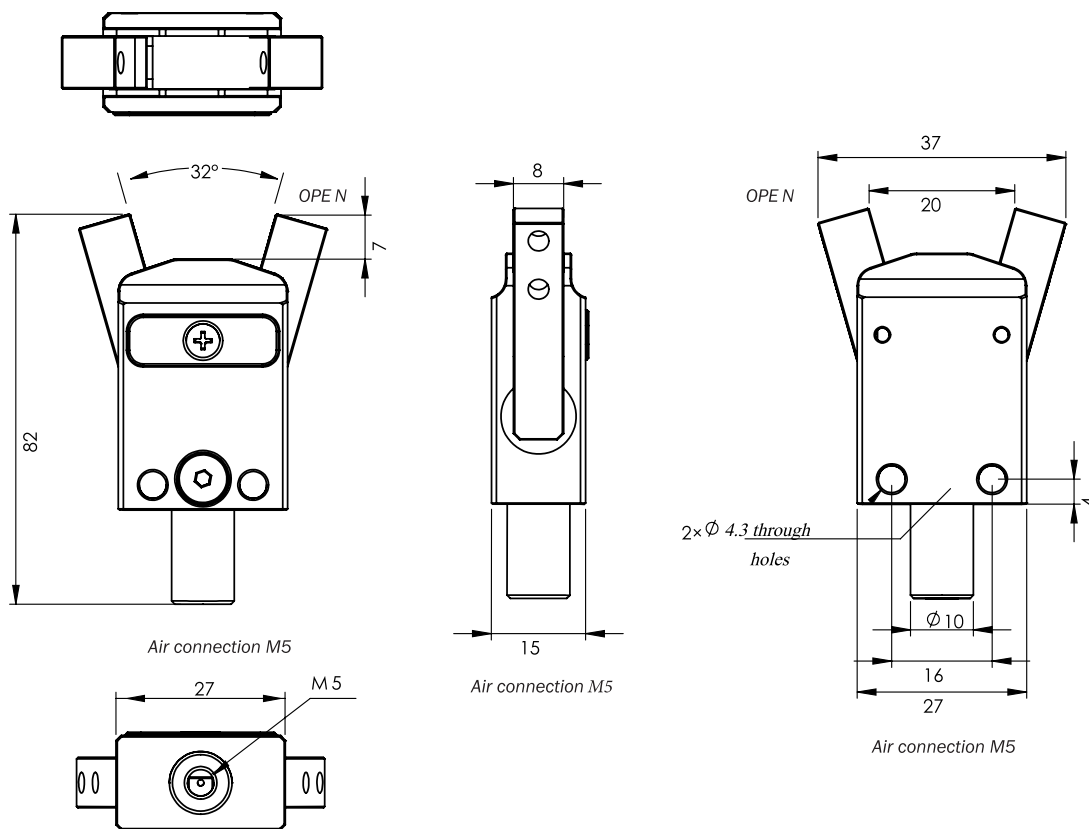
F-type Jaws

Single-action

Steel jaws

Dimensions (mm)

Fist Angle Projection



### FGS14 Series



FGS14A-14

FGS14A-14-CP

FGS14B-14

FGS14B-14-CP

FGS14C-14



FGS14C-14-CP

FGS14D-14

FGS14D-14-CP

FGS14E-14

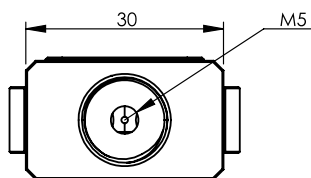
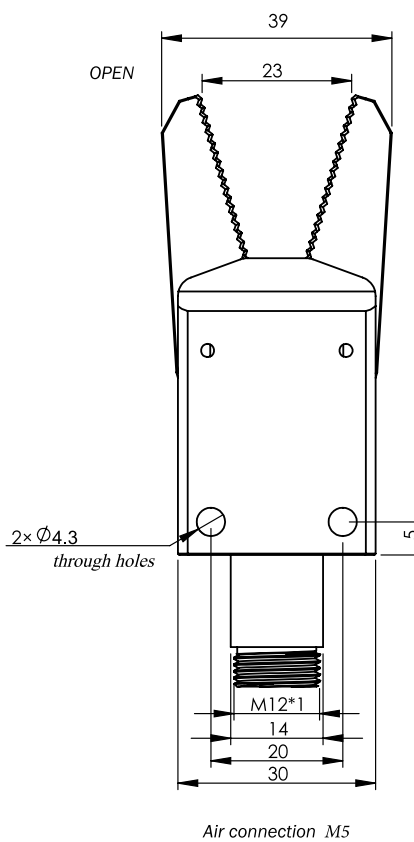
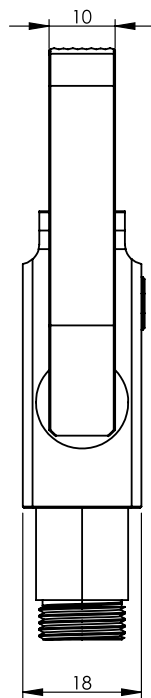
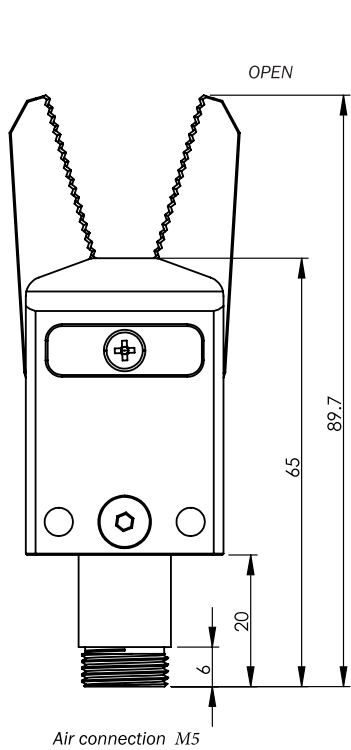
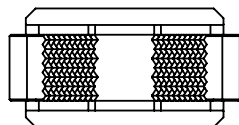
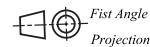
FGS14E-14-CP

FGS14F-14

Model	FGS14A-14	FGS14A-14-CP / CN	FGS14B-14	FGS14B-14-CP / CN	FGS14C-14	FGS14C-14-CP / CN	FGS14D-14	FGS14D-14-CP / CN	FGS14E-14	FGS14E-14-CP / CN	FGS14F-14
Medium	Filtered & Compressed Air										
Pressure Range	2.5 ~ 8 bar										
Temperature Range	5 ~ 60 degree										
Stroke / degree	2*16										
Max Working Frequency	3 Hz										
Cycle Air Consumption	1.4cm <sup>3</sup>										
Closing time without load	0.01s										
Closing gripping torque	130N/cm										
Opening gripping torque	7N/cm										
Air Inlet	M5										
Weight / g	65	76	65	76	65	76	65	76	65	76	65

A-type aluminum jaws  
Single-action

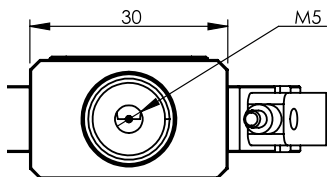
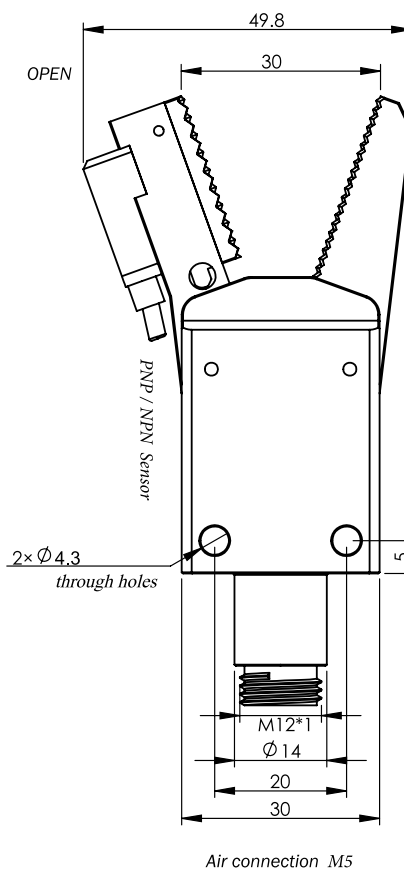
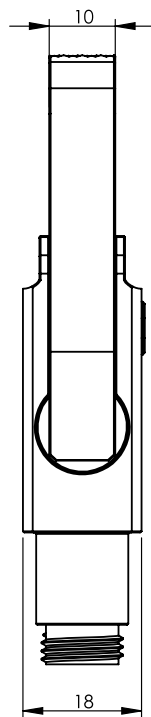
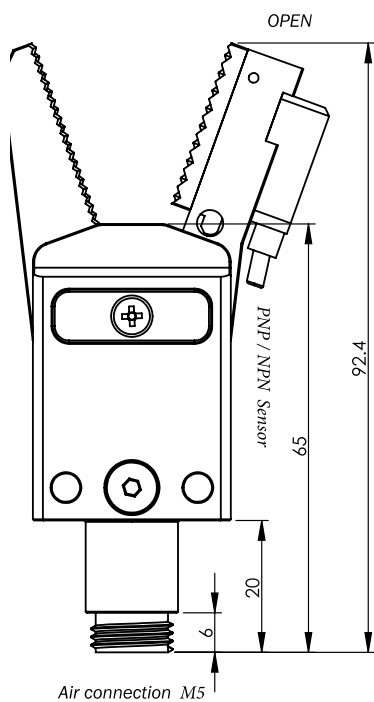
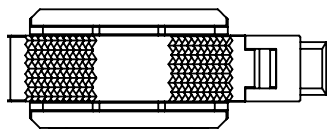
Dimensions (mm)



Aluminum jaws - A type  
Single-action  
Sensor on the jaw

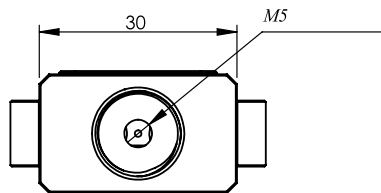
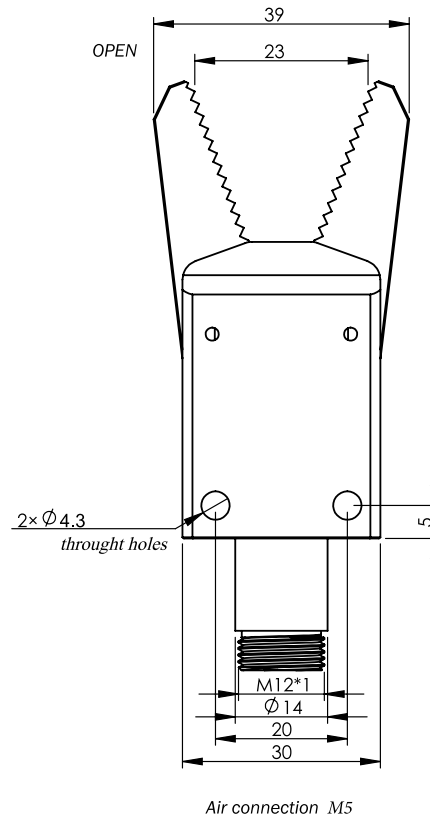
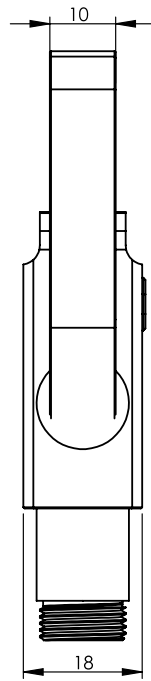
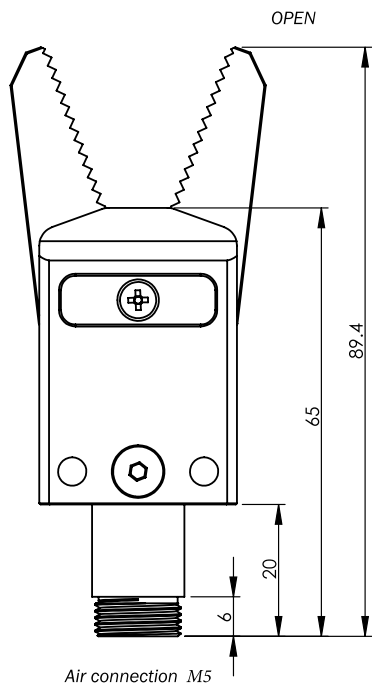
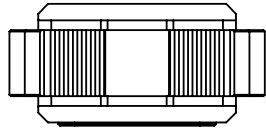
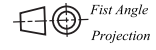
Dimensions (mm)

First Angle Projection



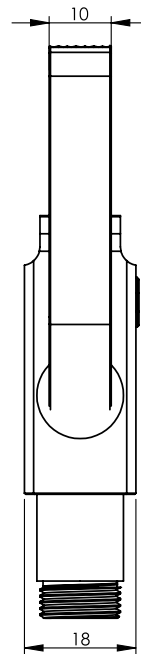
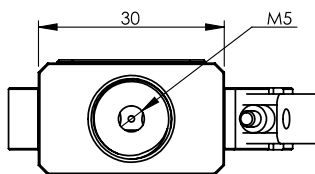
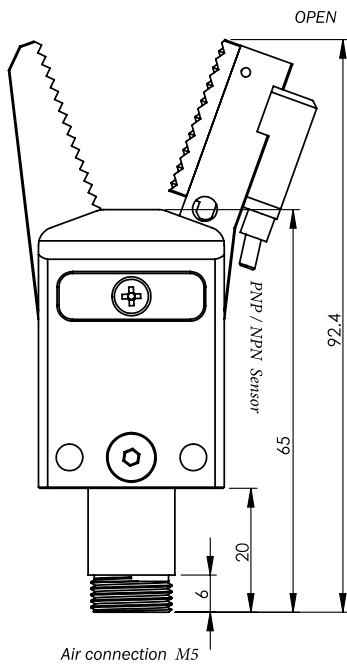
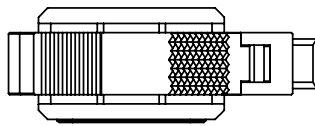
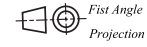
Single-action

Dimensions (mm)

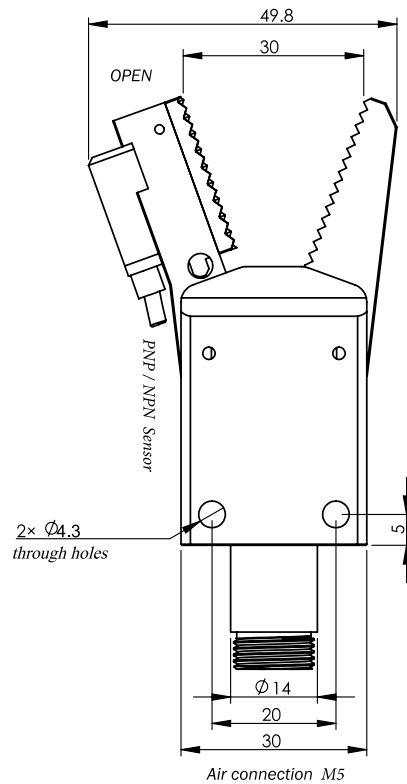


Piston bore: 14mm.  
 Aluminum jaws - B type  
 Single-action  
 Sensor on the jaw

Dimensions (mm)



Air connection M5



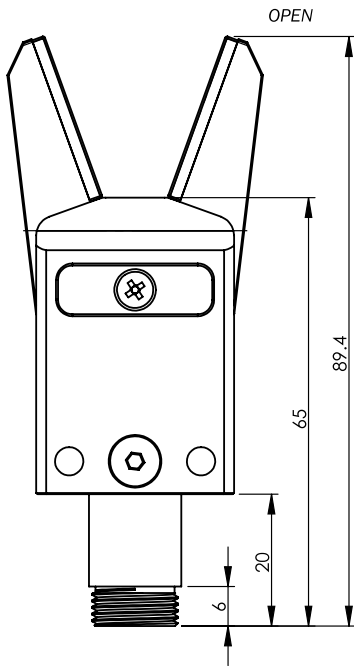
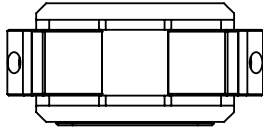
NEW



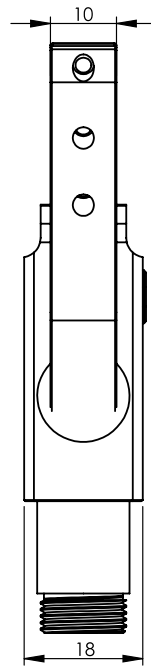
Single-action  
Silicon pads

Dimensions (mm)

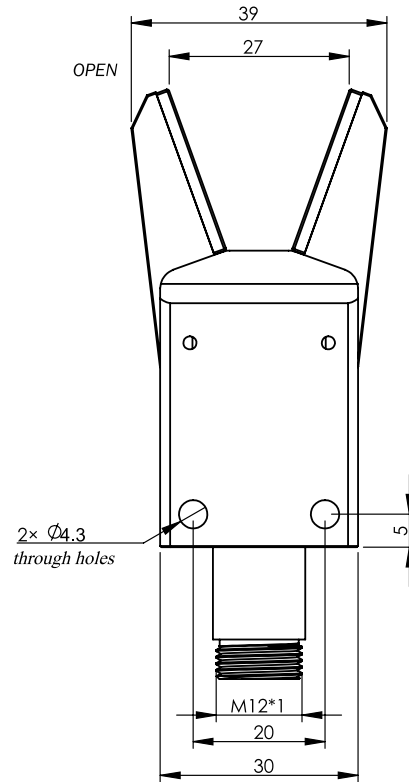
Fist Angle  
Projection



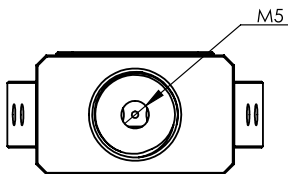
Air connection M5



Air connection M5



Air connection M5

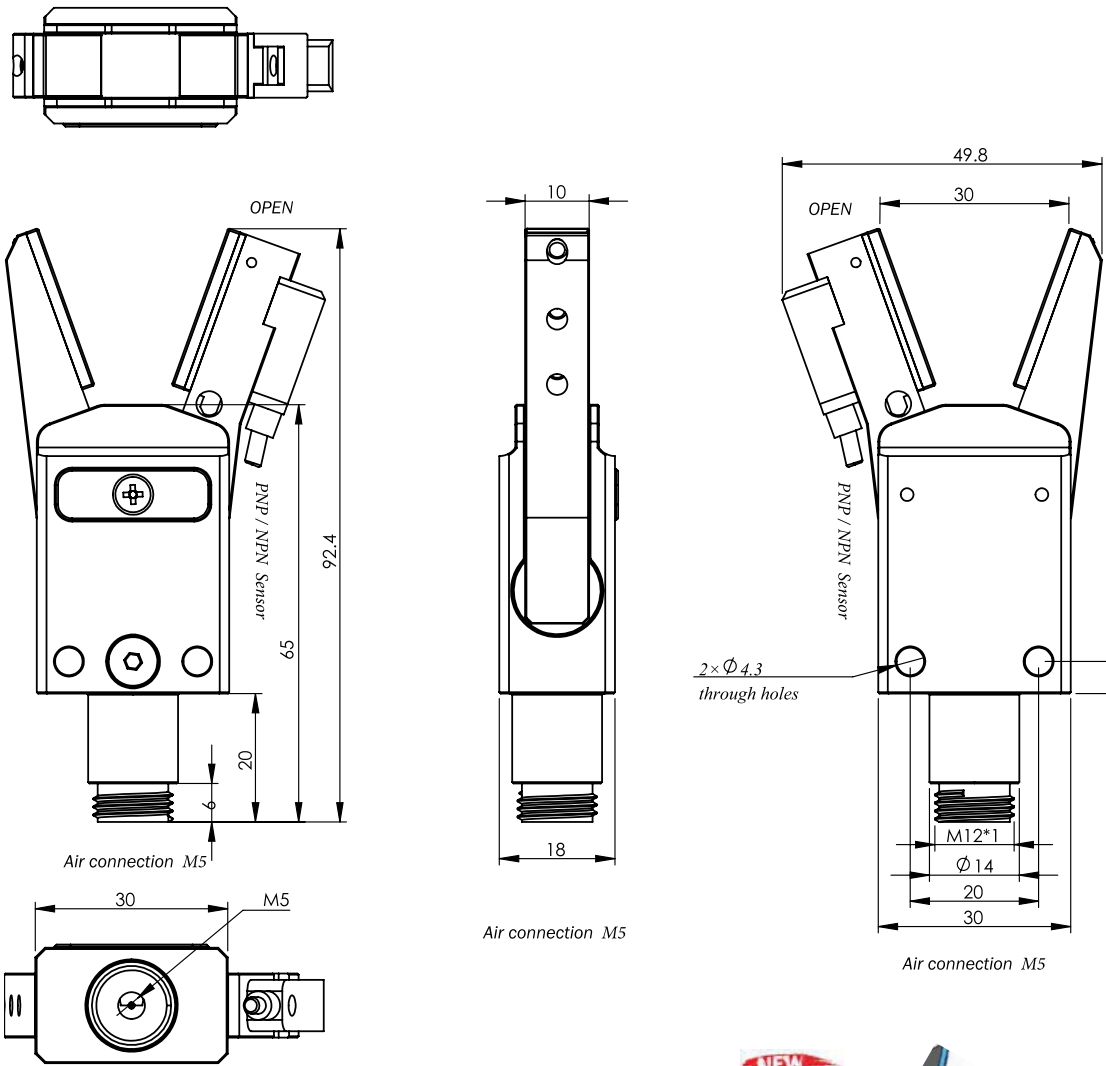
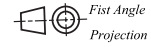


NEW



Aluminum jaws - C type  
 Single-action  
 Sensor on the jaw  
 Silicon pads

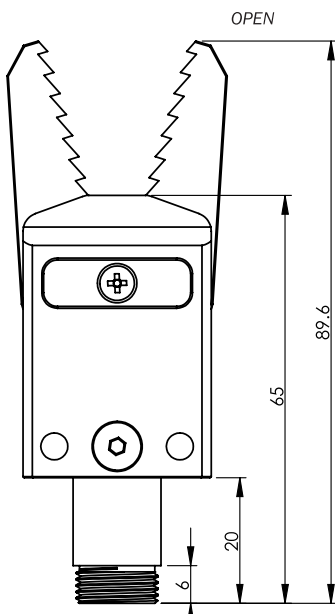
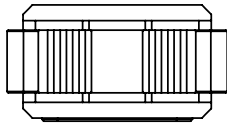
Dimensions (mm)



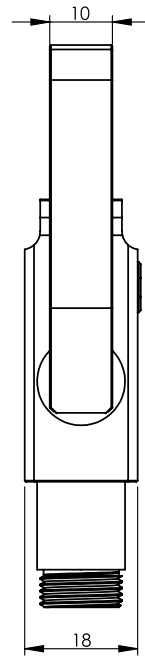
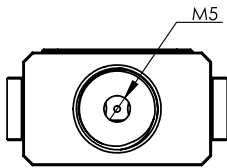
Single-action

Dimensions (mm)

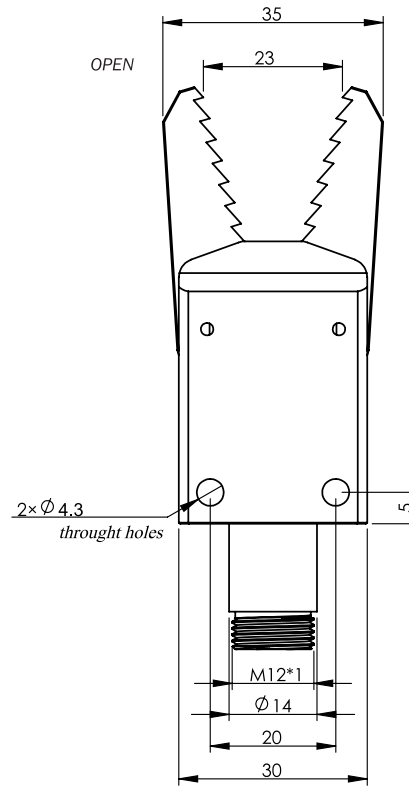
First Angle Projection



Air connection M5



Air connection M5



Air connection M5

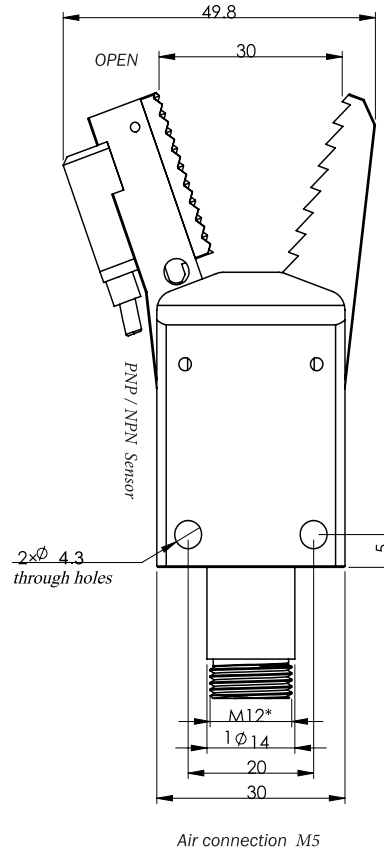
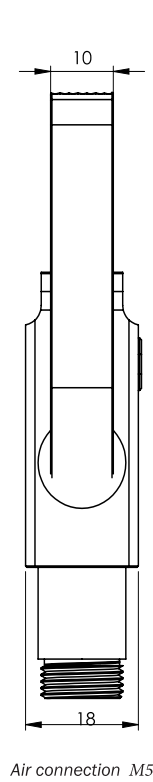
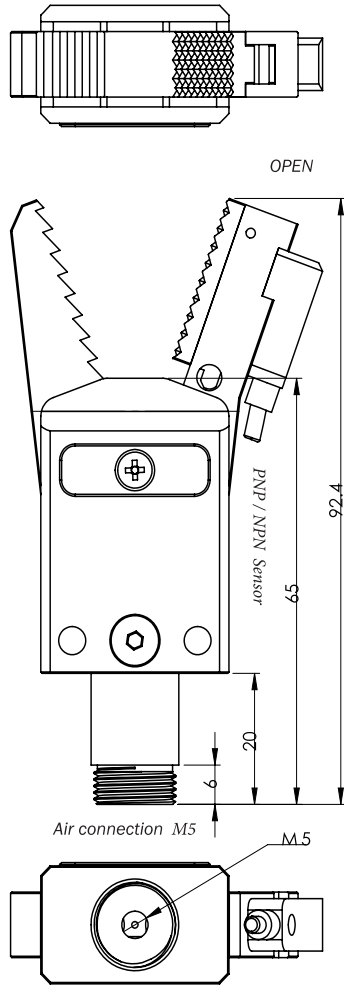
NEW



Aluminum jaws - D type  
 Single-action  
 Sensor on the jaw

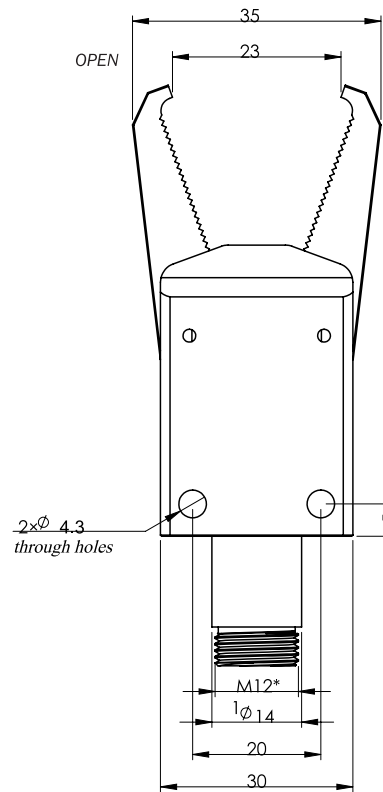
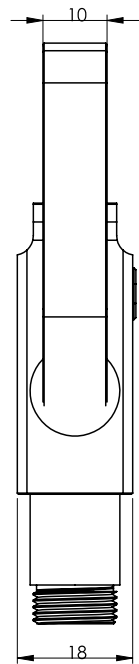
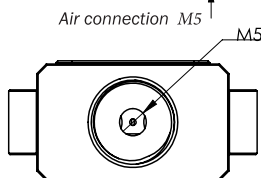
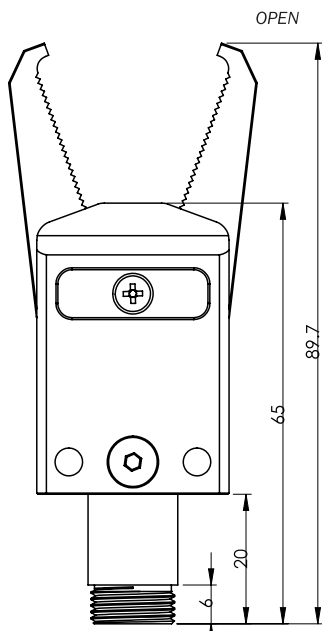
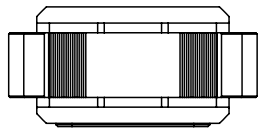
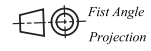
Dimensions (mm)

First Angle Projection



Aluminum jaws E-type  
Single-action

Dimensions (mm)

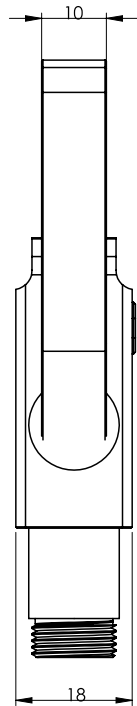
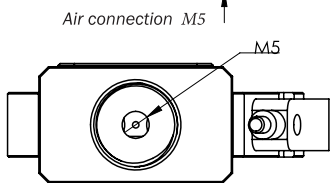
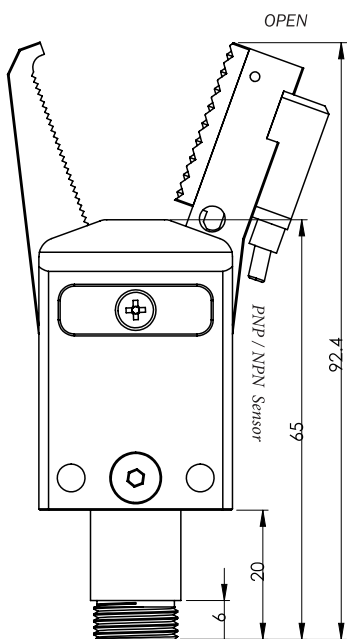
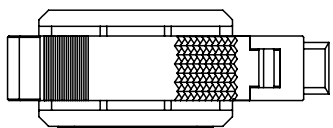
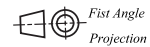


NEW

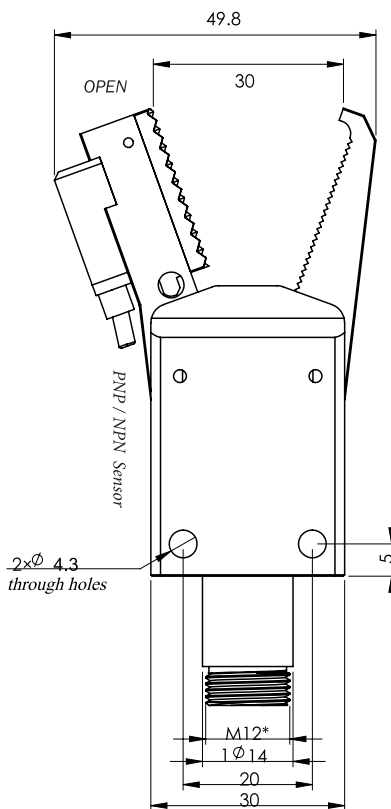


Aluminum jaws - E type  
Single-action  
Sensor on the jaw

Dimensions (mm)



Air connection M5

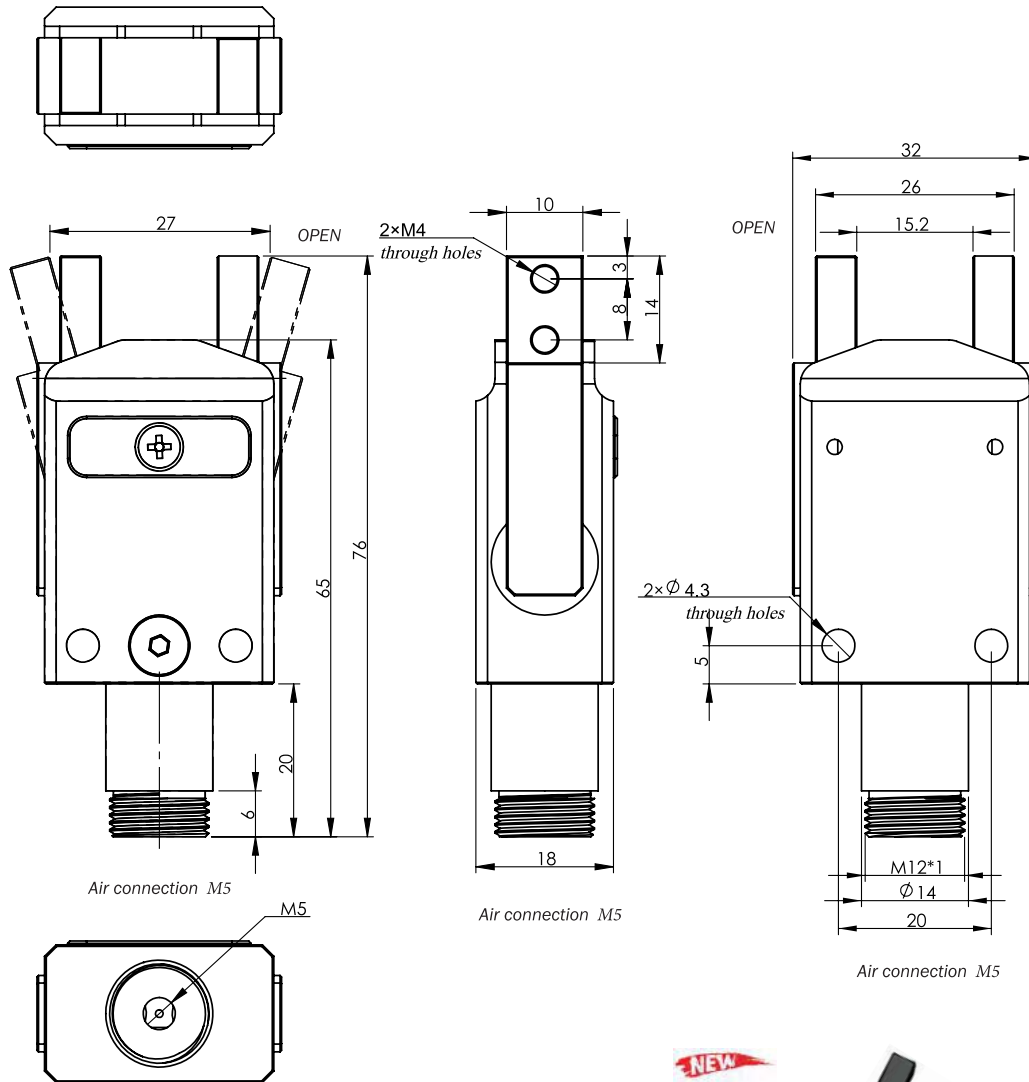
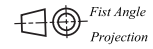


Air connection M5



Aluminum jaws - F type  
 Single-action  
 Stessl jaws & jaws customized

Dimensions (mm)



NEW



2-jaw rotation de-greasing / grinding / polishing / spray / strip

FGS20 - series



FGS20A-20      FGS20A-20-CP      FGS20B-20      FGS20B20-CP      FGS20C-20      FGS20C-20-CP

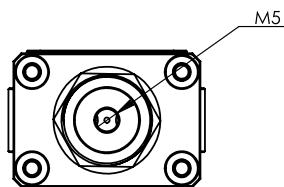
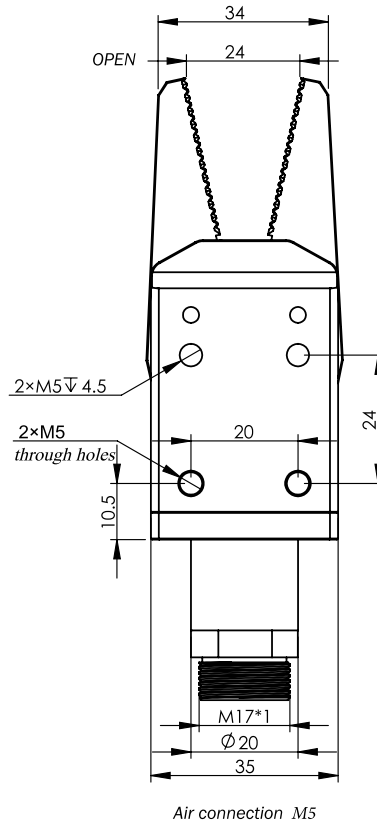
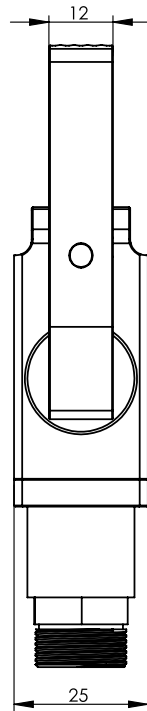
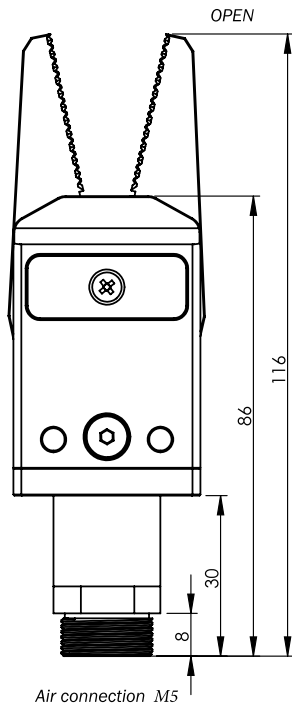
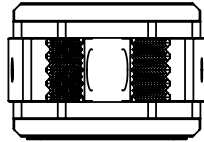
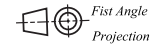


FGS20D-20      FGS20D-20-CP      FGS20E-20      FGS20F-20      FGS20G-20-CP      FGS20H-20

Model	FGS20A-20	FGS20A-20-CP / CN	FGS20B-20	FGS20B-20-CP / CN	FGS20C-20	FGS20C-20-CP / CN	FGS20D-20	FGS20D-20-CP / CN	FGS20E-20	FGS20F-20	FGS20G-20-CP / CN	FGS20H-20
Medium	Filtered & Compressed Air											
Pressure Range	2.5 ~ 8 bar											
Temperature Range	5 ~ 60 degree											
Stroke / degree	2*14											
Max Working Frequency	2 Hz											
Cycle Air Consumption	2.7cm <sup>3</sup>											
Closing time without load	0.01s											
Closing gripping torque	210N/cm											
Opening gripping torque	10N/cm											
Air Inlet	M5											
Weight / g	112	135	112	136	112	135	140	155	125	130	140	122

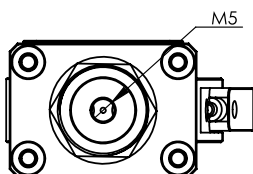
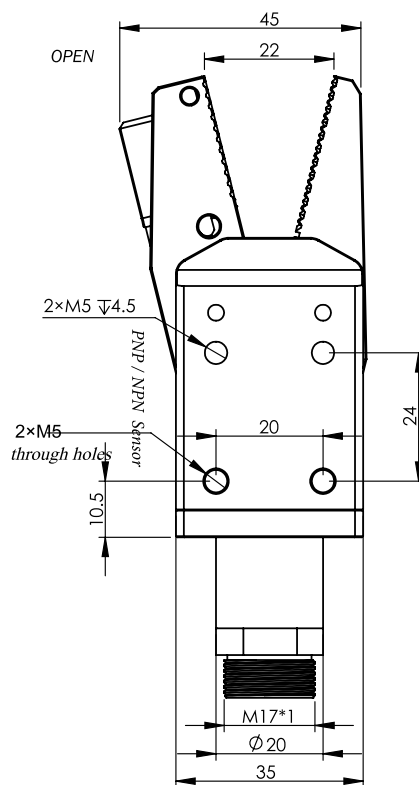
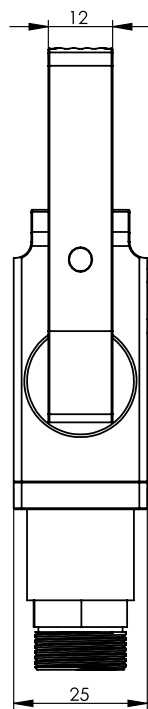
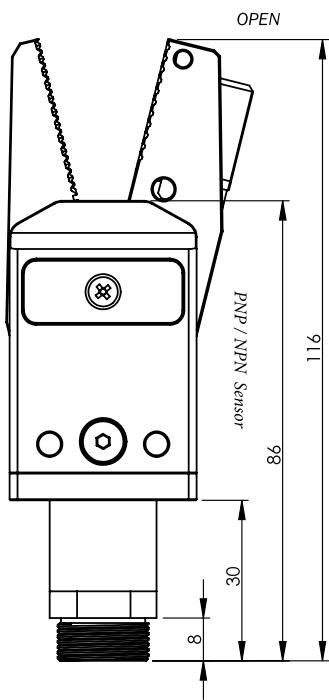
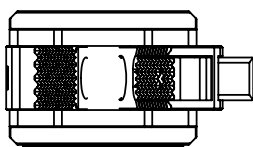
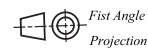
Aluminum jaws - A-type  
Single-action

Dimensions (mm)



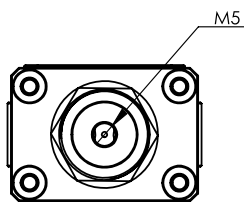
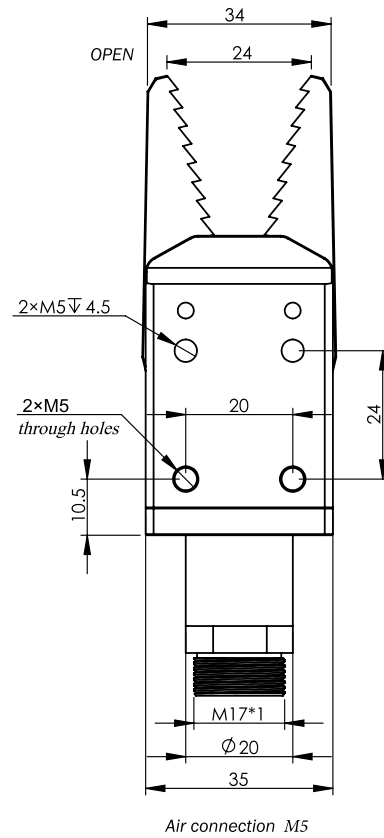
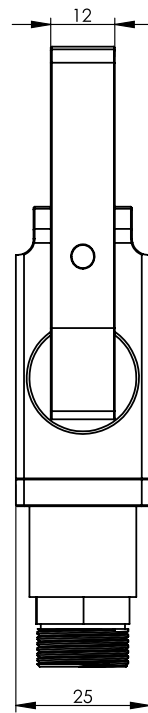
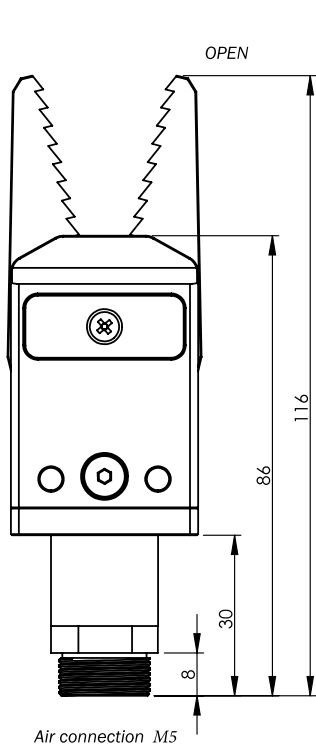
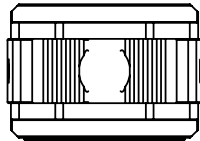
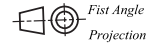
Piston bore: 20mm.  
 Aluminum jaws - A-type  
 Single-action  
 Sensor on the jaw

Dimensions (mm)



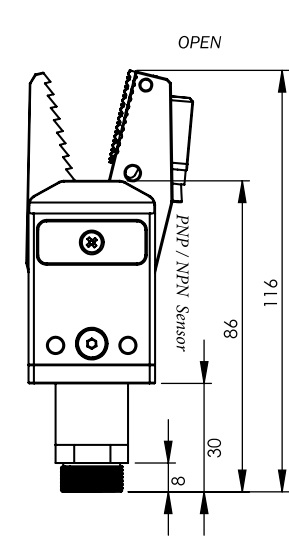
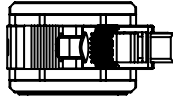
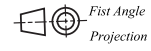
Aluminum jaws - B-type  
Single-action

Dimensions (mm)

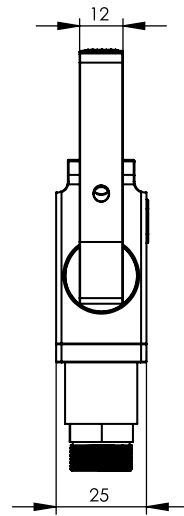


Piston bore: 20mm.  
 Aluminum jaws B-type  
 Single-action  
 Sensor on the jaw

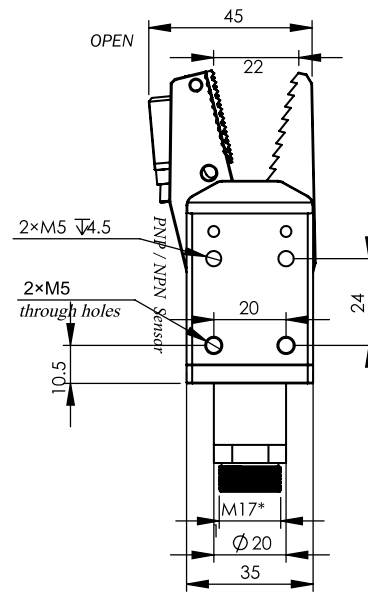
Dimensions (mm)



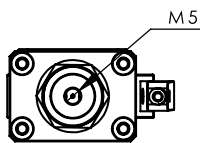
Air connection M5



Air connection M5



Air connection M5

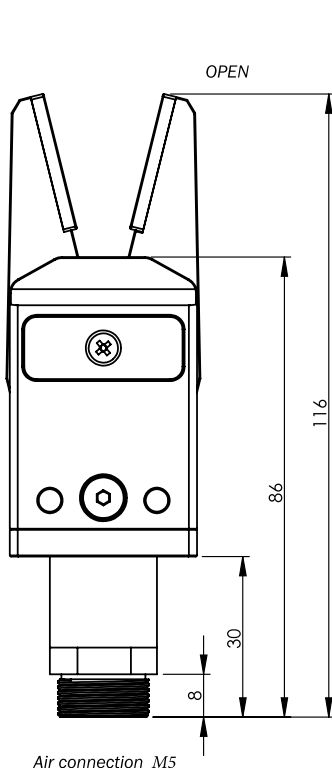
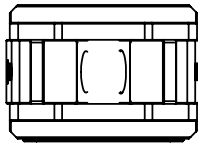
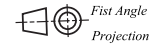


Air connection M5

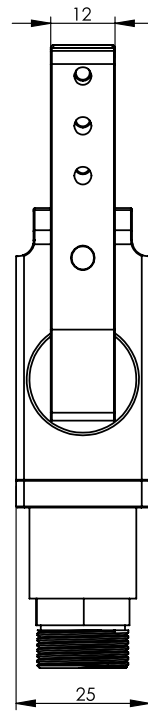


Aluminum jaws C-type  
 Single-action  
 Silicon pads

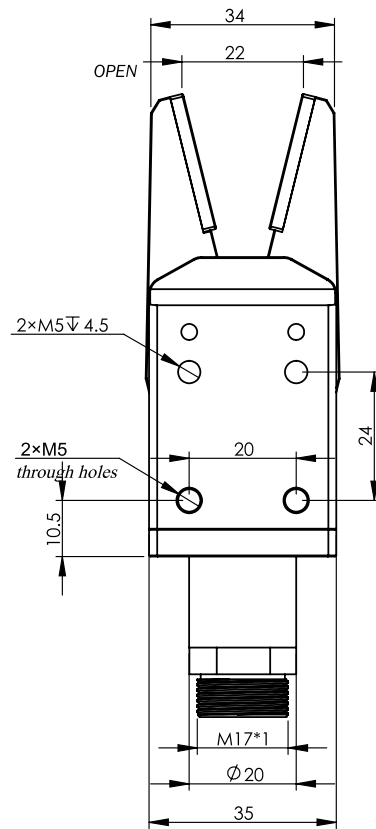
Dimensions (mm)



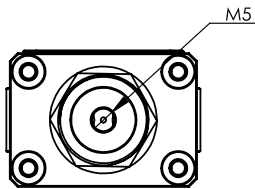
Air connection M5



Air connection M5

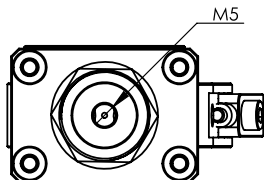
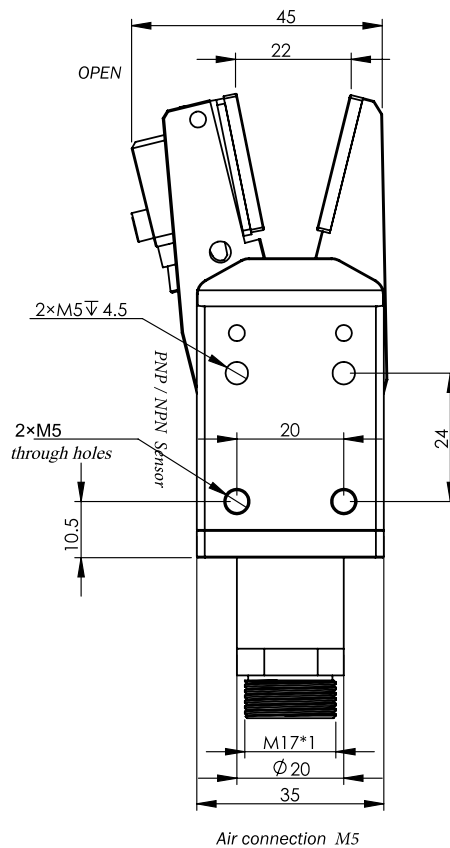
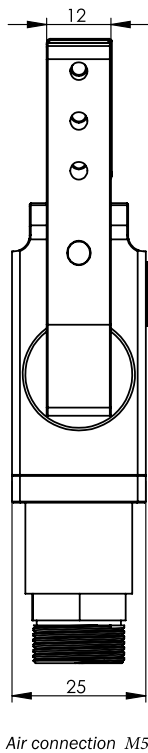
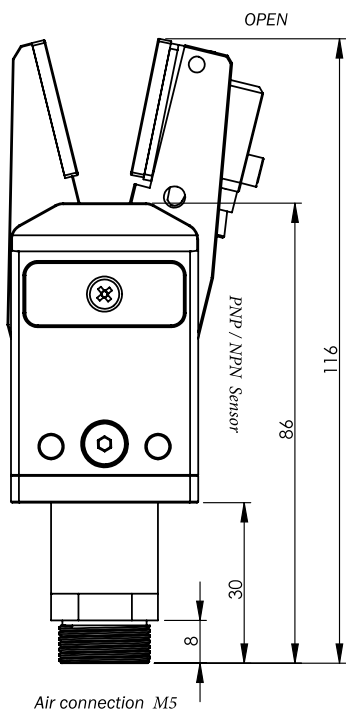
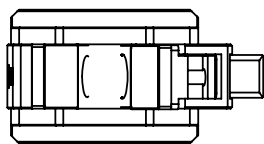
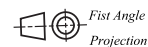


Air connection M5



Aluminum jaws C-type  
 Single-action  
 Sensor on the jaw  
 Silicon pads

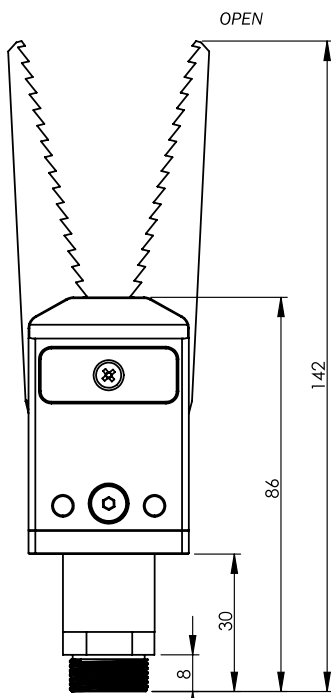
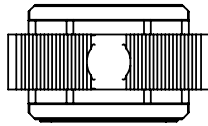
Dimensions (mm)



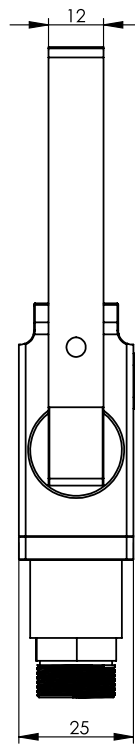
Aluminum jaws D-type  
Single-action

Dimensions (mm)

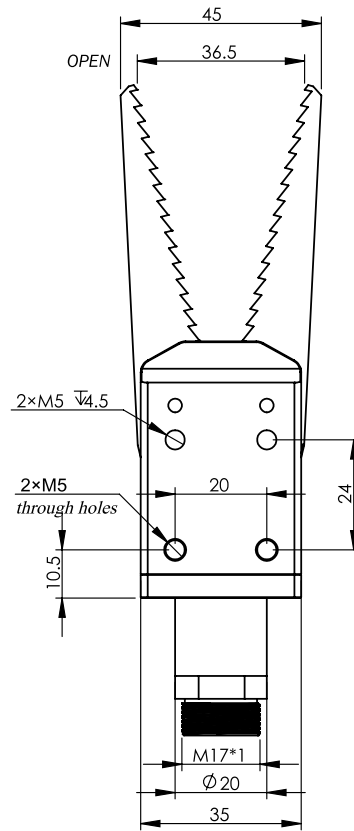
First Angle Projection



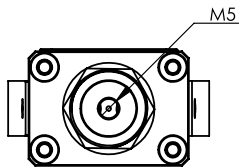
Air connection M5



Air connection M5

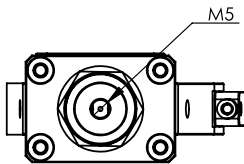
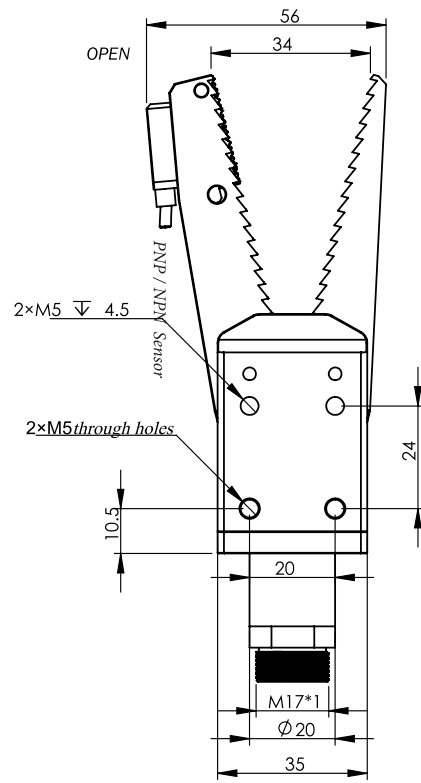
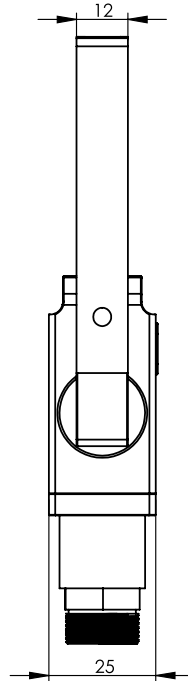
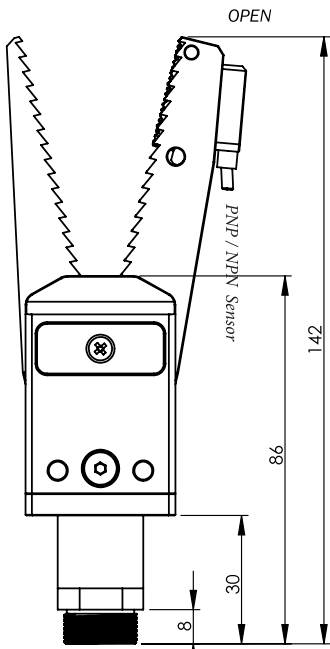
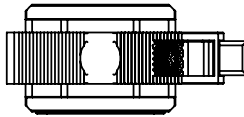


Air connection M5



Aluminum jaws D-type  
 Single-action  
 Sensor on the jaw

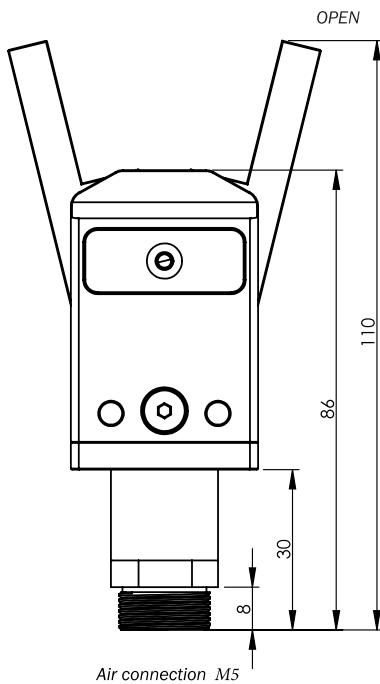
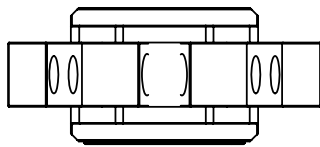
Dimensions (mm)



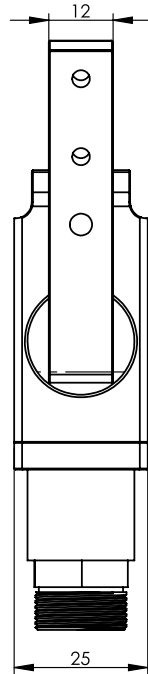
Aluminum jaws E-type  
 Single-action  
 Jaws customized

Dimensions (mm)

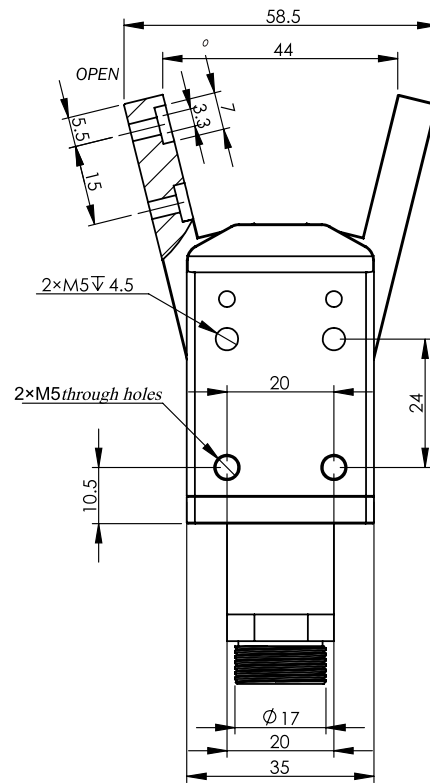
Fist Angle  
 Projection



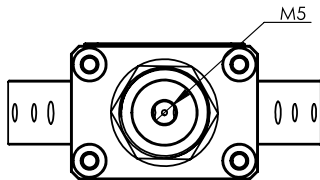
Air connection M5



Air connection M5



Air connection M5

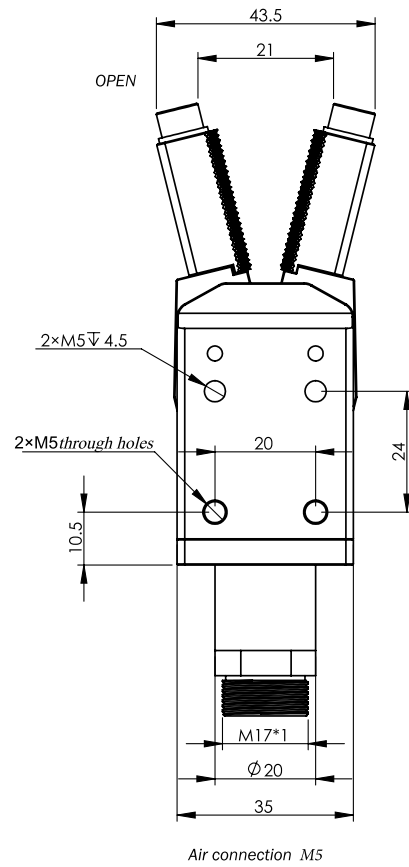
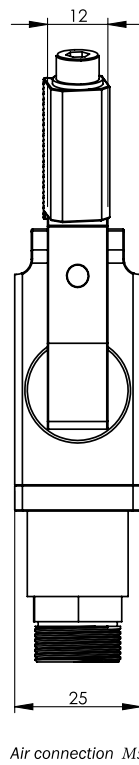
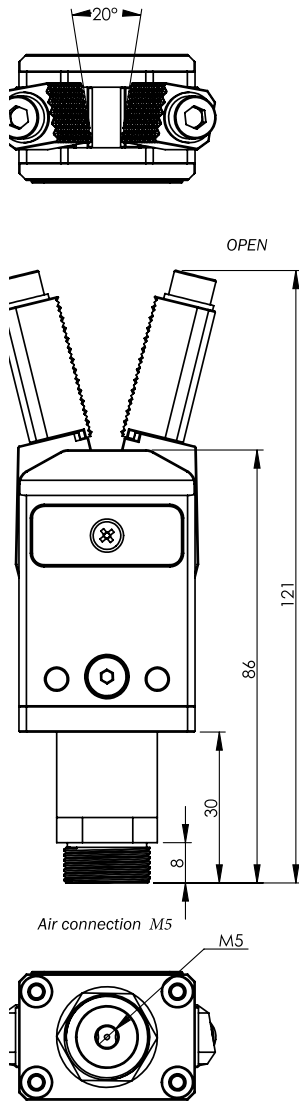
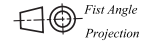


M5



Piston bore: 20mm.  
 Aluminum jaws F-type  
 Single-action

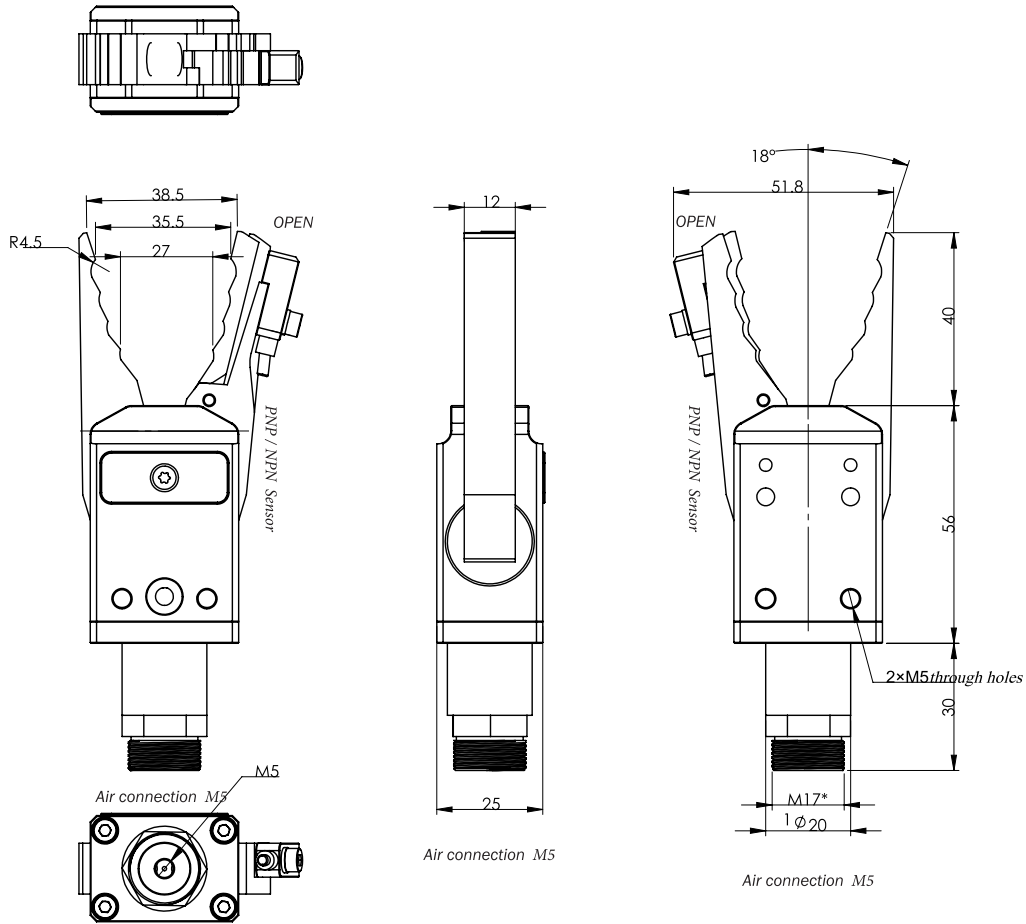
Dimensions (mm)



**FGS20G-20-CP/CN**

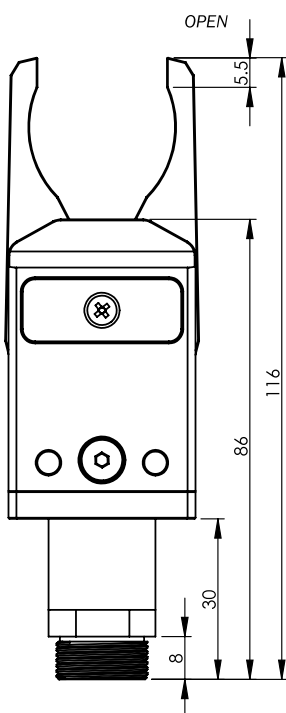
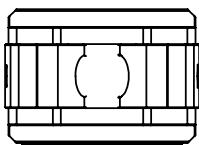
Piston bore: 20mm.  
 Aluminum jaws G-type  
 Single-action  
 Sensor on the jaw

Dimensions (mm)

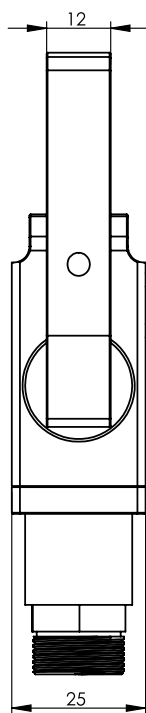


Piston bore: 20mm.  
 Aluminum jaws H-type  
 Single-action

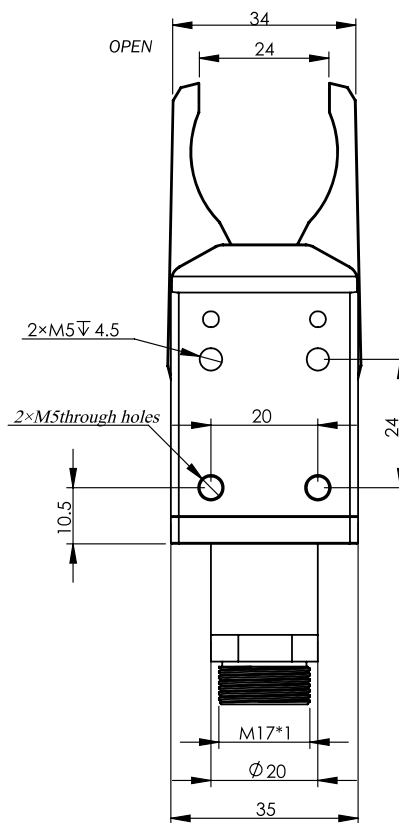
Dimensions (mm)



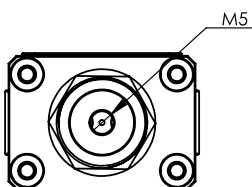
Air connection M5



Air connection M5



Air connection M5



### 2-Jaws Non-Selfcentering Angular Pneumatic - Sprue Gripper

FGST20 - series



FGST20A-16    FGST20A-16-CP    FGST20B-16    FGST20B-16-CP    FGST20C-16



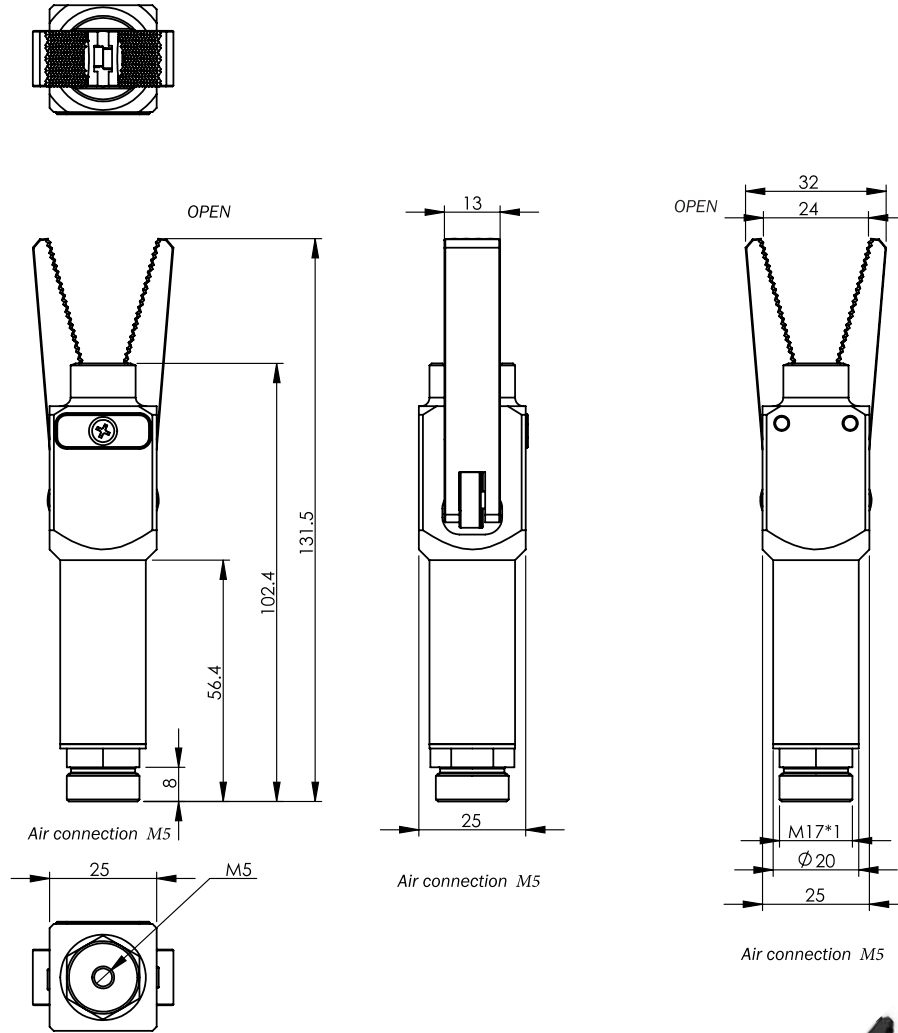
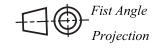
FGST20C-16-CP    FGST20D-16    FGST20D-16-CP    FGST20E-16    FGST20F-16    FGST20F-16-CP

Model	FGST20A-16	FGST20A-16-CP / CN	FGST20B-16	FGST20B-16-CP / CN	FGST20C-16	FGST20C-16-CP / CN	FGST20D-16	FGST20D-16-CP / CN	FGST20E-16	FGS20F-16	FGST20F-16-CP / CN
Medium	Filtered & Compressed Air										
Pressure Range	2.5 ~ 8 bar										
Temperature Range	5 ~ 60 degree										
Stroke / degree	2*15										
Max Working Frequency	2 Hz										
Cycle Air Consumption	3.6cm <sup>3</sup>										
Closing time without load	0.01s										
Closing gripping torque	300N/cm										
Opening gripping torque	20N/cm										
Air Inlet	M5										
Weight / g	112	130	115	135	112	135	161	165	145	165	155

100120A-10

Piston bore: 16mm.  
 Aluminum jaws A-type  
 Single-action

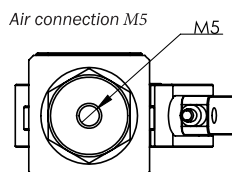
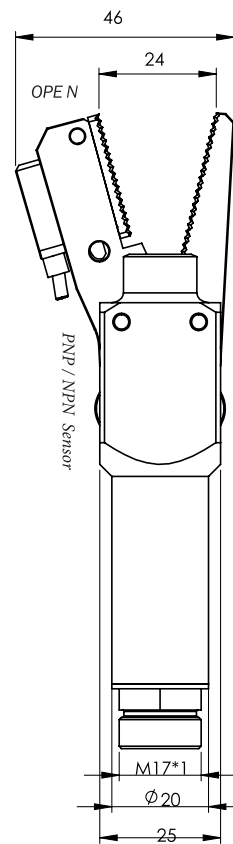
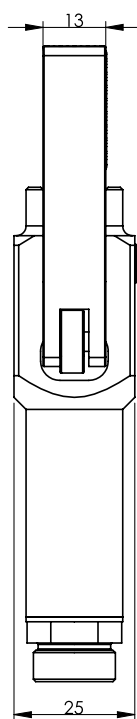
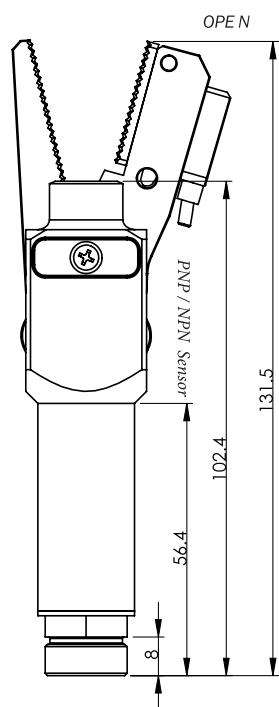
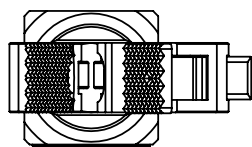
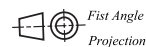
Dimensions (mm)



### 100120A-10-01/01

Piston bore: 16mm.  
 Aluminum jaws A-type  
 Single action  
 Sensor on the jaw

Dimensions (mm)



Air connection M5

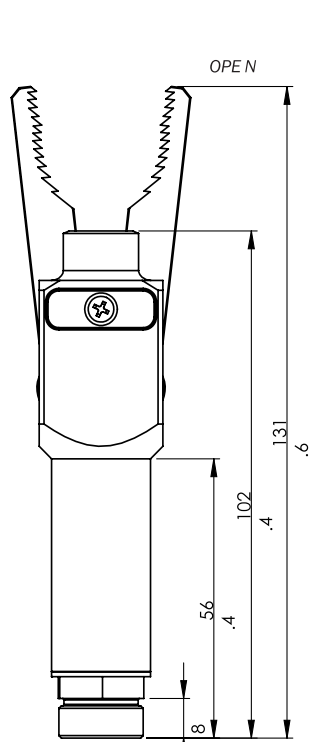
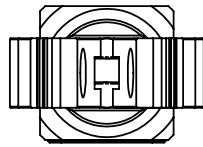
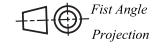
Air connection M5



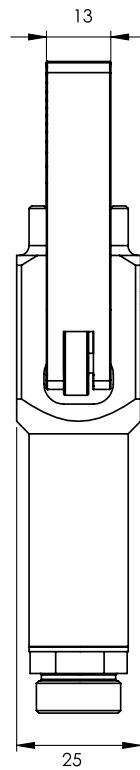
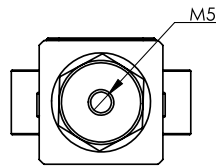
### 1001202-10

Piston bore: 16mm.  
 Aluminum jaws B-type  
 Single-action

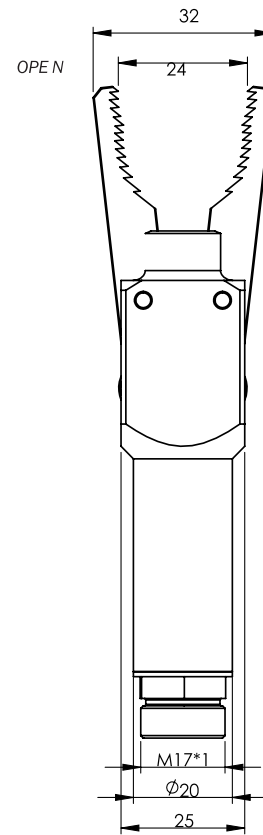
Dimensions (mm)



Air connection M5



Air connection M5



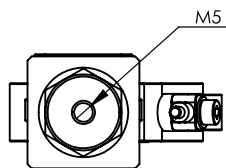
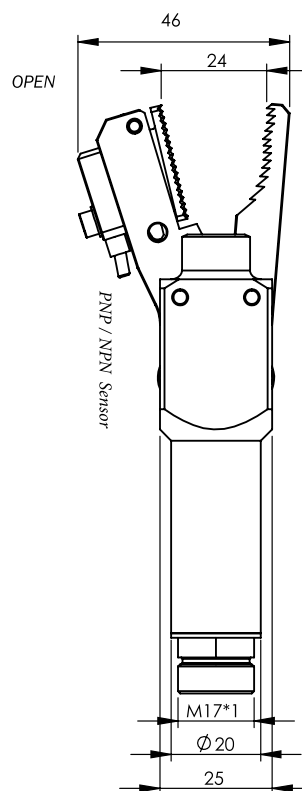
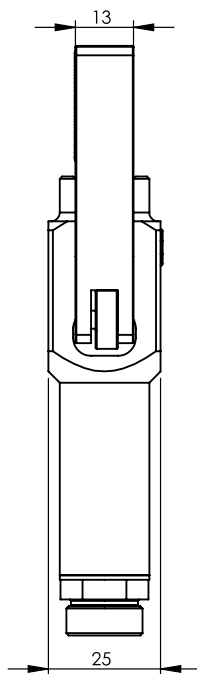
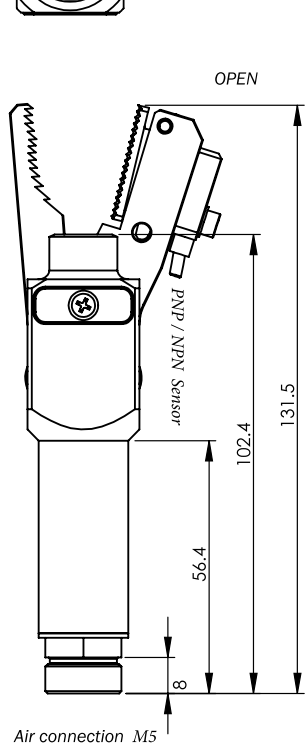
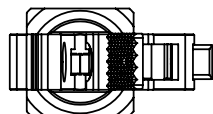
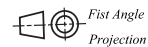
Air connection M5



**FGST20B-16-CP/CN**

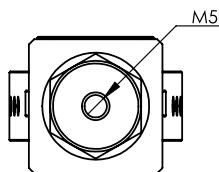
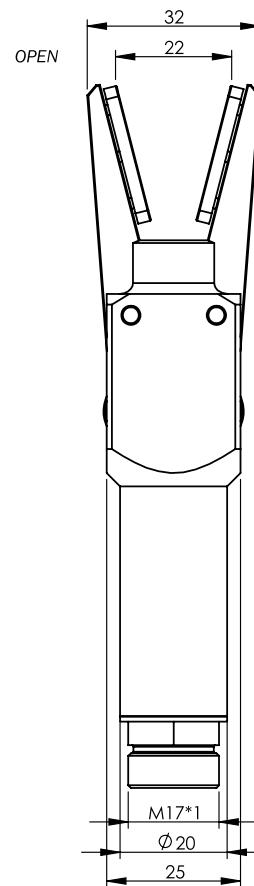
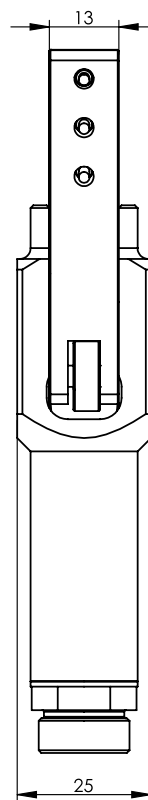
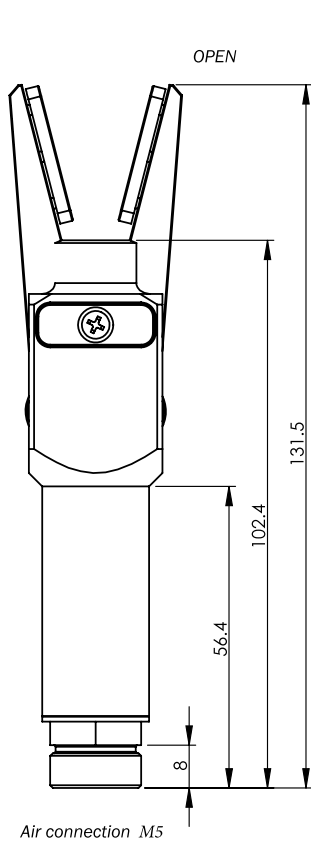
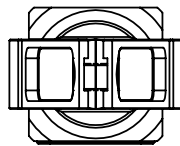
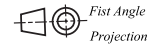
Piston bore: 16mm.  
 Aluminum jaws B-type  
 Single-action  
 Sensor on the jaw

Dimensions (mm)



Piston bore: 16mm.  
 Aluminum jaws C-type  
 Single-action  
 Silicon pads

Dimensions (mm)

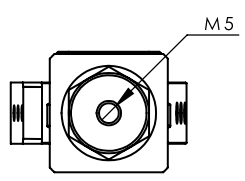
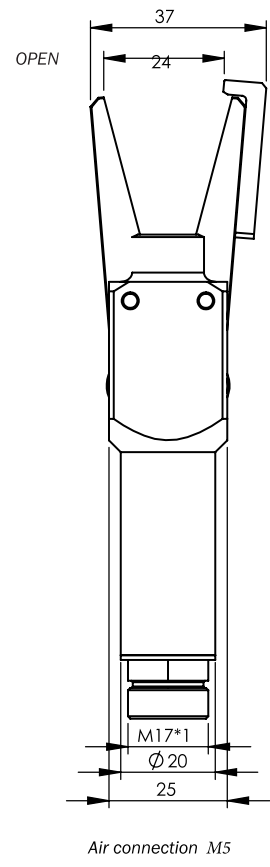
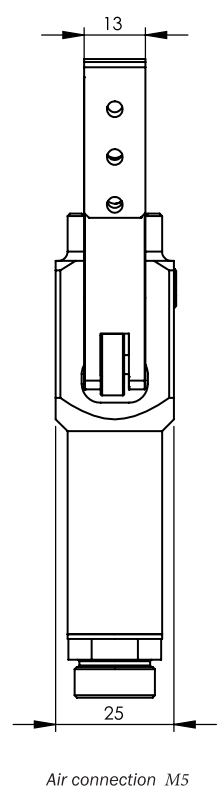
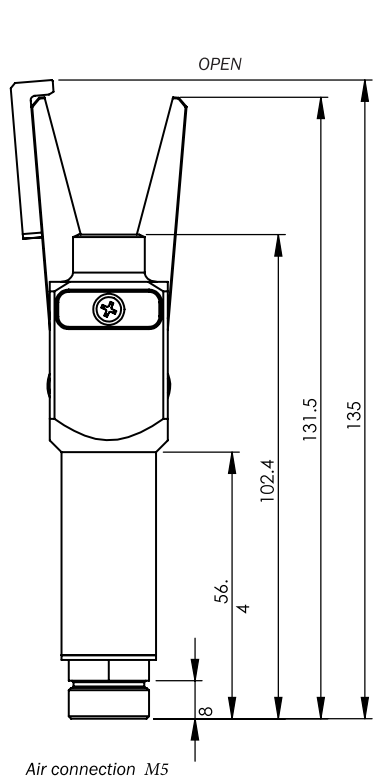
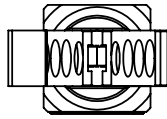




Piston bore: 16mm.  
 Aluminum jaws D-type  
 Single-action

Dimensions (mm)

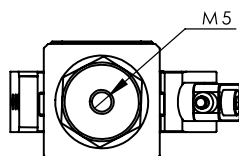
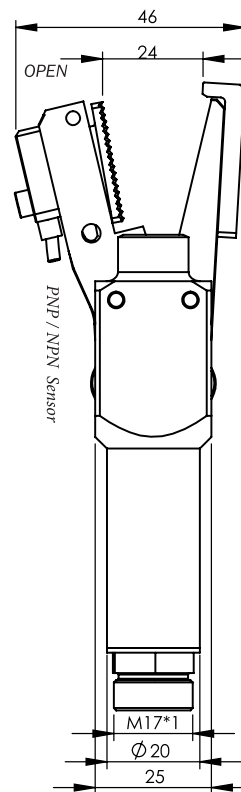
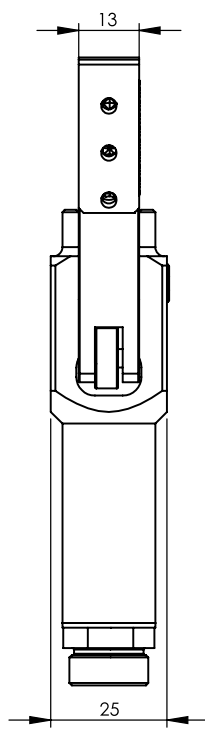
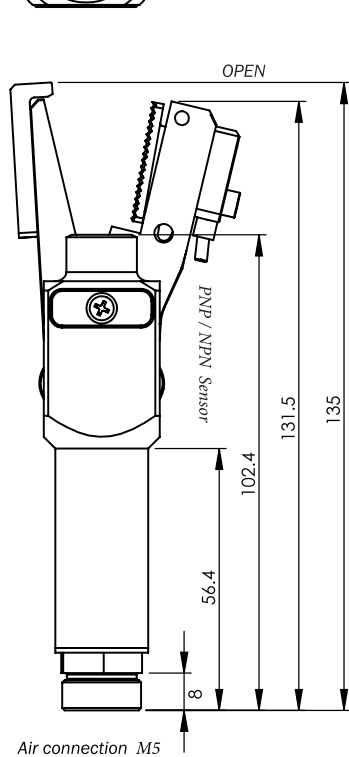
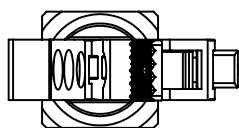
First Angle Projection



Piston bore: 16mm.  
 Aluminum jaws D-type  
 Single-action  
 Sensor on the jaw

Dimensions (mm)

First Angle Projection



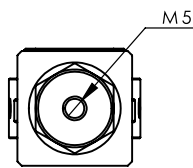
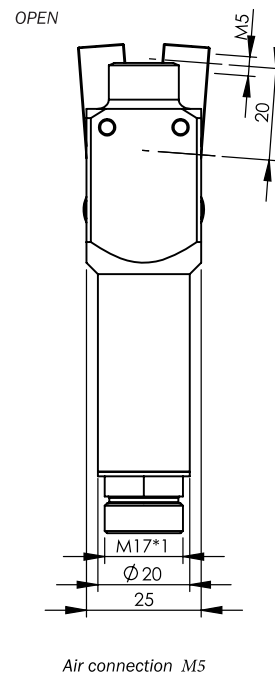
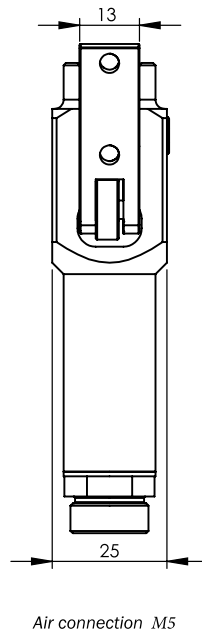
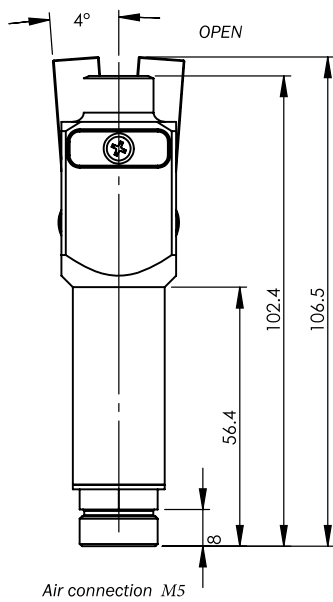
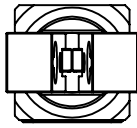
**NEW**



Piston bore: 16mm.  
 Aluminum jaws E-type  
 Single-action  
 Steel jaws

Dimensions (mm)

Fist Angle  
 Projection



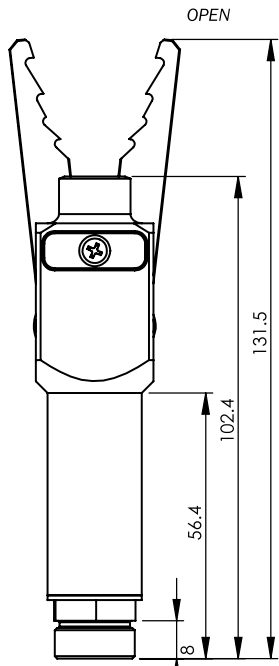
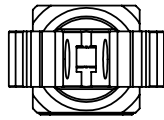
NEW



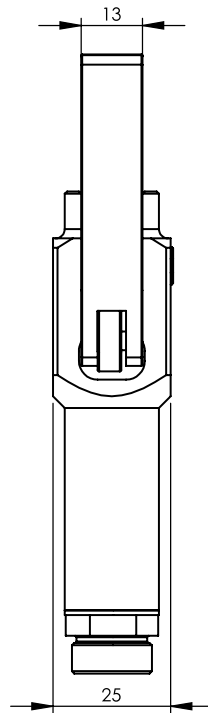
Piston bore: 16mm.  
 Aluminum jaws F-type  
 Single-action

Dimensions (mm)

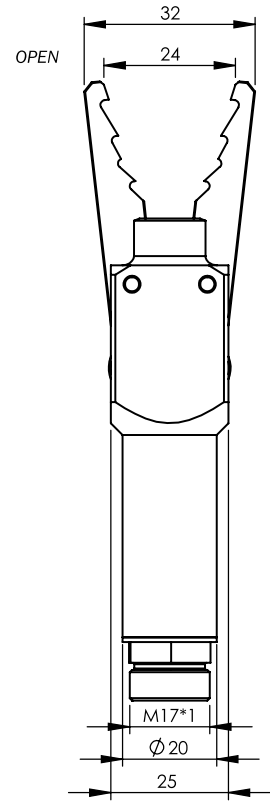
First Angle Projection



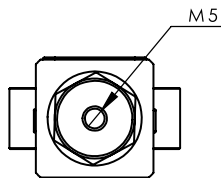
Air connection M5



Air connection M5



Air connection M5

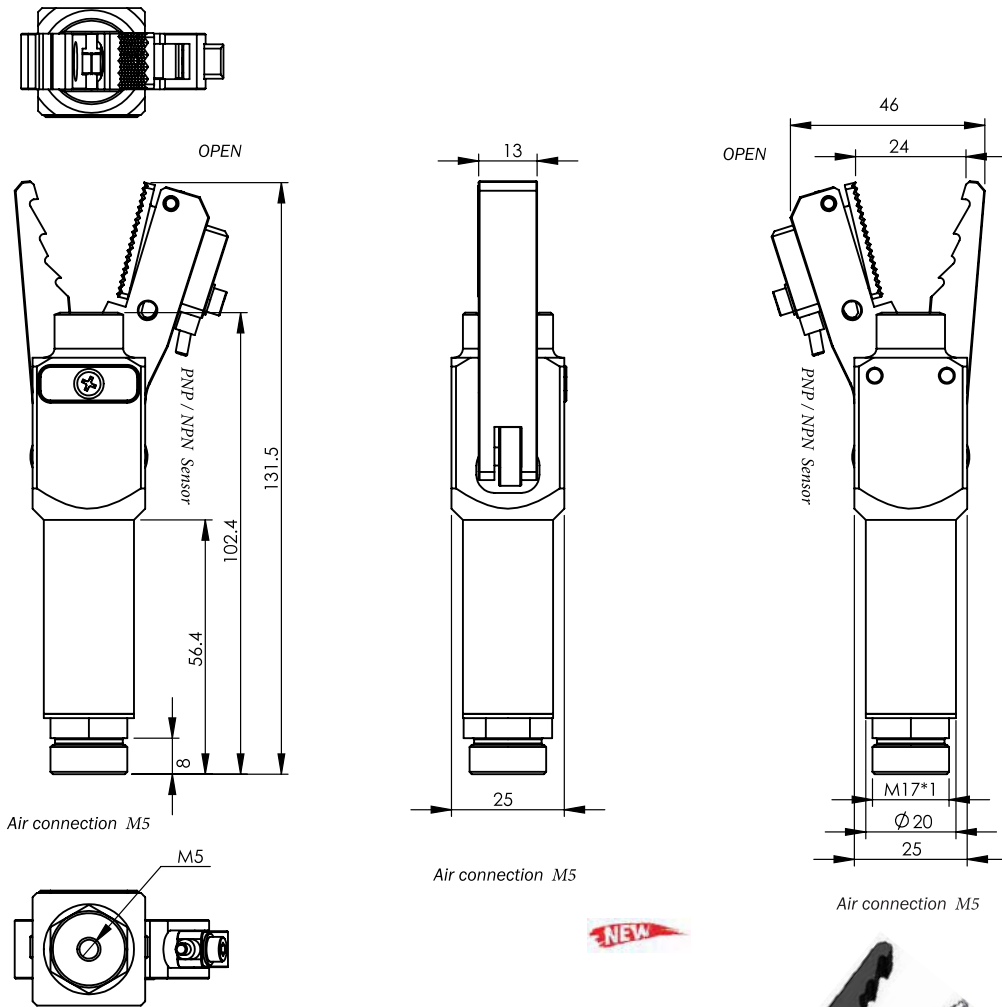
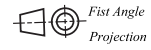


**NEW**



Piston bore: 16mm.  
 Aluminum jaws F-type  
 Single-action  
 Sensor on the jaw

Dimensions (mm)



NEW



FIGURE 521

Cylinder pushing  
Steel jaws A-type  
Double action

Dimensions (mm)

Fist Angle  
Projection

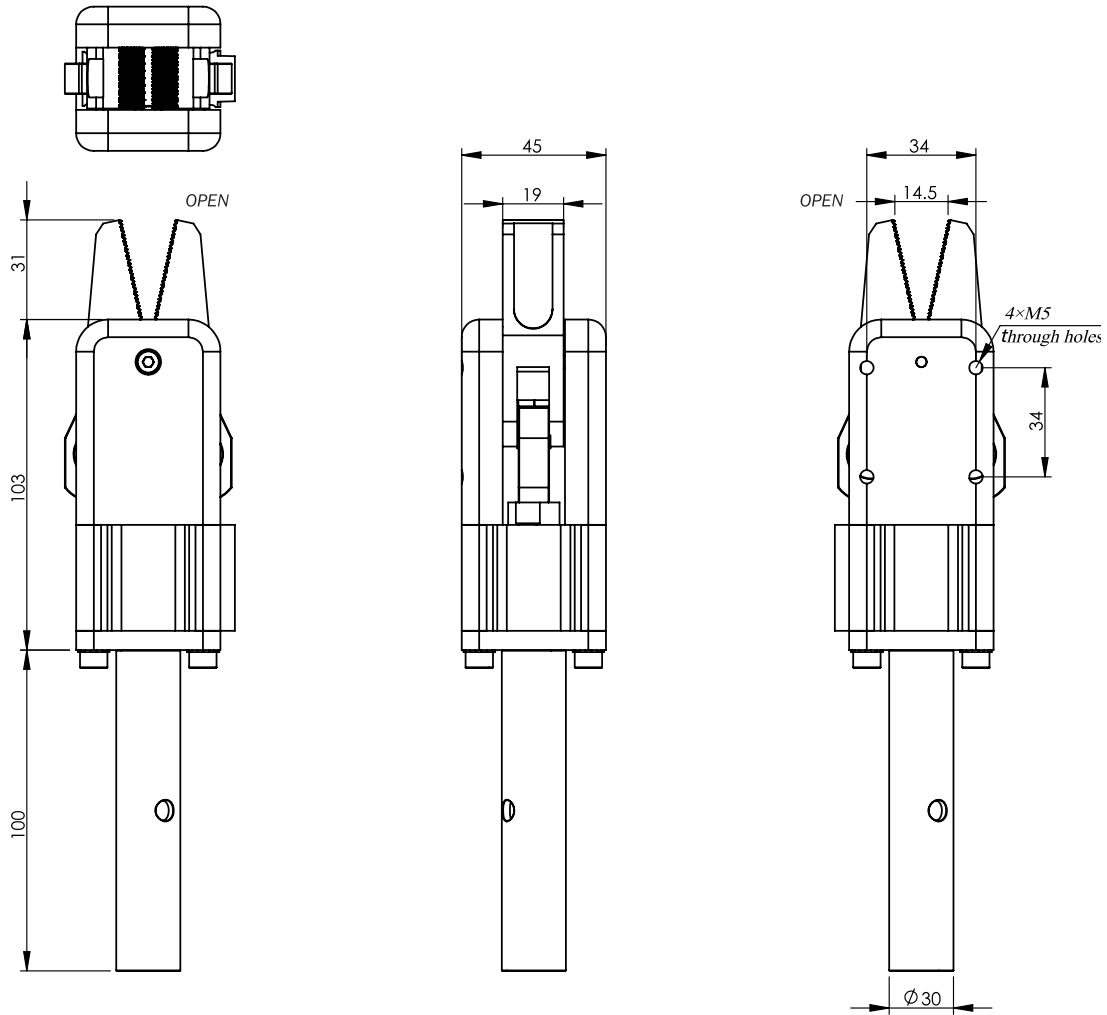
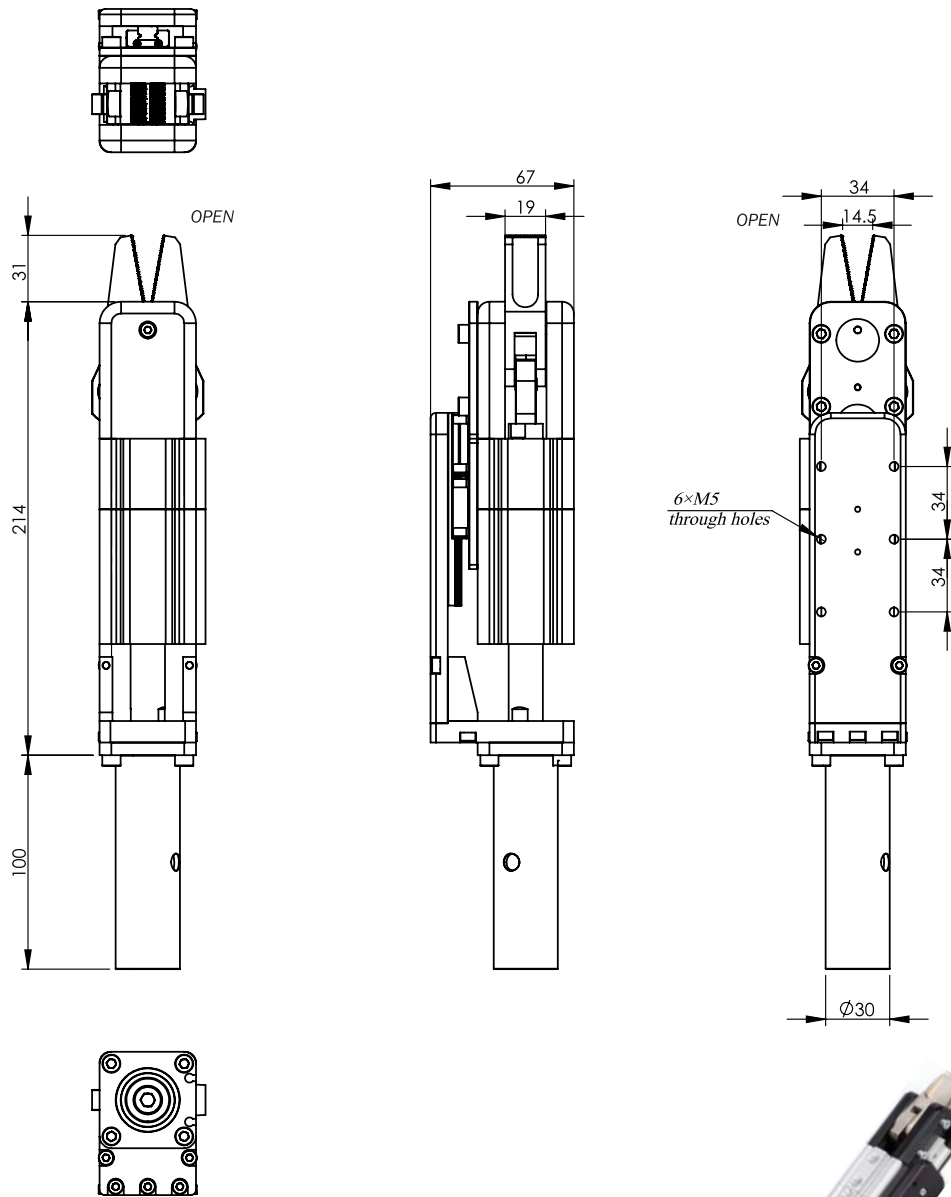


FIGURE 527-30

Cylinder pushing  
Steel jaws A-type  
Double action  
Stroke: 30mm

Dimensions (mm)

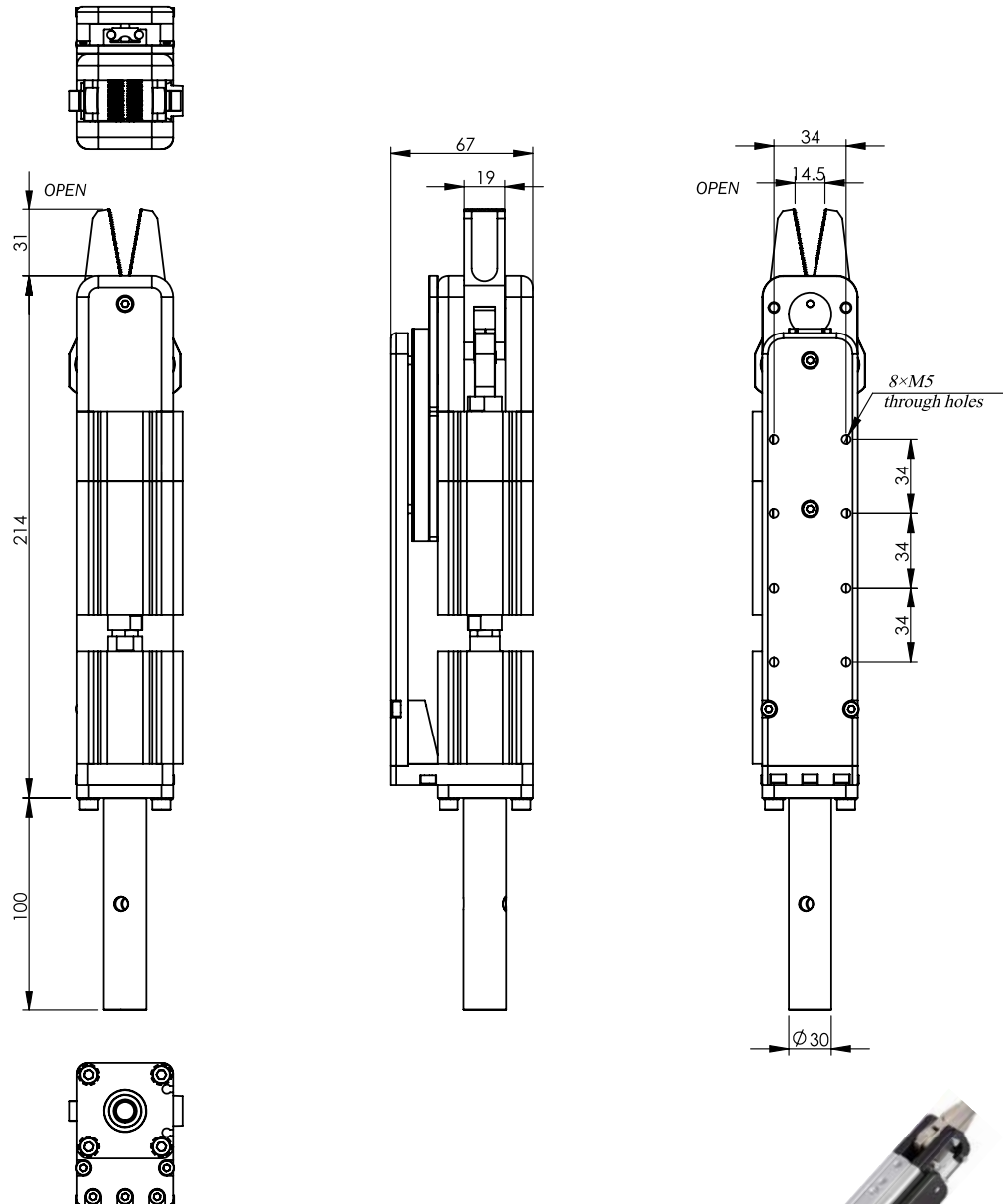
First Angle Projection



Cylinder pushing  
 Steel jaws A-type  
 Double action  
 Stroke: 30mm & 20mm

Dimensions (mm)

First Angle Projection



### Finger Gripper

FGSR - series



**FGSR14-35**    **FGSR14-90**    **FGSR14-95**    **FGSR14-95G**    **FGSR14-95L**    **FGSR14-95LG**  
**FGSR20-35**    **FGSR20-90**    **FGSR20-95**    **FGSR20-95G**    **FGSR20-95L**    **FGSR20-95LG**

Model	FGSR14-35	FGSR20-35	FGSR14-90	FGSR20-90	FGSR14-95	FGSR20-95	FGSR14-95G	FGSR20-95G	FGSR14-95L	FGSR20-95L	FGSR14-95LG	FGSR20-95LG
Medium	Filtered & Compressed Air											
Pressure Range	2.5 ~ 8 bar											
Temperature Range	5 ~ 60 degree											
Stroke / degree	35	35	90	90	95	95	95	95	95	95	95	95
Max Working Frequency	3Hz											
Cycle Air Consumption	0.4cm <sup>3</sup>	3.52cm <sup>3</sup>	1cm <sup>3</sup>	3.52cm <sup>3</sup>	1cm <sup>3</sup>	3.52cm <sup>3</sup>	1cm <sup>3</sup>	3.52cm <sup>3</sup>	1cm <sup>3</sup>	3.52cm <sup>3</sup>	1cm <sup>3</sup>	3.52cm <sup>3</sup>
Closing time without load	0.01s											
Closing gripping torque	26N/cm	100N/cm	19N/cm	70N/cm	19N/cm	70N/cm	19N/cm	70N/cm	19N/cm	70N/cm	19N/cm	70N/cm
Air Inlet	M5											
Weight / g	25	65	23	60	25	60	32	70	28	65	36	75

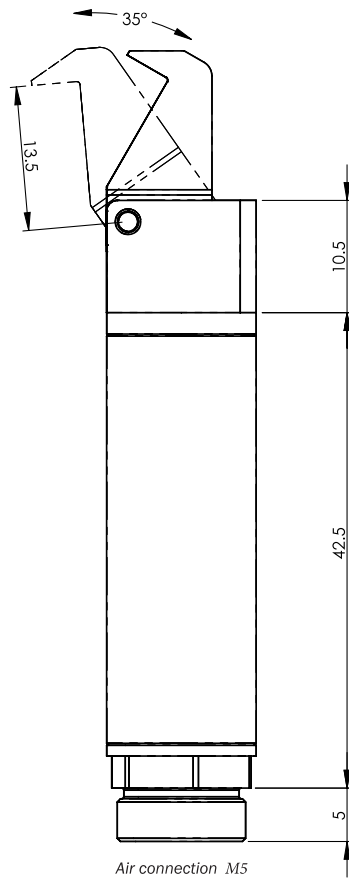


Model	FGSR20-95S	FGSR20-95SG	FGSR30-35	FGSR30-90	FGSR30-95	FGSR30-95G
Medium	Filtered & Compressed Air					
Pressure Range	2.5 ~ 8 bar					
Temperature Range	5 ~ 60 degree					
Stroke / degree	95	95	35	90	95	95
Max Working Frequency	3Hz					
Cycle Air Consumption	3.52cm <sup>3</sup>	3.52cm <sup>3</sup>	4.56cm <sup>3</sup>	4.56cm <sup>3</sup>	4.56cm <sup>3</sup>	4.56cm <sup>3</sup>
Closing time without load	0.01s					
Closing gripping torque	70N/cm	70N/cm	430N/cm	300N/cm	300N/cm	300N/cm
Air Inlet	M5	M5	G1/8	G1/8	G1/8	G1/8
Weight / g	92	100	206	185	185	200

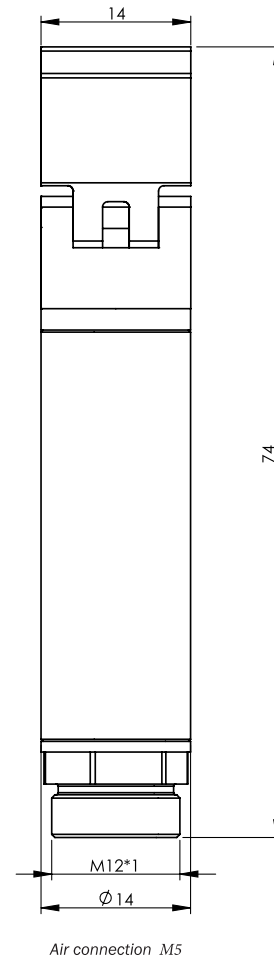
**FGSR14-35**

Piston bore: 10mm  
 Single action  
 Angle degree: 35°

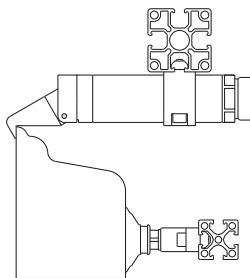
Dimensions (mm)



First Angle Projection



Application example

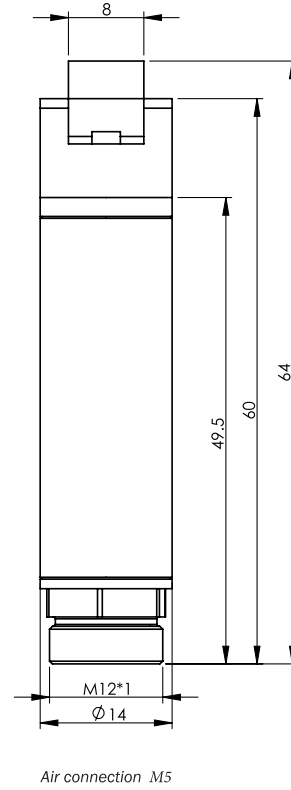
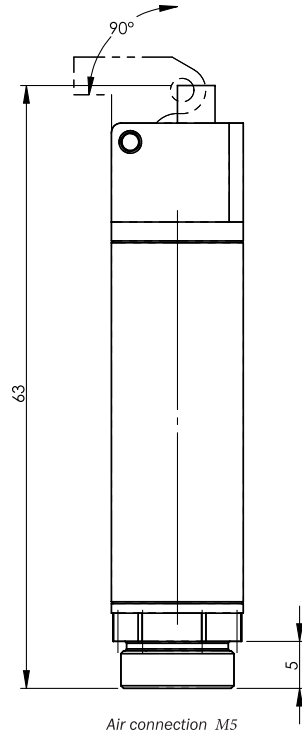


**FGSR14-90**

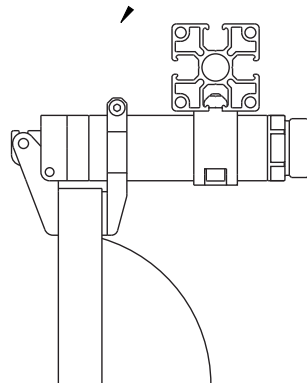
Piston bore: 10mm  
 Single action  
 Angle degree: 90°

Dimensions (mm)

First Angle Projection



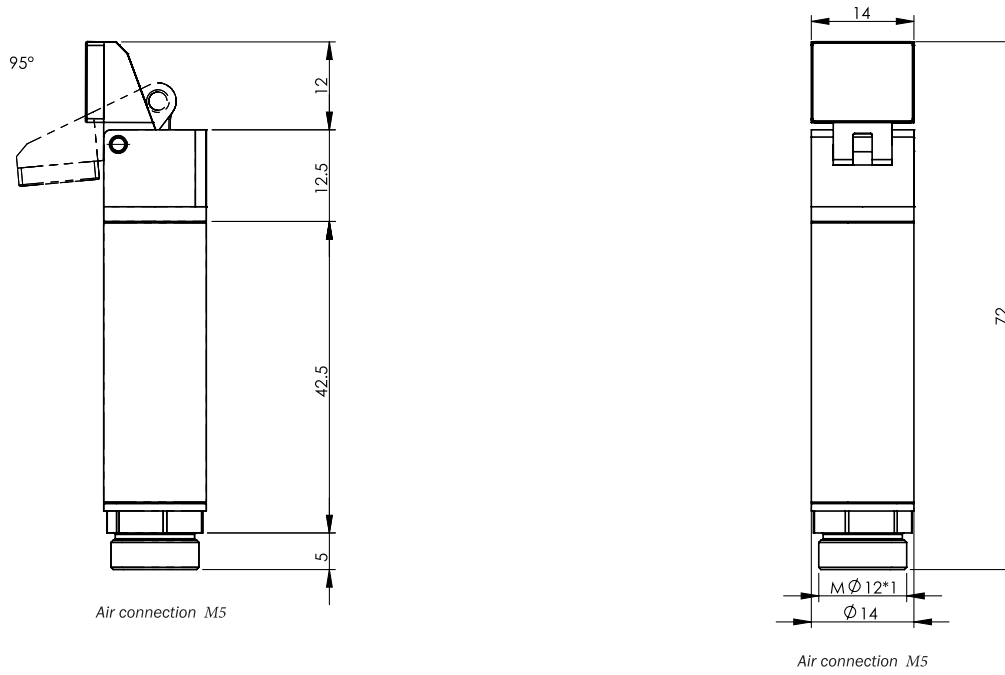
*Application example*



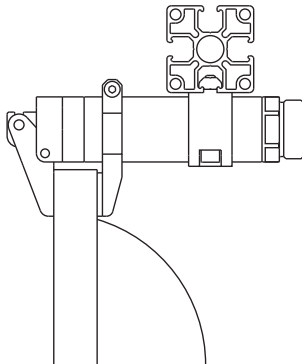
**FGSR14-95**

Piston bore: 10mm  
 Single action  
 Angle degree: 95°

Dimensions (mm)



*Application example*

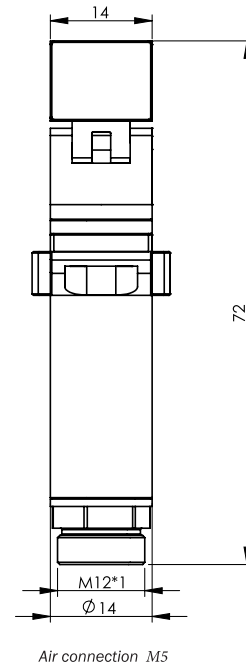
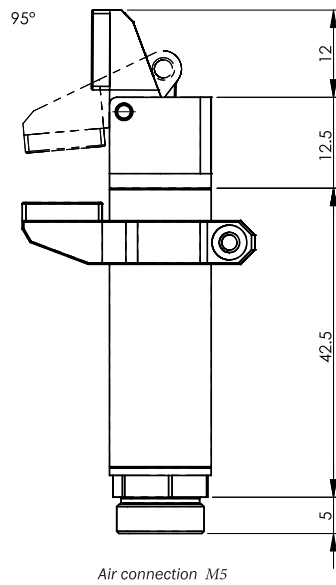


**FGSR14-95G**

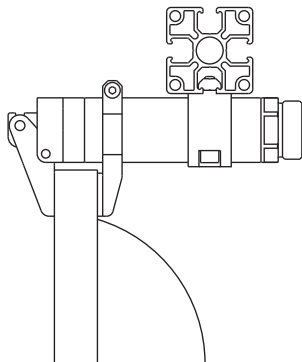
Piston bore: 10mm  
 Single action  
 Angle degree: 95°

Dimensions (mm)

First Angle Projection



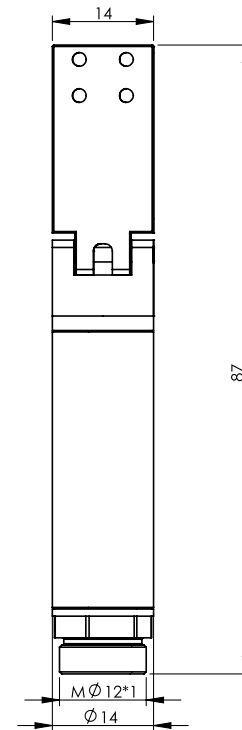
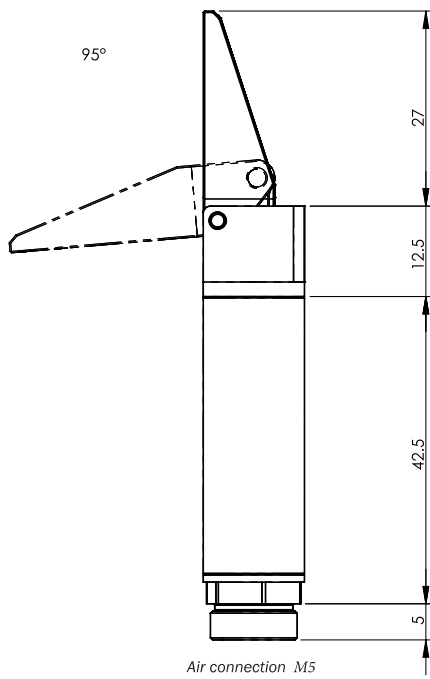
*Application example*



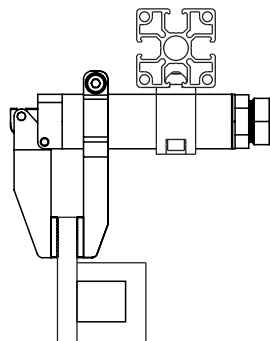
**FGSR14-95L**

Piston bore: 10mm  
 Single action  
 Angle degree: 95°

*Dimensions (mm)*



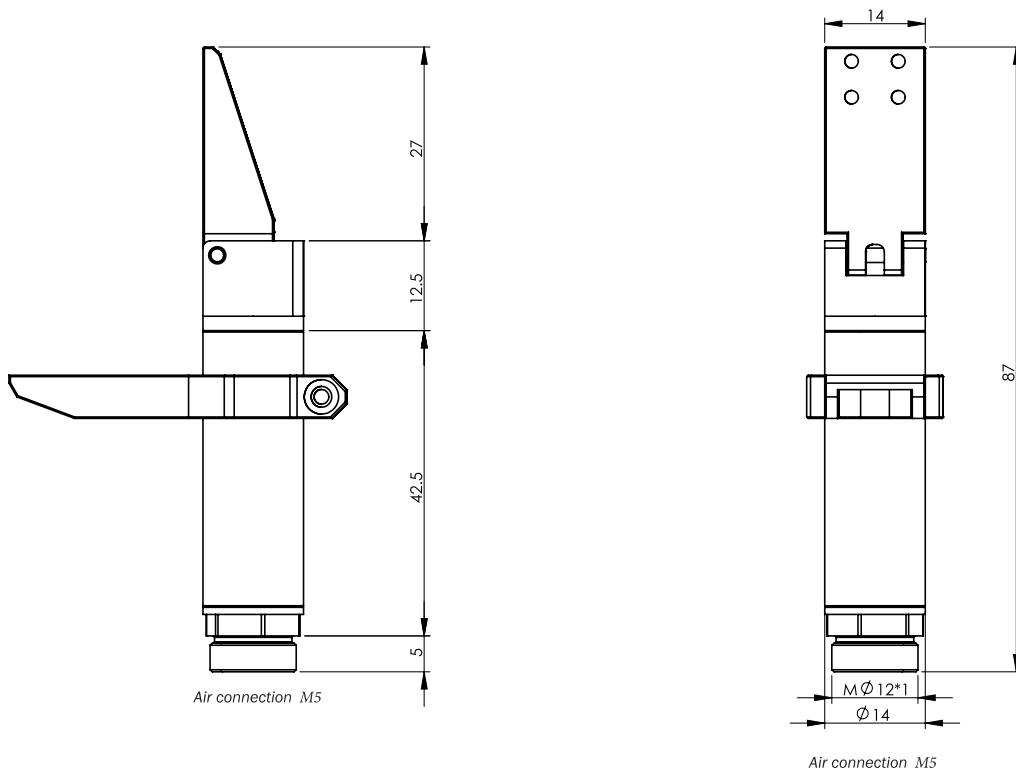
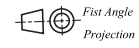
*Application example*



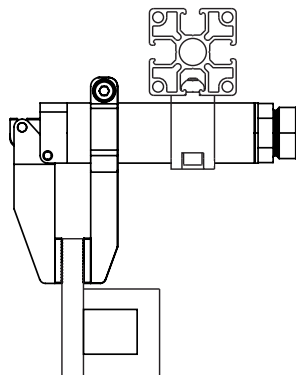
### FGSR14-95LG

Piston bore: 10mm  
Single action  
Angle degree: 95°

Dimensions (mm)



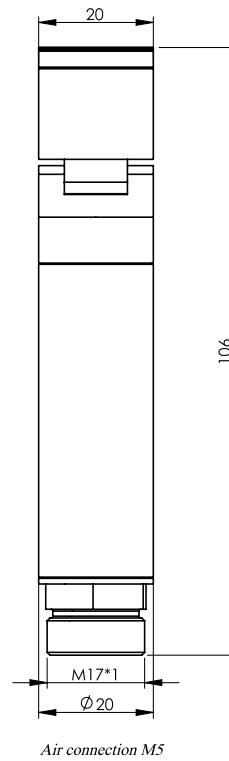
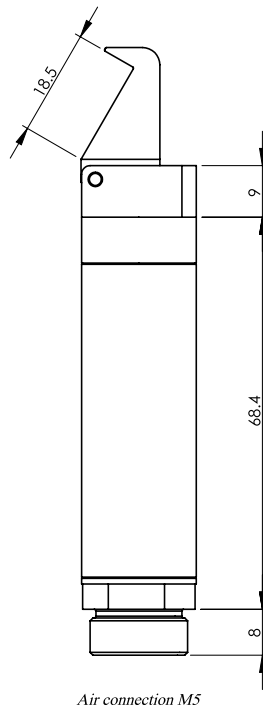
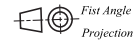
### Application example



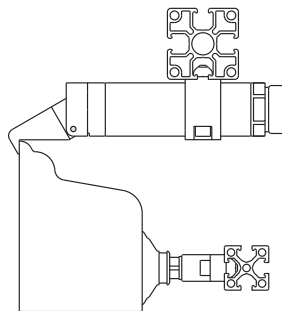
**FGSR20-35**

Piston bore: 16mm  
 Single action  
 Angle degree: 35°

Dimensions (mm)



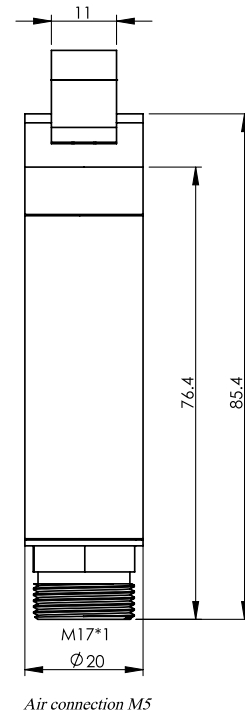
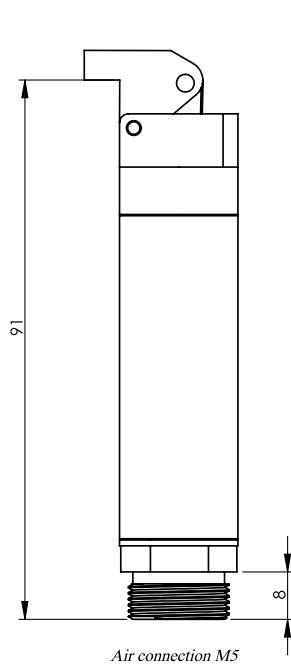
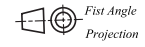
*Application example*



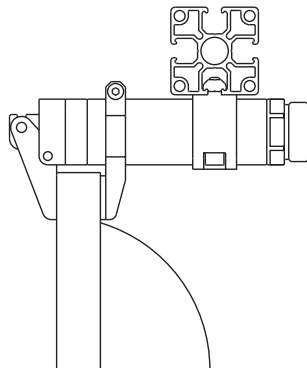
**FGSR20-90**

Piston bore: 16mm  
 Single action  
 Angle degree: 90°

Dimensions (mm)



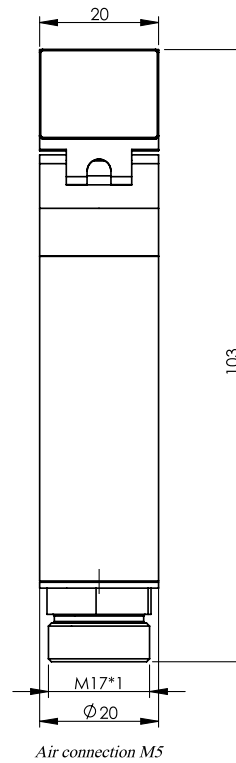
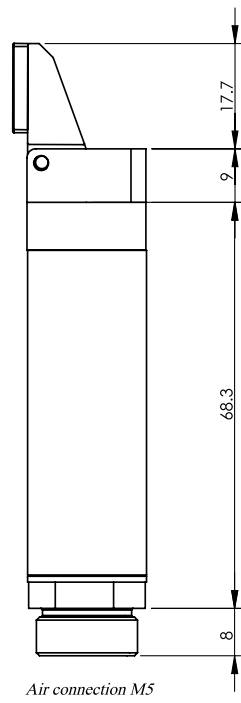
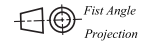
**Application example**



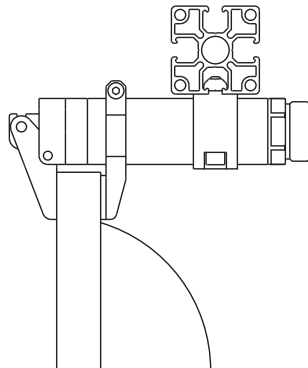
### FGSR20-95

Piston bore: 16mm  
Single action  
Angle degree: 95°

Dimensions (mm)



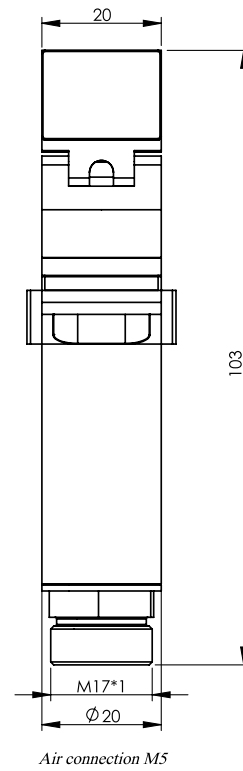
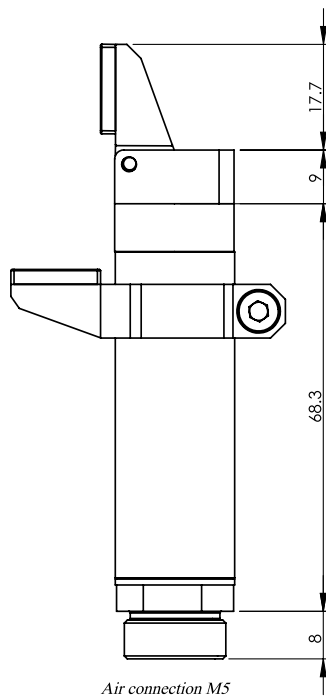
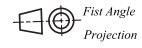
### Application example



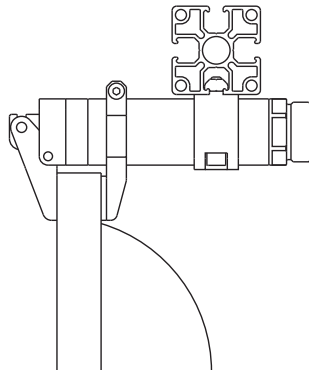
**FGSR20-95G**

Piston bore: 16mm  
 Single action  
 Angle degree: 95°

Dimensions (mm)



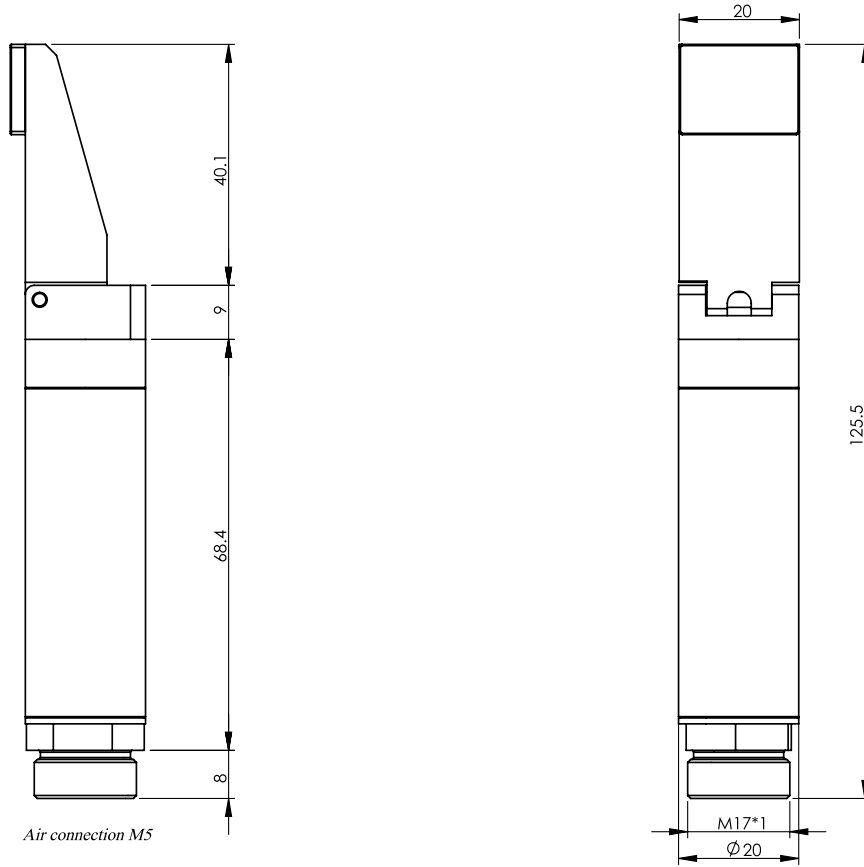
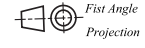
**Application example**



**FGSR20-95L**

Piston bore: 16mm  
 Single action  
 Angle degree: 95°

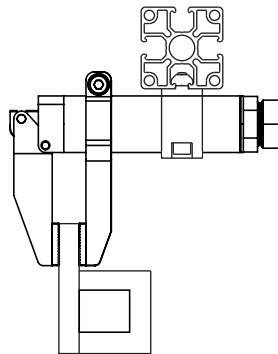
Dimensions (mm)



Air connection M5

Air connection M5

Application example

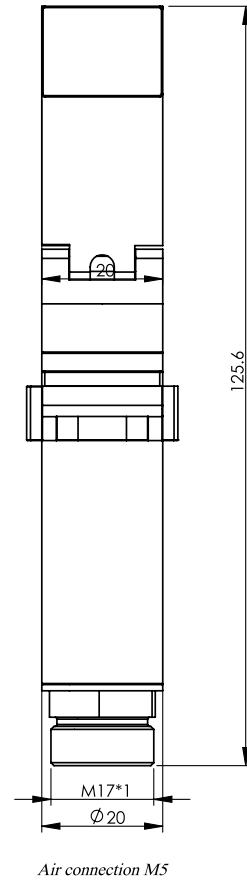
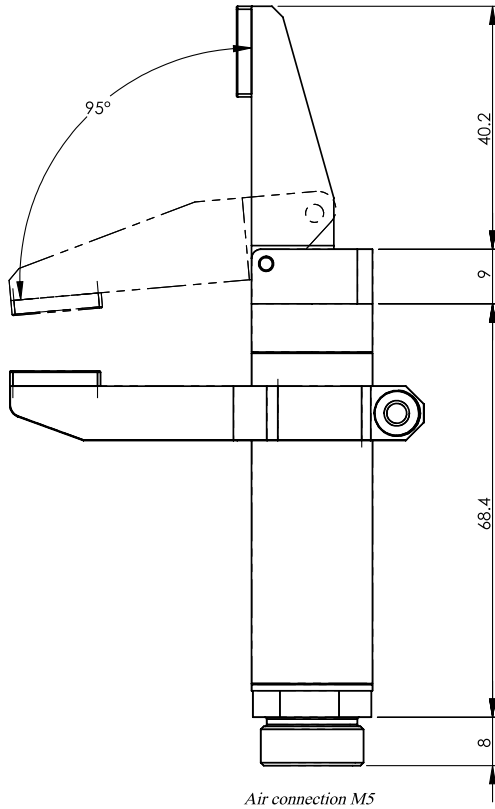


**FGSR20-95LG**

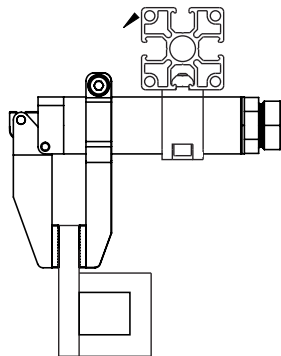
Piston bore: 16mm  
 Single action  
 Angle degree: 95°

Dimensions (mm)

Fist Angle  
 Projection



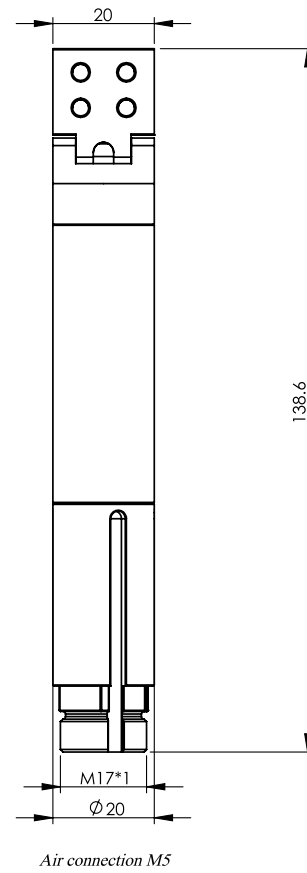
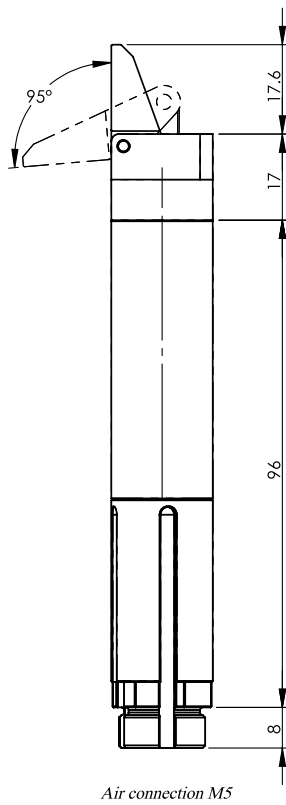
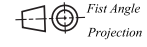
Application example



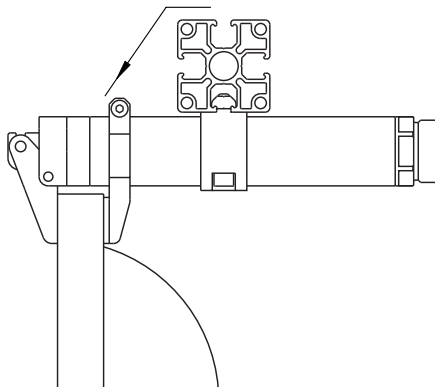
### FGSR20-95S

Piston bore: 16mm  
Single action  
Angle degree: 95°

Dimensions (mm)



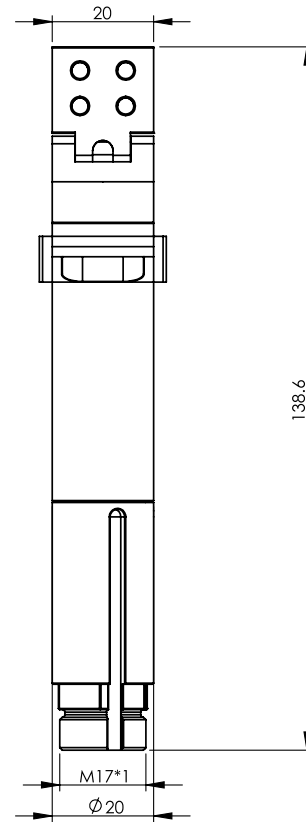
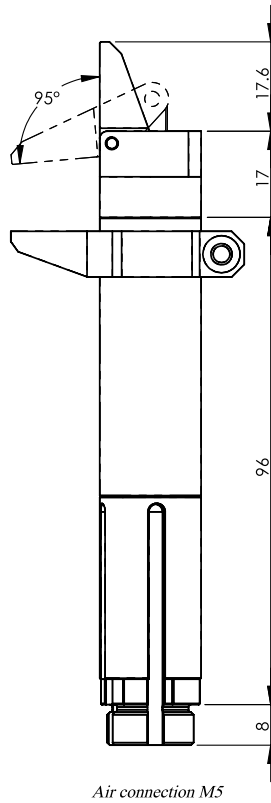
Application example



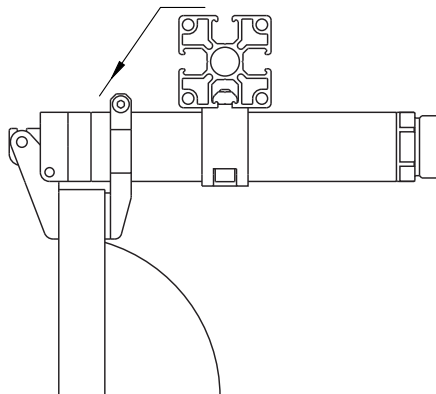
**FGSR20-95SG**

Piston bore: 16mm  
 Single action  
 Angle degree: 95°

Dimensions (mm)



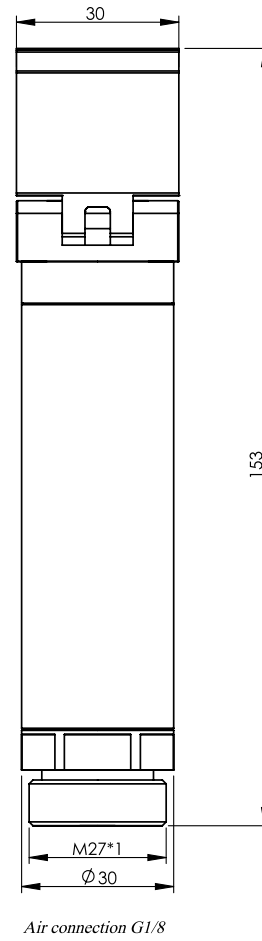
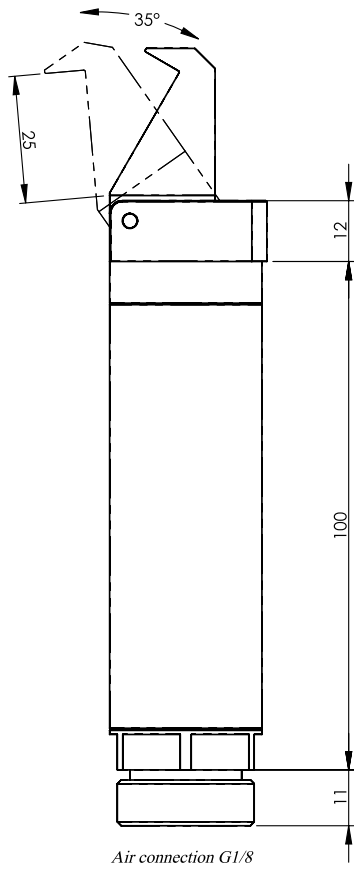
**Application example**



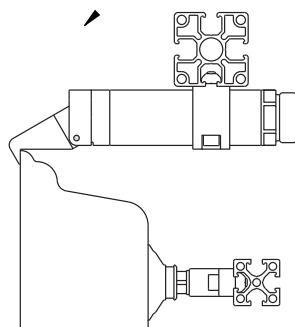
**FGSR30-35**

Piston bore: 25mm  
 Single action  
 Angle degree: 35°

Dimensions (mm)



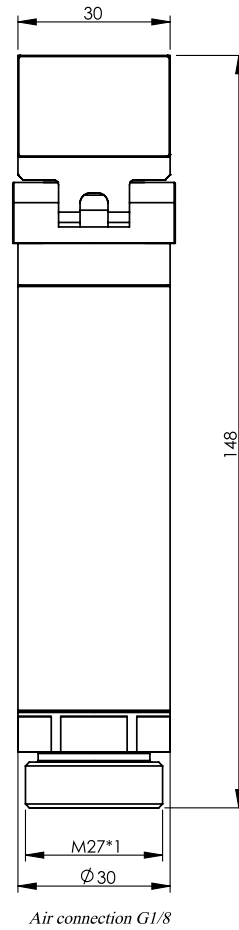
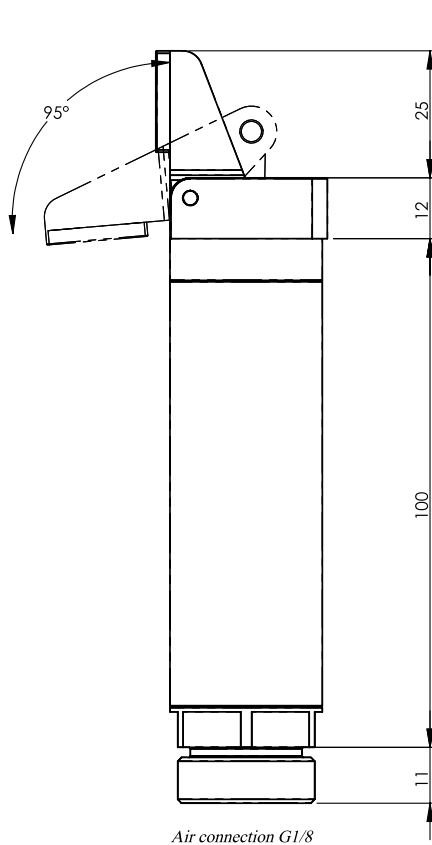
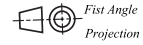
*Application example*



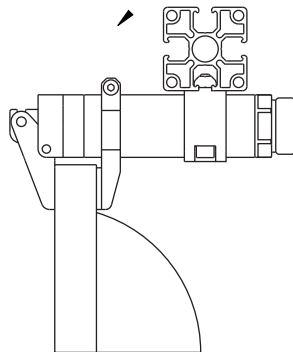
**FGSR30-95**

Piston bore: 25mm  
 Single action  
 Angle degree: 95°

Dimensions (mm)



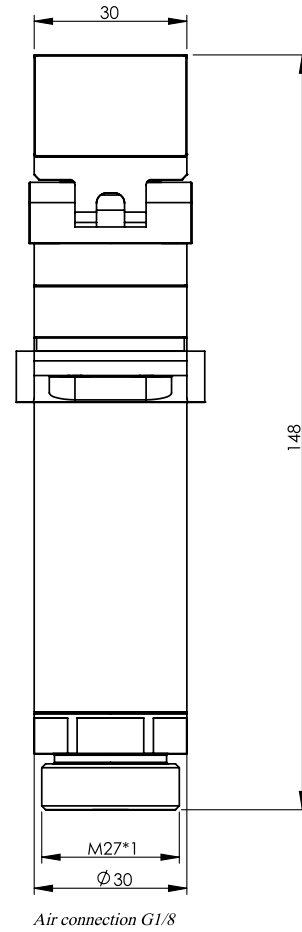
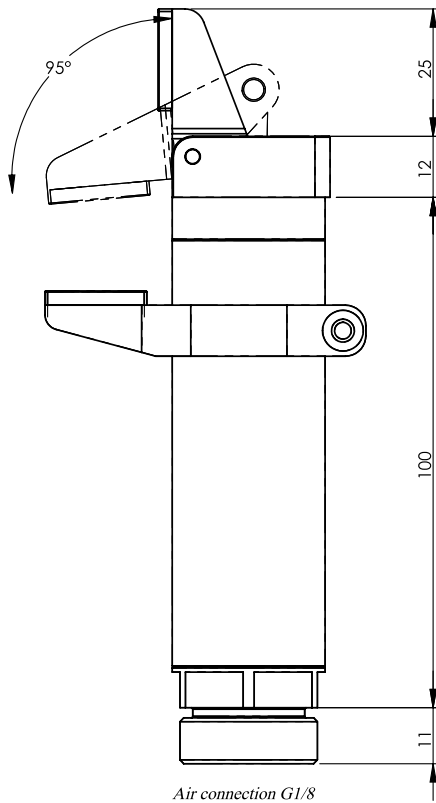
**Application example**



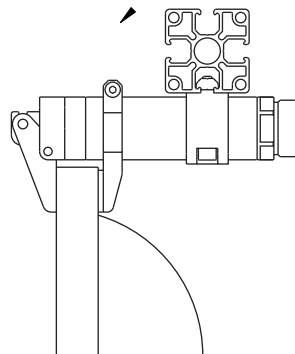
**FGSR30-95G**

Piston bore: 25mm  
 Single action  
 Angle degree: 95°

Dimensions (mm)



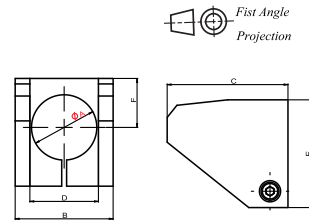
**Application example**



**Finger Gripper Fitting**

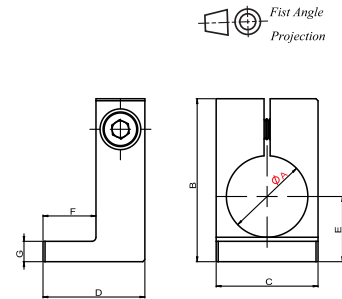
Dimensions (mm)

Model	A	B	C	D	E	F	Weight
FGS1-20	∅20	30	37	21	33	15	20g
FGS1-30	∅30	45	65	32	44	20	60g



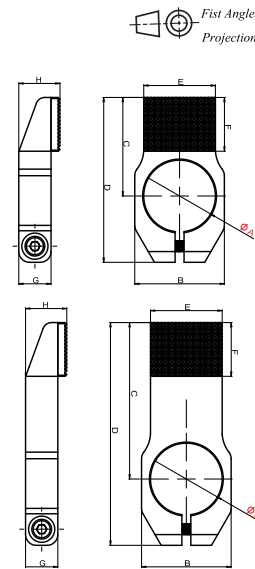
Dimensions (mm)

Model	A	B	C	D	E	F	G	Weight
FGS2-14	∅14	24	19	12	11	6	3.5	5g
FGS2-20	∅20	35	25	25	16	13	5	14g
FGS2-30	∅30	45	35	25	21	13	5.5	23g



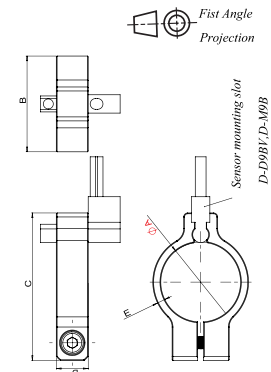
Dimensions (mm)

Model	A	B	C	D	E	F	G	H	Weight
FGS3-14	∅14	19	14	32	19	10	6	11	6g
FGS3-20	∅20	25	20	43.5	27.5	9.5	7	15	12g
FGS3-30	∅30	37	30	63	40	12	9	20	30g
FGS3-14L	∅14	19	35	47	14			8.5	15g
FGS3-20L	∅20	25	50	68.5	20			9.5	25g



Dimensions (mm)

Model	A	B	C	D	E	Weight
FGS4-14	∅14	18	30	8	2	14g
FGS4-20	∅20	24	37	8	2	17g
FGS4-30	∅30	34	47	8	2	25g

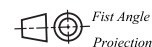


Single / Double acting

Long cycle life & stable & reliability

Magnetic Sensor option with flexible mounting ways

Dimensions (mm)

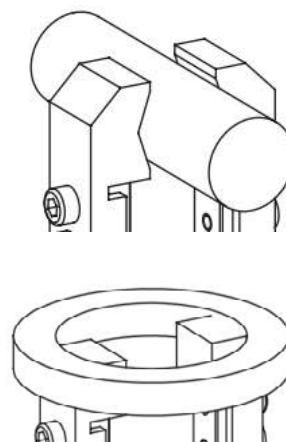


Model	Action direction		Bore / mm	Pressure range / MPa	Temperature arange / °C	Repetition accuracy / mm	Frequency Max. / minute	Clamping force / N		Stroke / mm	Air inlet mm	Weight / g
	Single	Double						External	Internal			
FMHZ2-10S	S		10	0.35 ~ 7	(-10 ~ 60°C)	(-0.01 ~ 0.01)	180	11	17	4	M3*0.5	53
FMHZ2-10D		D	10	0.2 ~ 0.7	(-10 ~ 60°C)	(-0.01 ~ 0.01)	180	11	17	4	M3*0.5	52.5
FMHZ2-16S	S		16	0.25 ~ 7	(-10 ~ 60°C)	(-0.01 ~ 0.01)	180	34	45	6	M5*0.8	123
FMHZ2-16D		D	16	0.1 ~ 0.7	(-10 ~ 60°C)	(-0.01 ~ 0.01)	180	34	45	6	M5*0.8	120
FMHZ2-20S	S		20	0.25 ~ 7	(-10 ~ 60°C)	(-0.01 ~ 0.01)	180	42	66	10	M5*0.8	227
FMHZ2-20D		D	20	0.1 ~ 0.7	(-10 ~ 60°C)	(-0.01 ~ 0.01)	180	42	66	10	M5*0.8	225
FMHZ2-25S	S		25	0.25 ~ 7	(-10 ~ 60°C)	(-0.01 ~ 0.01)	180	65	104	14	M5*0.8	309
FMHZ2-25D		D	25	0.1 ~ 0.7	(-10 ~ 60°C)	(-0.01 ~ 0.01)	180	65	104	14	M5*0.8	314
FMHZ2-32S	S		32	0.25 ~ 7	(-10 ~ 60°C)	(-0.02 ~ 0.02)	60	158	193	22	M5*0.8	415
FMHZ2-32D		D	32	0.1 ~ 0.7	(-10 ~ 60°C)	(-0.02 ~ 0.02)	60	158	193	22	M5*0.8	410
FMHZ2-40S	S		40	0.25 ~ 7	(-10 ~ 60°C)	(-0.02 ~ 0.02)	60	254	318	30	M5*0.8	543
FMHZ2-40D		D	40	0.1 ~ 0.7	(-10 ~ 60°C)	(-0.02 ~ 0.02)	60	254	318	30	M5*0.8	537
Medium		Filtered & Compressed Air										

Dimensions (mm)



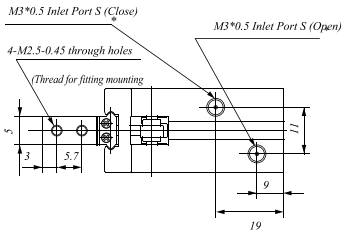
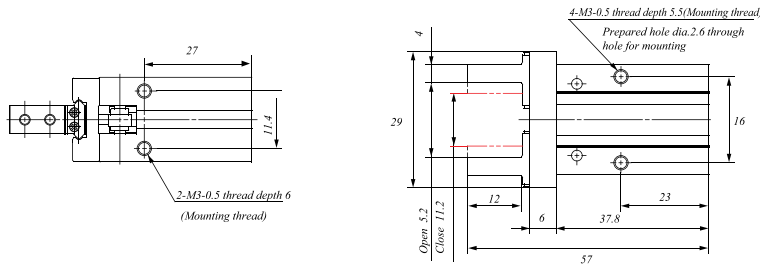
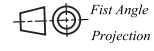
Application example



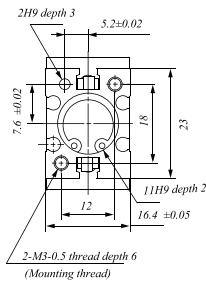
**Parallel Gripper**

**FMHZ2 - 10 S / D**

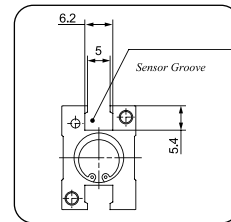
Dimensions (mm)



\* For single acting, the port on one side is a breathing hole



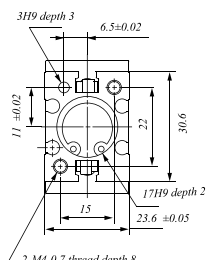
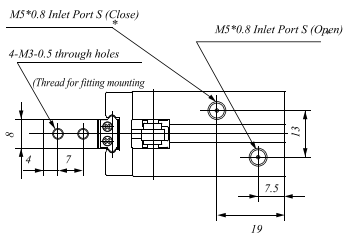
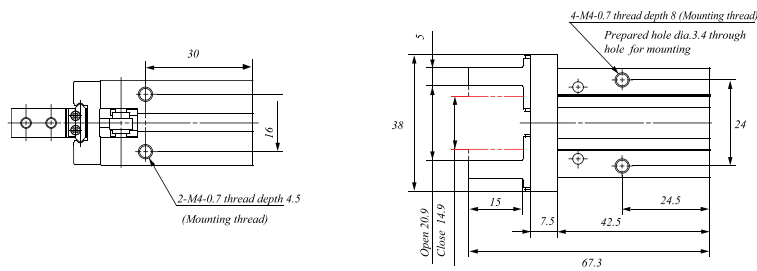
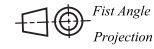
GMHZ2-10 S / D Sensor Groove Data



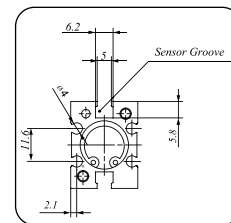
\* When using Magnetic switches, through hole mounting is not possible.

**FMHZ2 - 16 S / D**

Dimensions (mm)

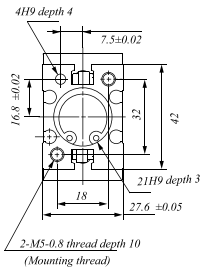
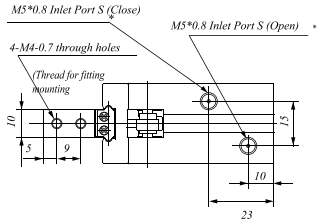
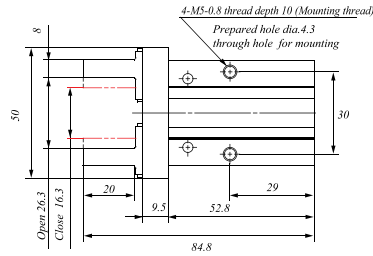
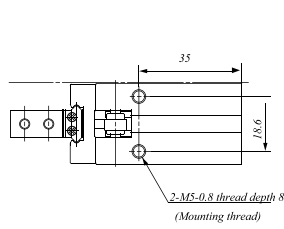
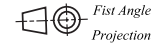


GMHZ2-16 S / D Sensor Groove Data

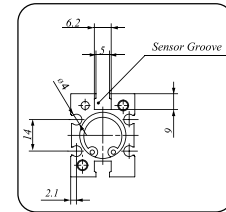


**FMHZ2 - 20 S / D**

Dimensions (mm)



GMHZ2-20 S / D Sensor Groove Data

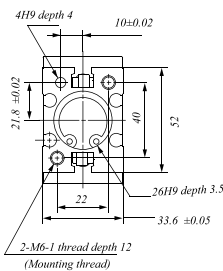
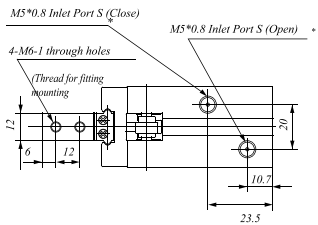
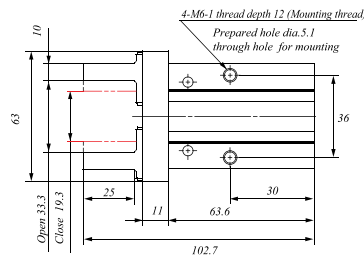
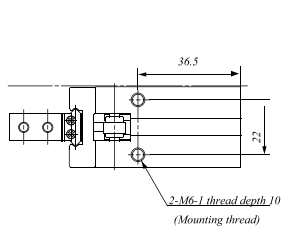
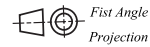


\* For single acting, the port on one side is a breathing hole

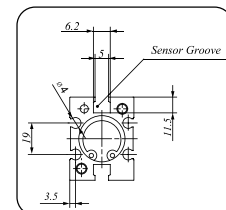
\* When using Magnetic switches, through hole mounting is not possible.

**FMHZ2 - 25 S / D**

Dimensions (mm)



GMHZ2-25 S / D Sensor Groove Data

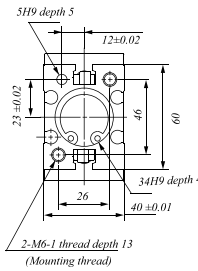
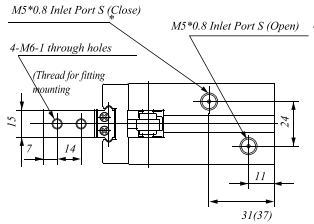
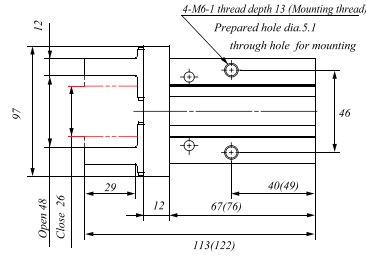
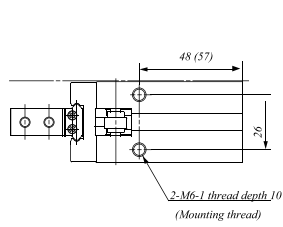
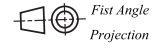


\* For single acting, the port on one side is a breathing hole

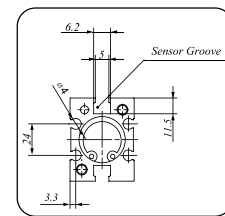
\* When using Magnetic switches, through hole mounting is not possible.

**FMHZ2 - 32 S / D**

Dimensions (mm)



GMHZ2-32 S / D Sensor Groove Data

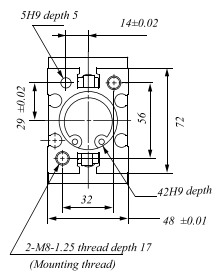
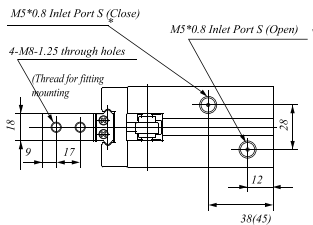
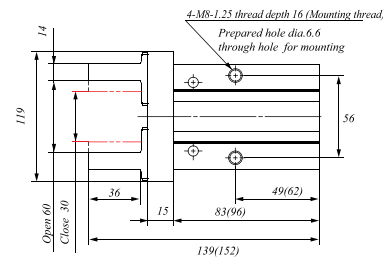
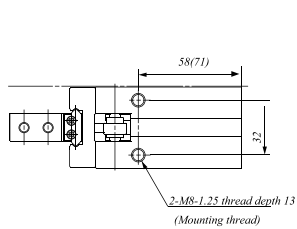
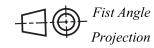


\* For single acting, the port on one side is a breathing hole

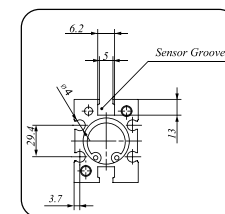
\* When using Magnetic switches, through hole mounting is not possible.

**FMHZ2 - 40 S / D**

Dimensions (mm)



GMHZ2-40 S / D Sensor Groove Data



\* For single acting, the port on one side is a breathing hole

\* When using Magnetic switches, through hole mounting is not possible.

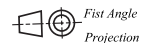
### Square Quick Changer (Manual)

FGSS- series

Easy replace of the EOAT on the robot

Two parts (robot side & gripper side) are supplied separately

Loading capability option: 4, 10, 20, 40 KGS



Model	FGSS-R60	FGSS-G60	FGSS-R100	FGSS-G100	FGSS-R160	FGSS-G160	FGSS-R250	FGSS-G250
Robot Side quick changer	FGSS-R60		FGSS-R100		FGSS-R160		FGSS-R250	
Gripper side quick changer		FGSS-G60		FGSS-G100		FGSS-G160		FGSS-G250
Loading capability /KGS	4	4	10	10	20	20	40	40
Weight / g	146	78	620	270	1650	670	3720	1600

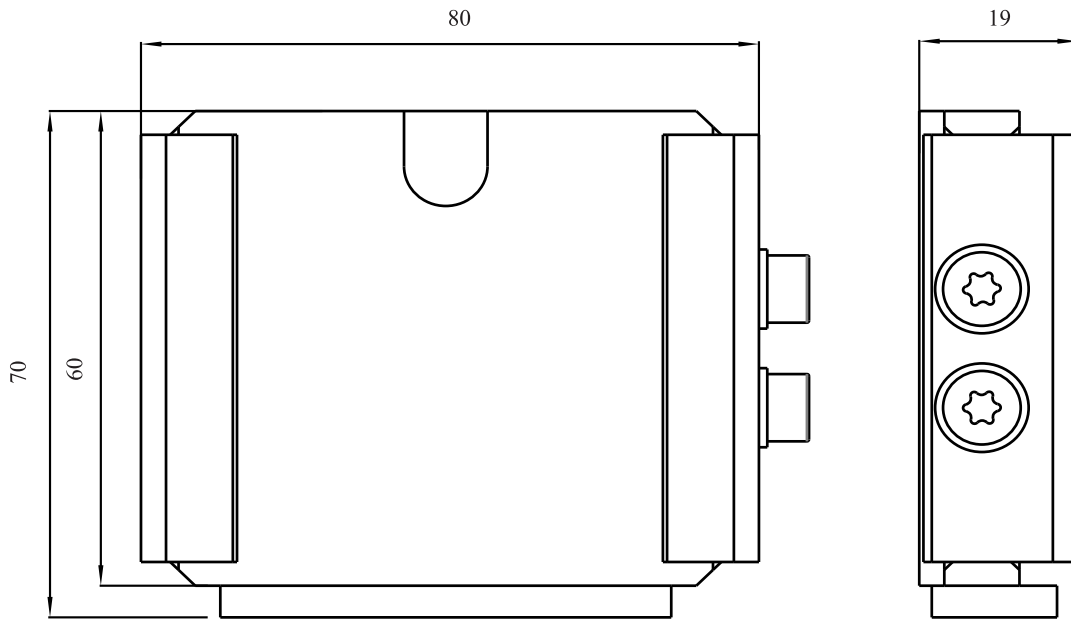
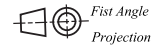
### Dimensions (mm)



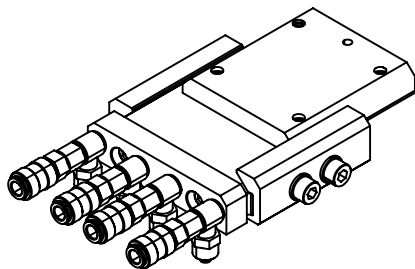
Square Quick Changer ( Manual )

FGSS-R60 Robot side

Dimensions (mm)



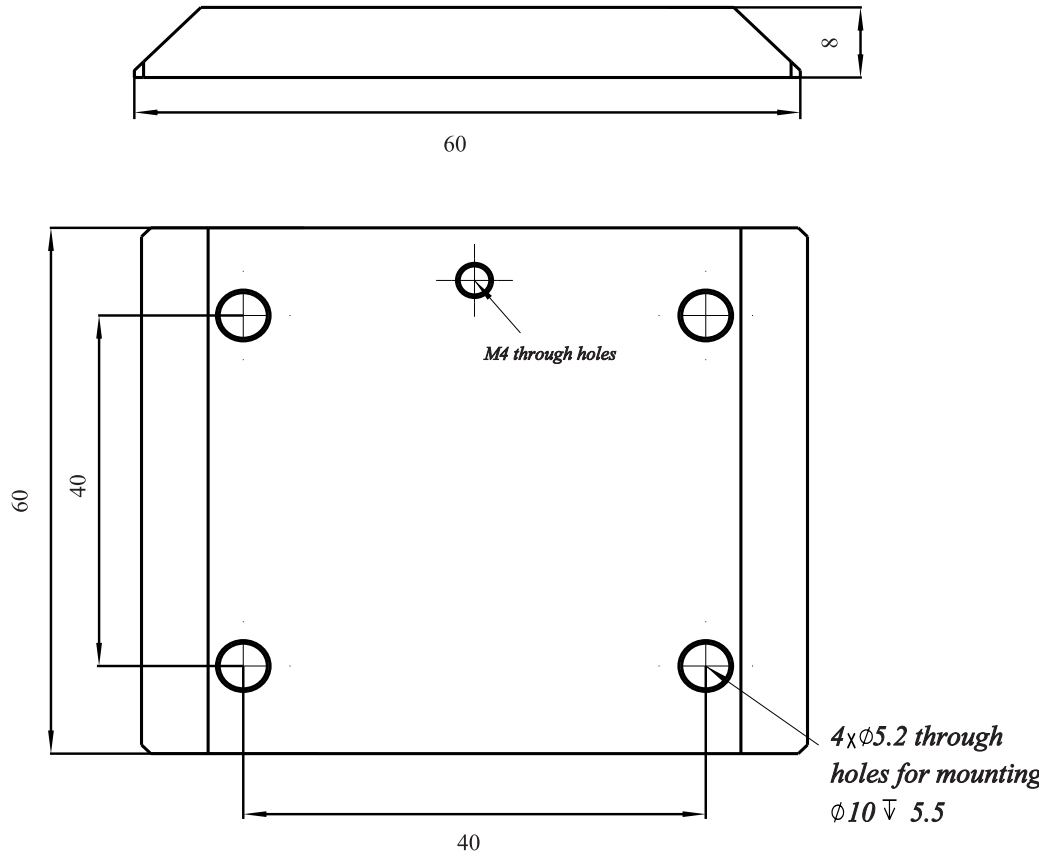
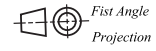
Application example



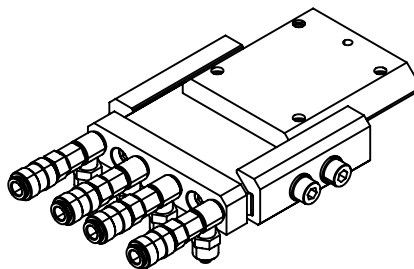
Square Quick Changer ( Manual )

FGSS-G60 Gripper side

Dimensions (mm)



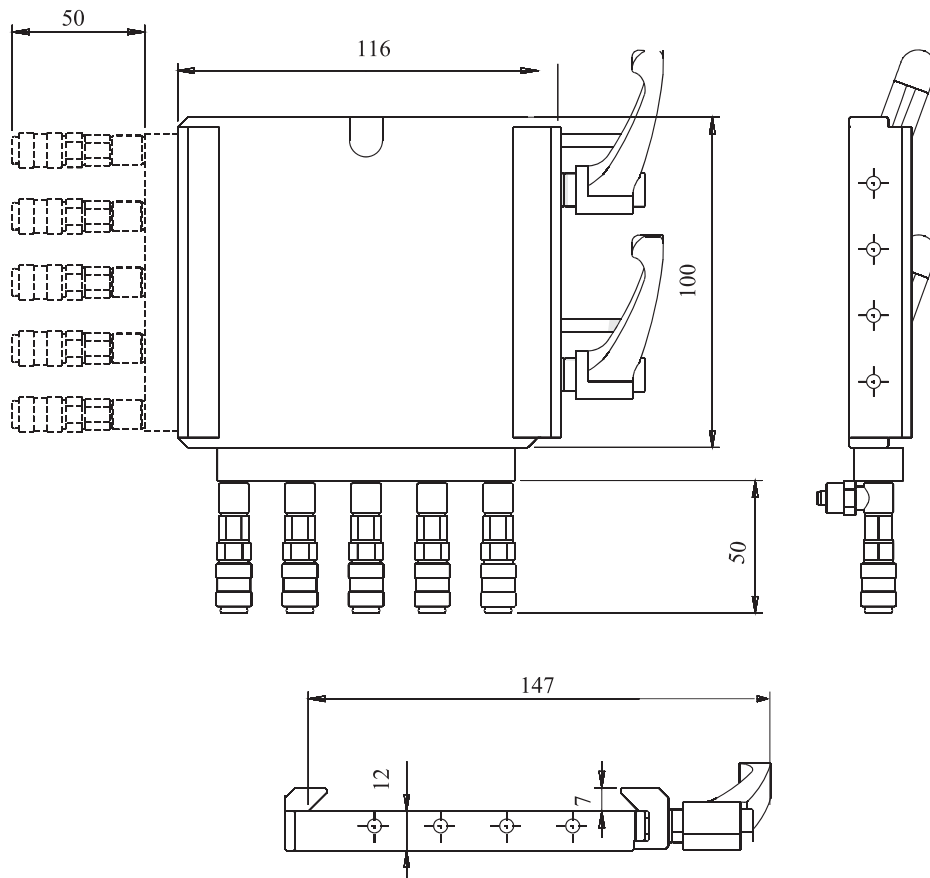
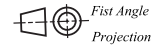
Application example



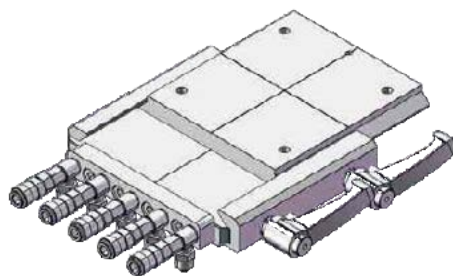
Square Quick Changer ( Manual )

FGSS-R100 Robot side

Dimensions (mm)

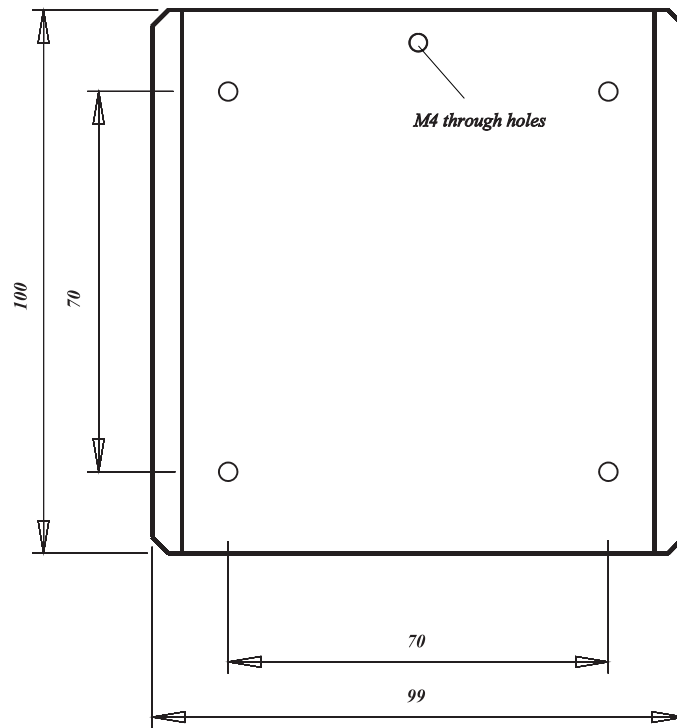
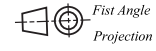


Application example

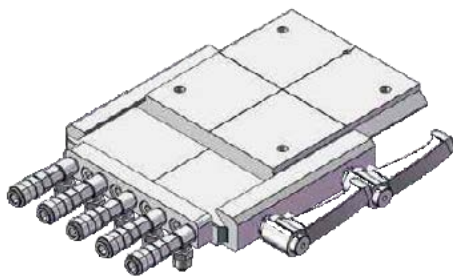


FGSS-G100 Gripper side

Dimensions (mm)



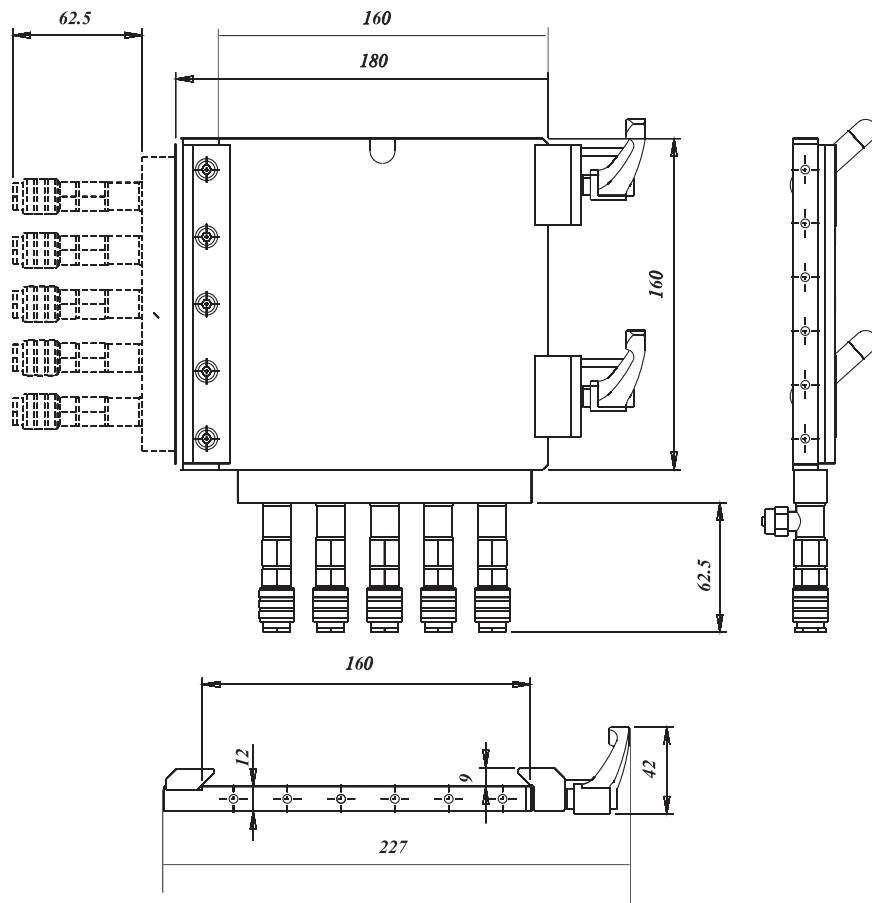
Application example



Square Quick Changer (Manual)

FGSS-R160 Robot side

Dimensions (mm)

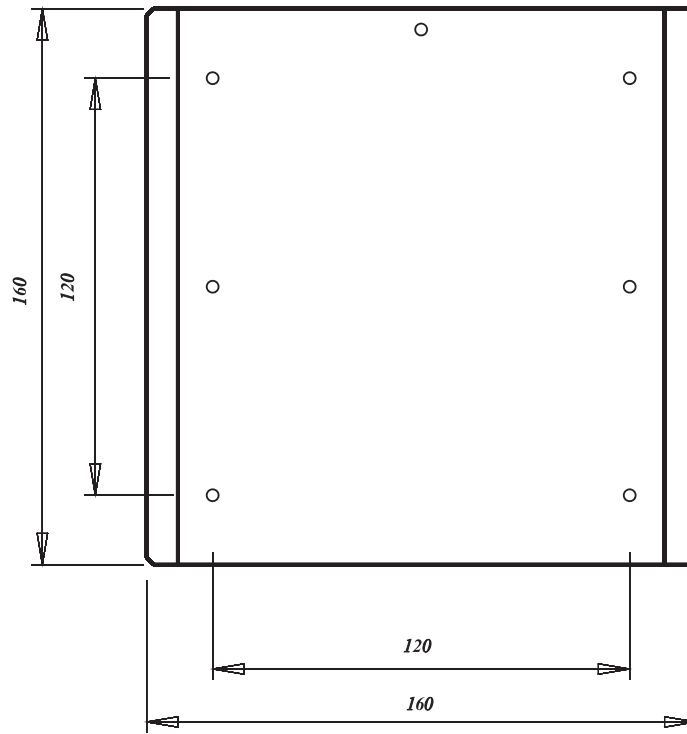
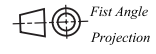


Application example

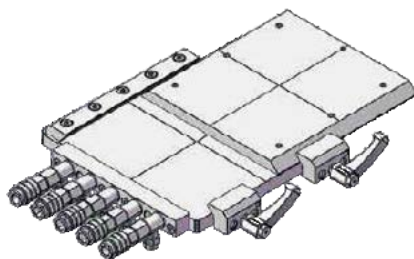


FGSS-G160 Gripper side

Dimensions (mm)

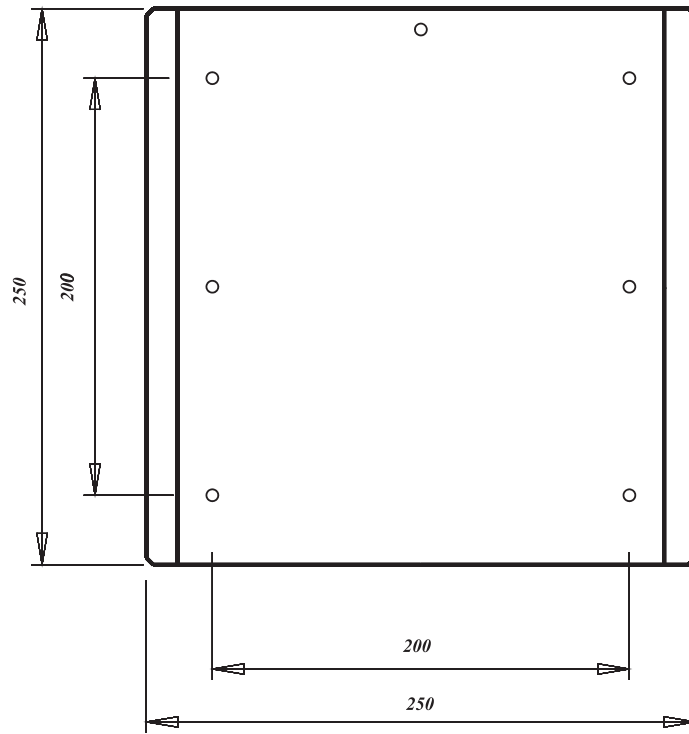
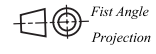


Application example

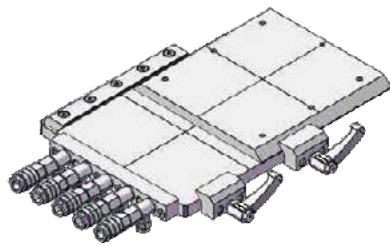


*FGSS-G250 Gripperside*

*Dimensions (mm)*



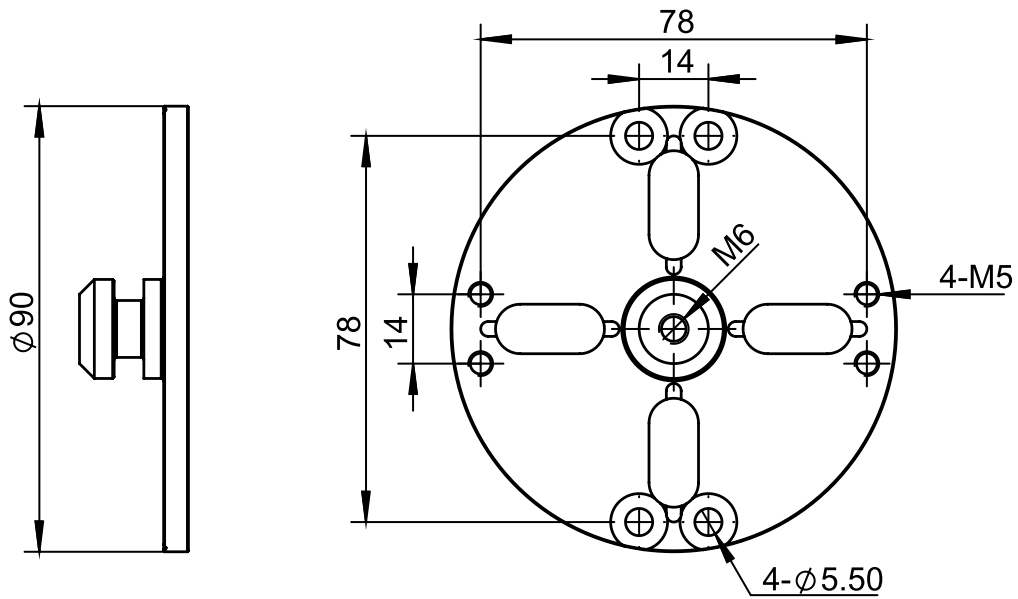
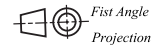
*Application example*



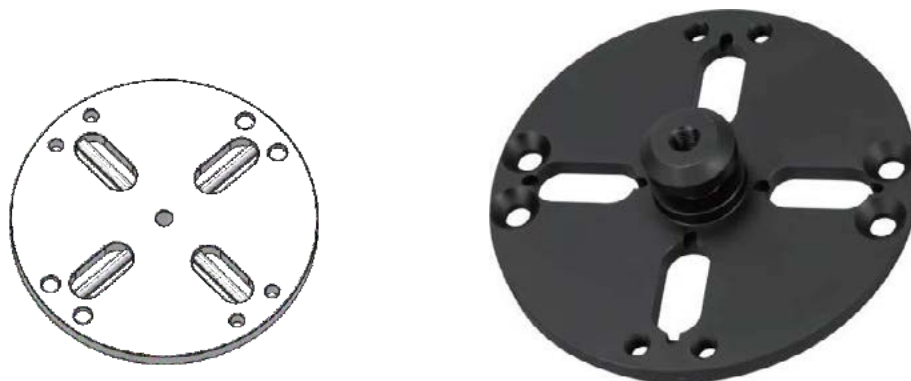
Round Quick Changer ( Manual ) -- Factory OEM / ODM

*FBP-90 Gripper side*

*Dimensions (mm)*



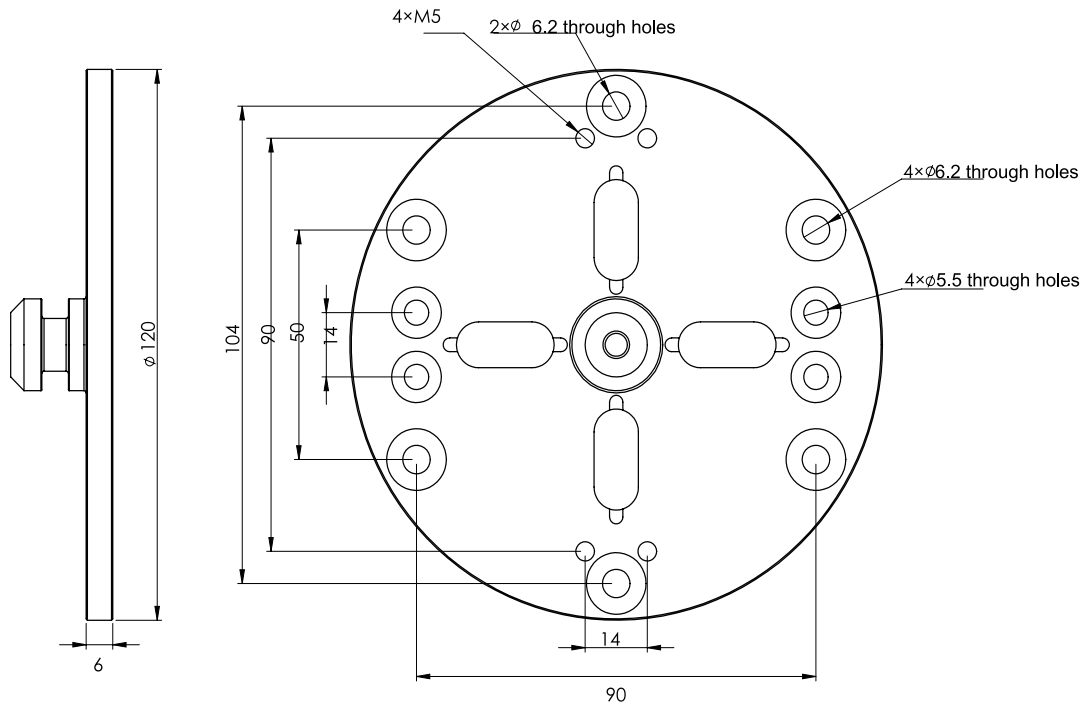
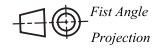
*Application example*



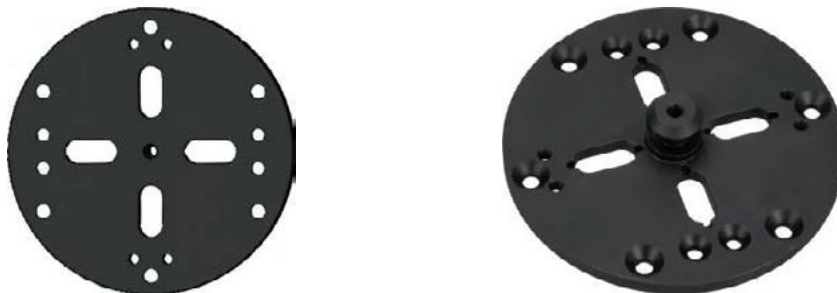
Round Quick Changer ( Manual ) -- Factory OEM / ODM

*FBP-120 Gripper side*

*Dimensions (mm)*



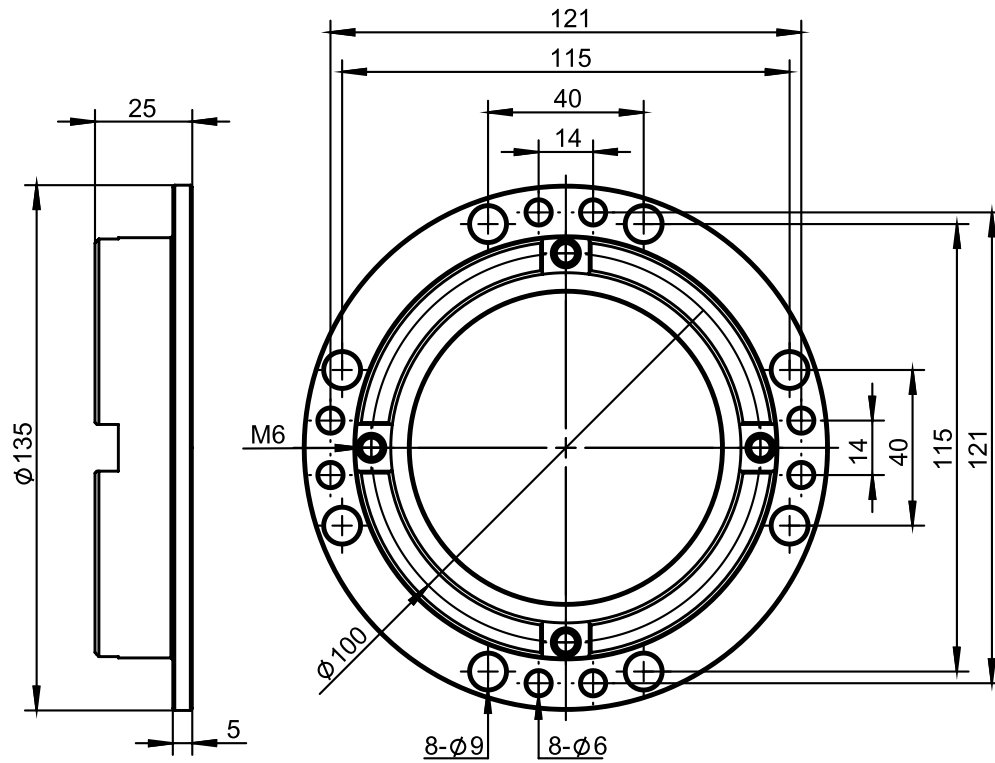
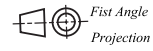
*Application example*



Round Quick Changer ( Manual ) -- Factory OEM / ODM

*FBP-135 Gripper side*

*Dimensions (mm)*



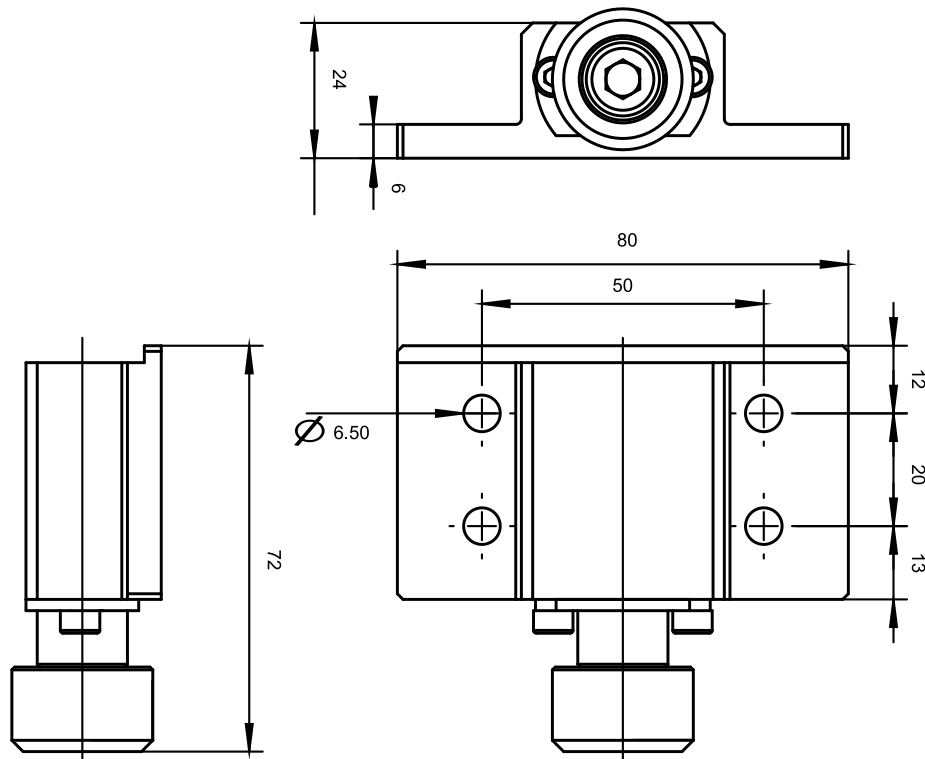
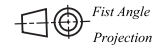
*Application example*



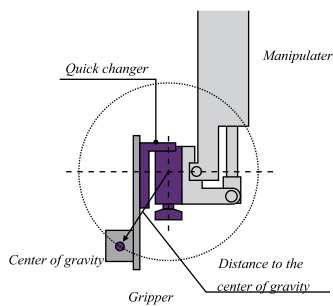
Square Quick Changer ( Manual ) -- Factory OEM / ODM

FSL-R15 Robot side

Dimensions (mm)



Application example

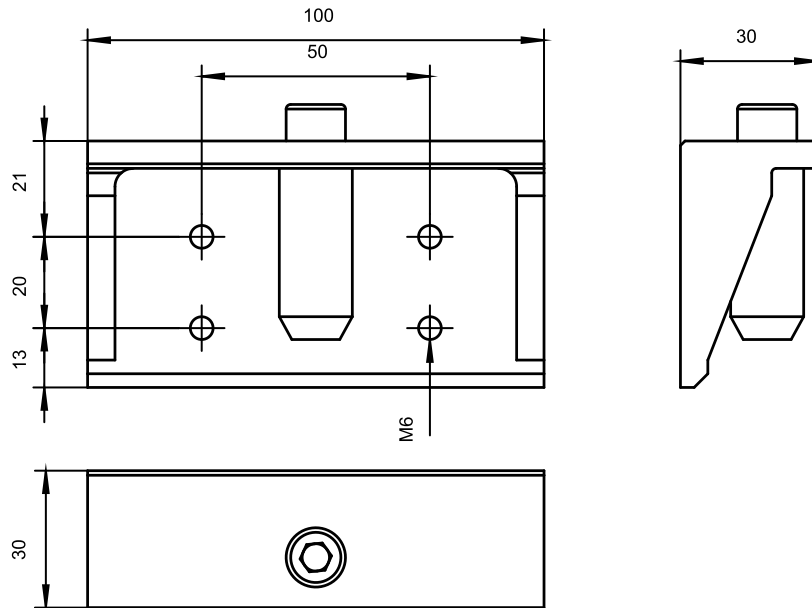


Square Quick Changer ( Manual ) -- Factory OEM / ODM

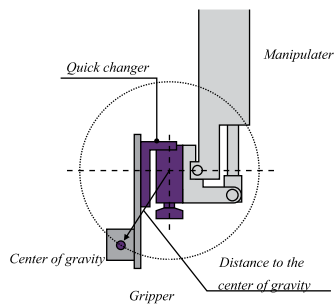
*FSL-G15 Gripper side*

*Dimensions (mm)*

First Angle Projection



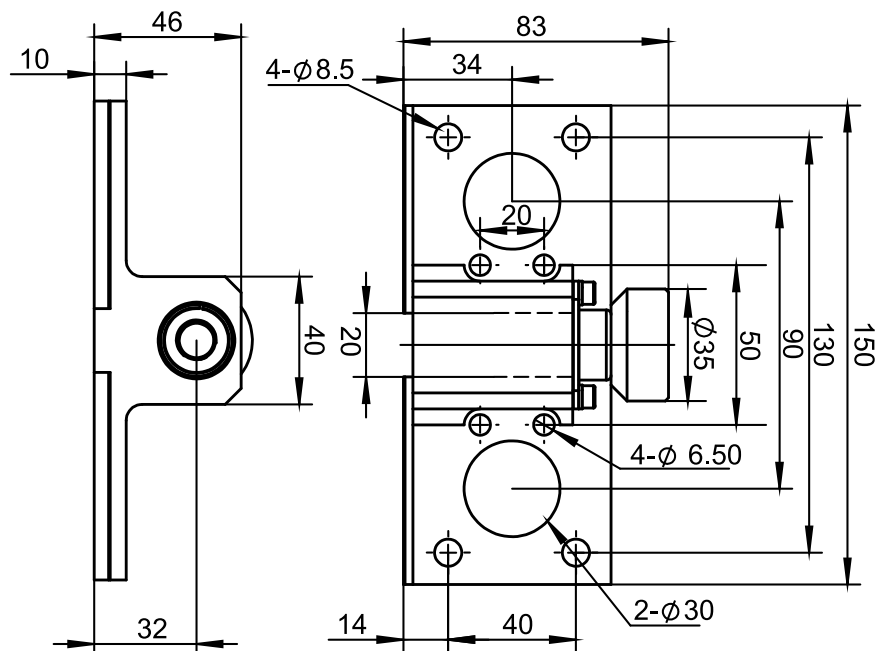
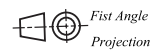
*Application example*



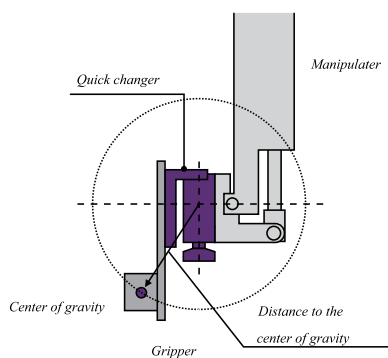
Square Quick Changer ( Manual ) -- Factory OEM / ODM

FSL-R35 Robot side

Dimensions (mm)



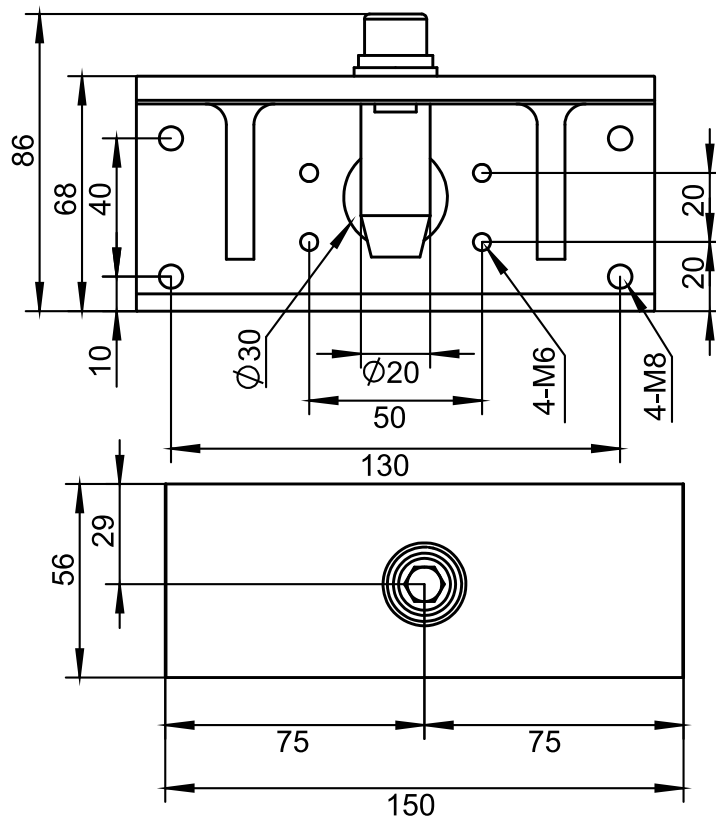
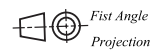
Application example



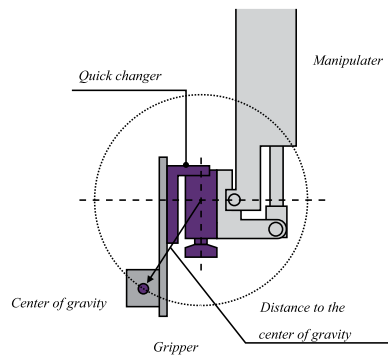
Square Quick Changer ( Manual ) -- Factory OEM / ODM

FSL-G35 Gripper side

Dimensions (mm)



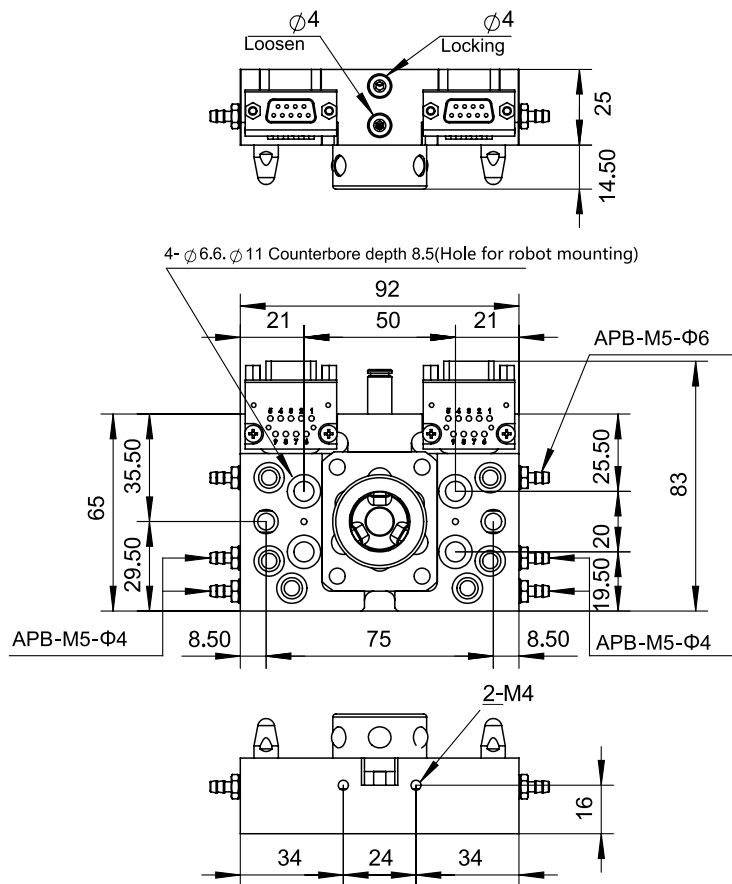
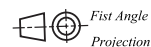
Application example



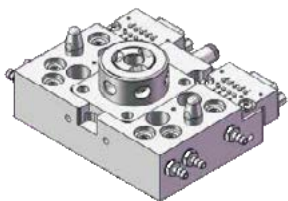
Square Quick Changer (Automatic) -- Factory OEM / ODM

FSLA-R10 Robot side

Dimensions (mm)



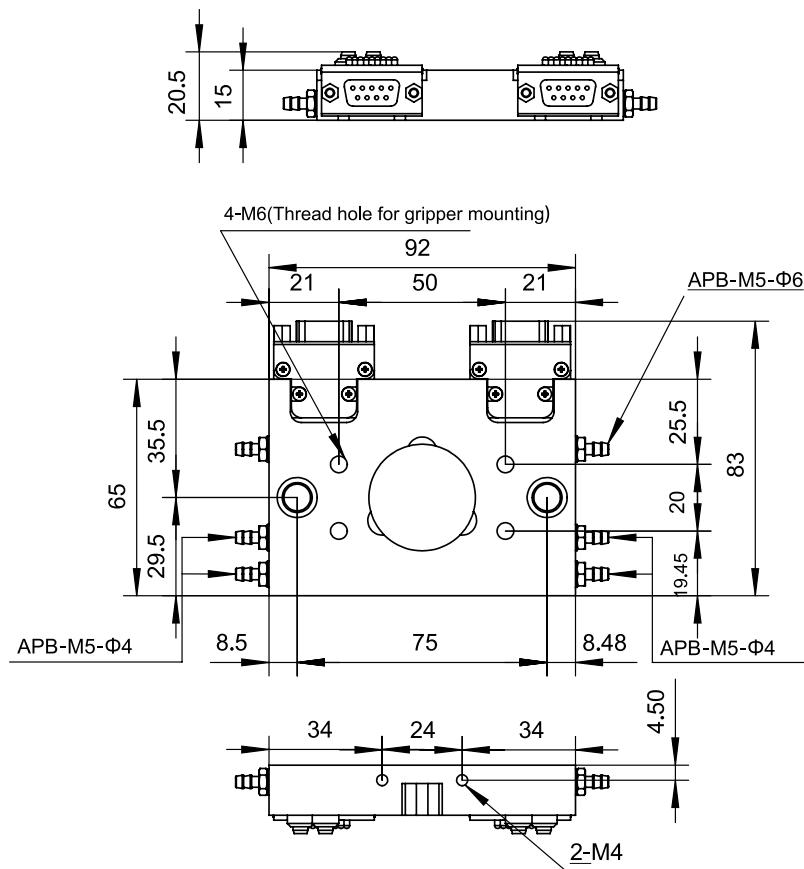
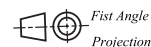
Application example



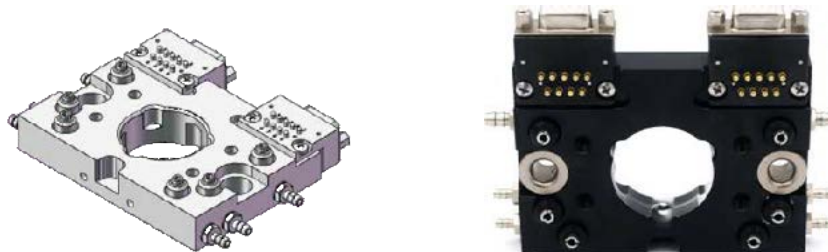
Square Quick Changer (Automatic) -- Factory OEM / ODM

*FSLA-G10 Gripper side*

Dimensions (mm)



Application example



### Round Quick Changer (Manual)

#### FQC - series

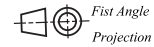
Easy replace of the EOAT on the robot

Two parts (robot side & gripper side) are supplied separately

Pneumatic connection ports: 4, 8, 10, 12 air inlet ports

Suitable with vacuum ports

Avoids mistakes in pneumatic & electrical connections

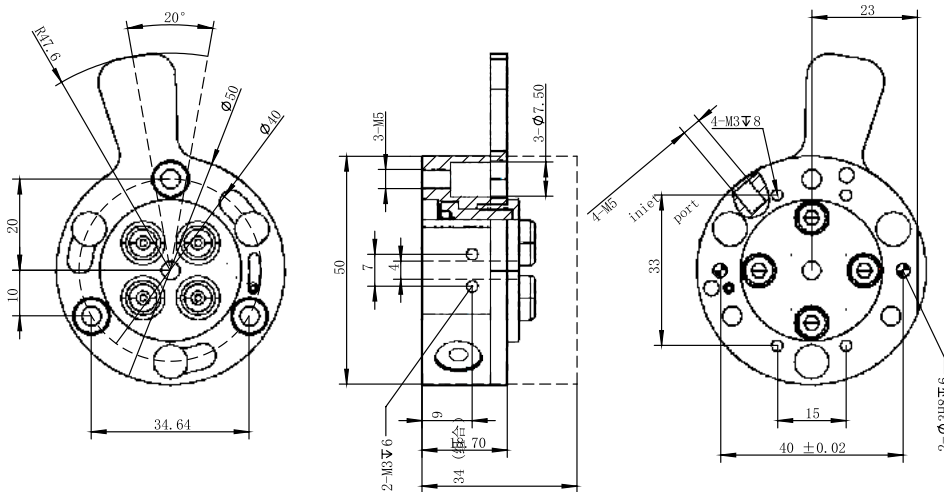


Model	FQC-R50	FQC-G50	FQC-R90	FQC-G90	FQC-R150	FQC-G150	FQC-R200	FQC-G200
Medium	Filtered & Compressed Air							
Pressure Range	2.5 ~ 8 bar							
Temperature Range	5 ~ 60 degree							
Robot Side quick changer	FQC-R50		FQC-R90		FQC-R150		FQC-R200	
Robot Side quick changer with Lock	FQC-R50S		FQC-R90S		FQC-R150S		FQC-R200S	
Gripper side quick changer		FQC-G50		FQC-G90		FQC-G150		FQC-G200
Pneumatic Connection port / pcs	4	4	8	8	10	10	12	12
Air Inlet Size	M5	M5	G1/8	G1/8	G1/4	G1/4	G1/4	G1/4
Mb (Nm)	15	15	100	100	350	350	1350	1350
Mt (Nm)	30	30	180	180	600	600	2500	2500
F(N)	150	150	400	400	3000	3000	9000	9000
Weight / g	102	65	318	226	1124	826	2640	1890



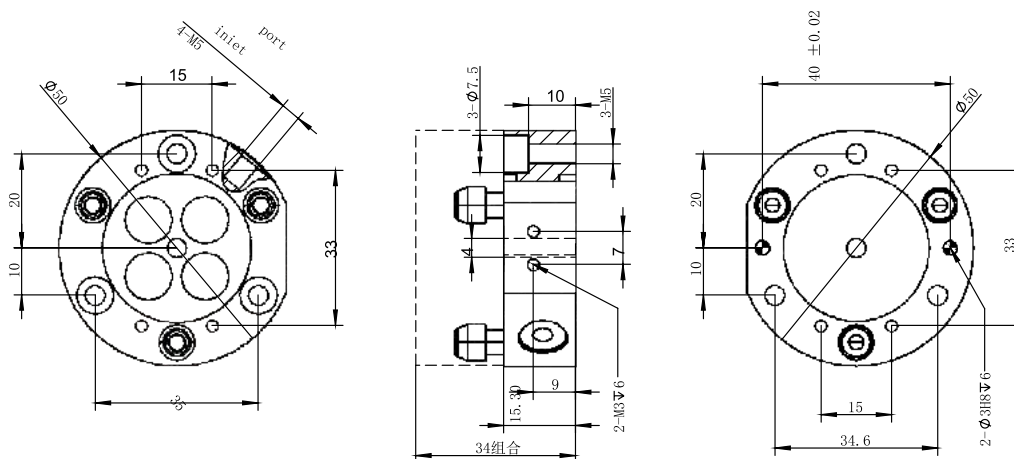
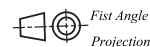
FQC-R50 Robot side

Dimensions (mm)



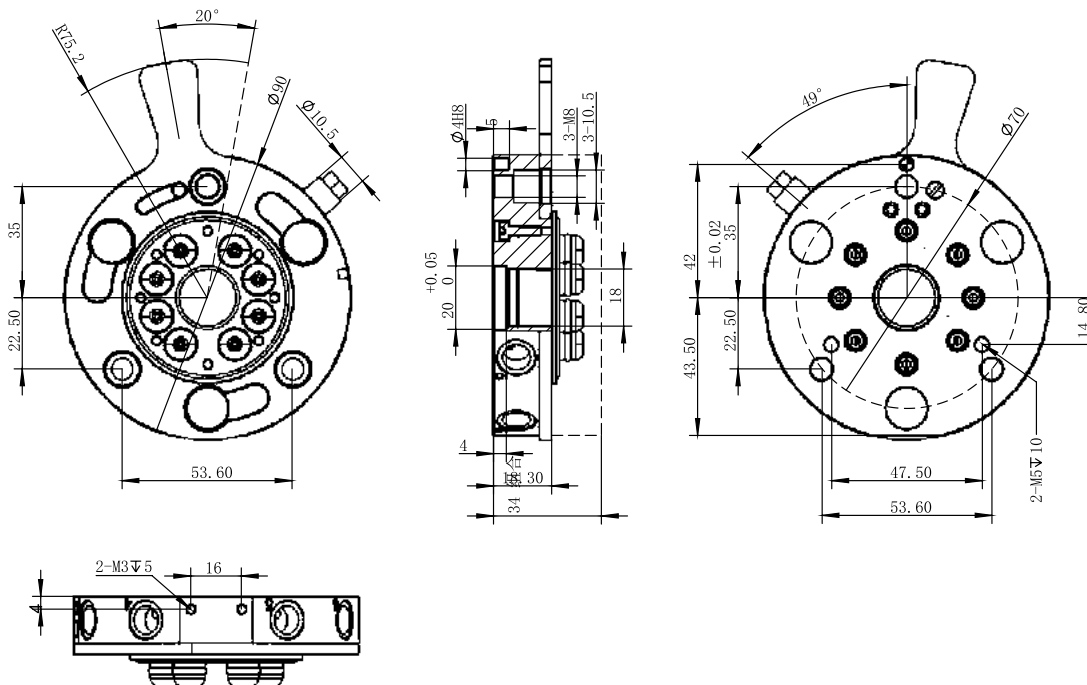
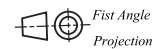
FQC-G50 Gripper side

Dimensions (mm)



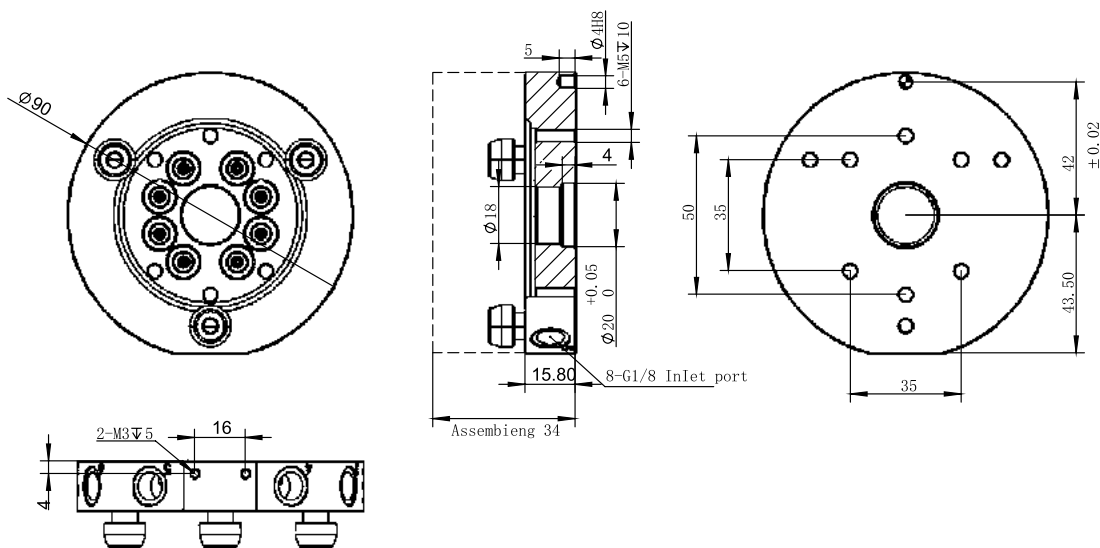
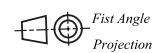
FQC-R90 Robot side

Dimensions (mm)



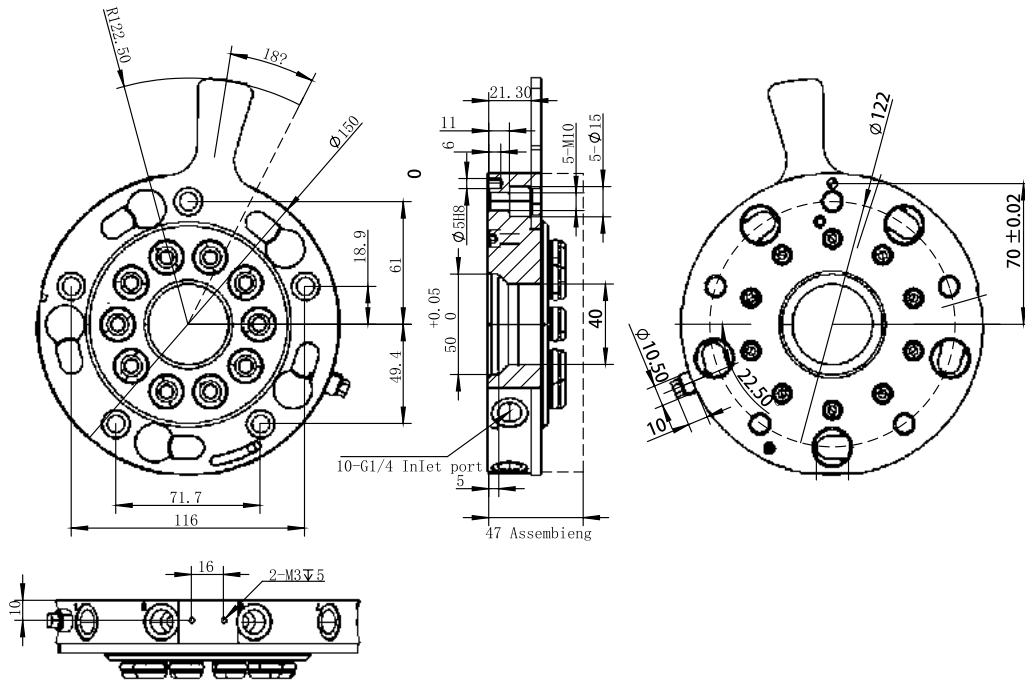
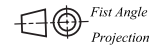
FQC-G90 Gripper side

Dimensions (mm)



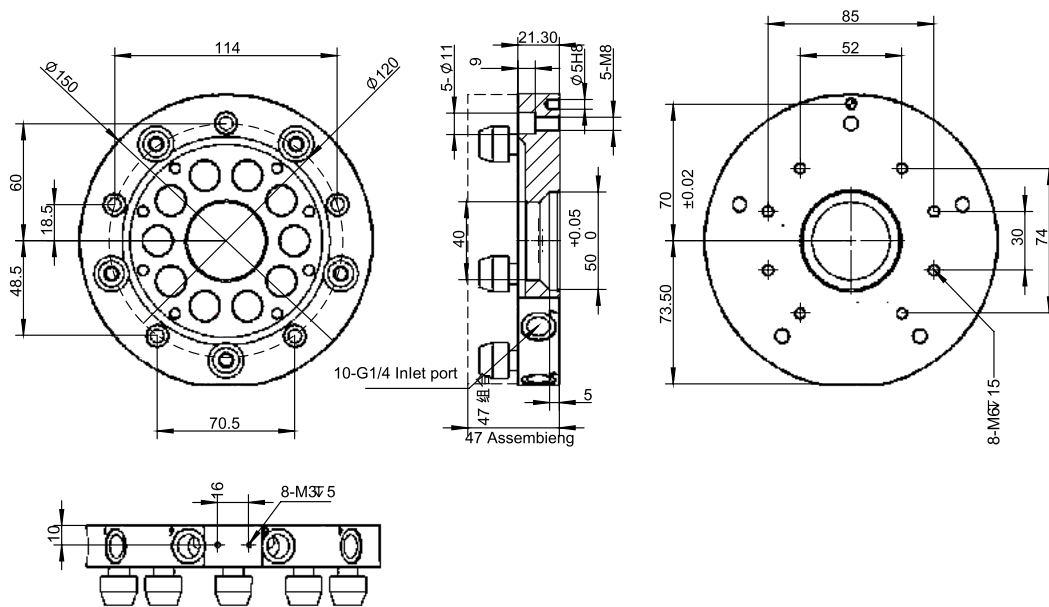
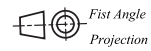
FQC-R150 Robot side

Dimensions (mm)



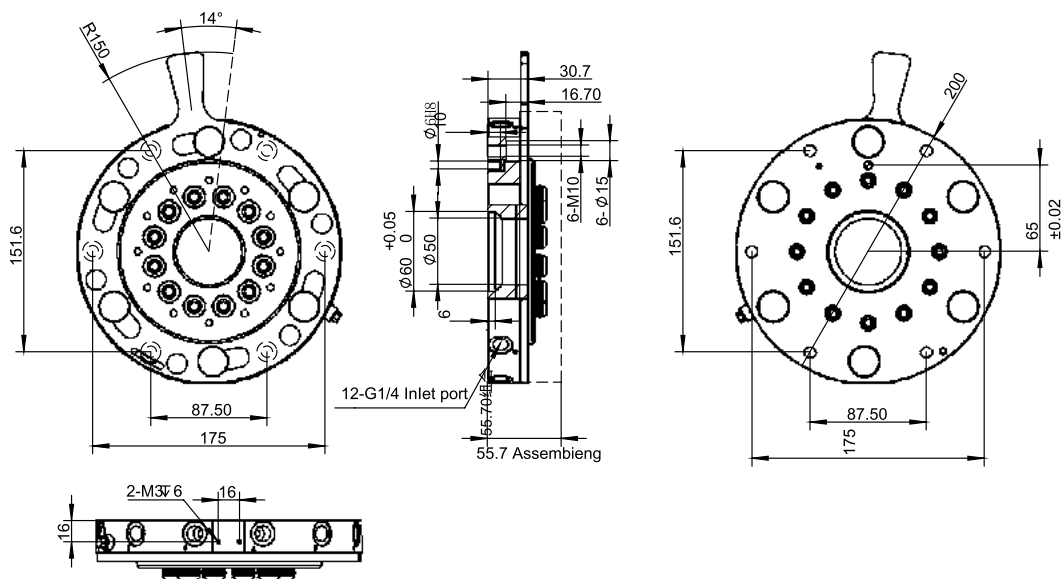
FQC-G150 Gripper side

Dimensions (mm)



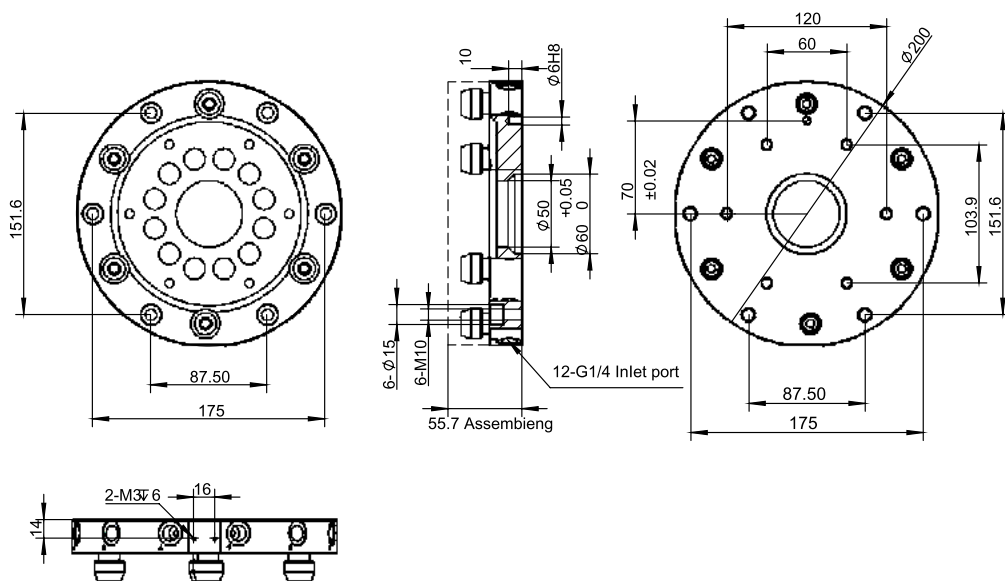
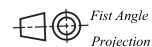
FQC-R200 Robot side

Dimensions (mm)



FQC-G200 Gripper side

Dimensions (mm)



Round Quick Changer (Manual)

Electrical connection module - Fitting

I/O quick changer by D-SUB 9 pins connectors

The two parts (robot side / gripper side are supplied separately

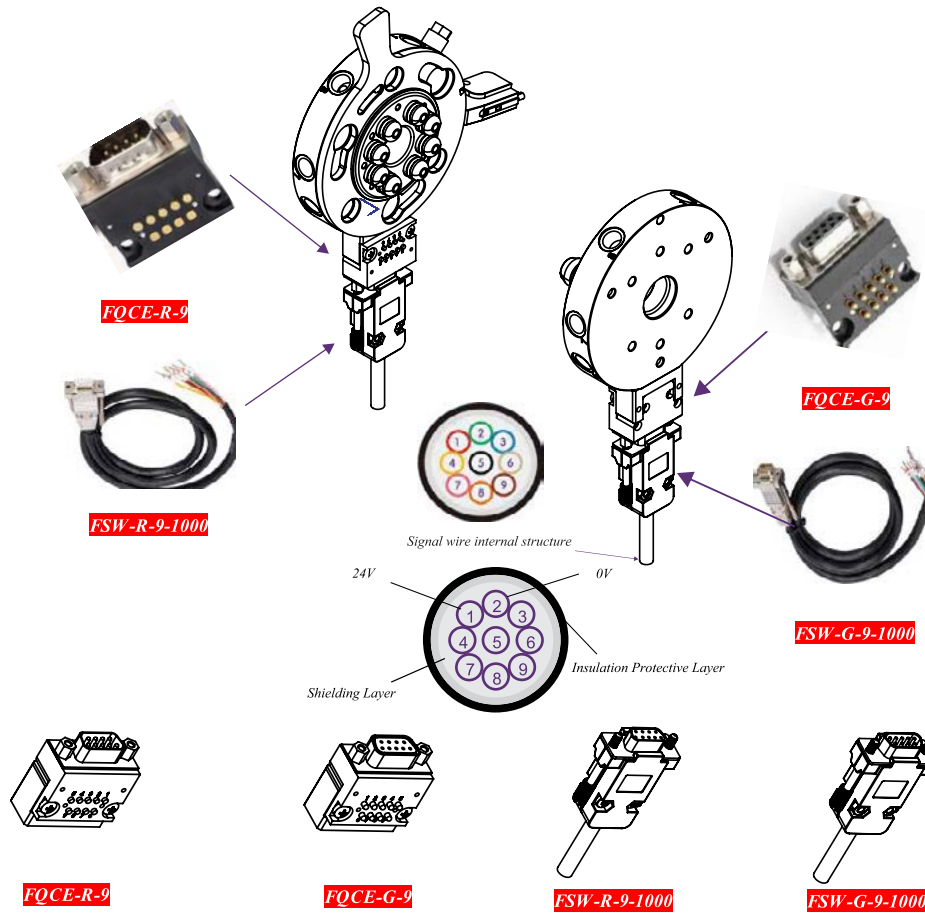
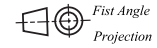
Robot side: **FQCE-R** & **FSW-R**

Gripper side: **FQCE-G** & **FSW-G**

**OEM:** the length of signal wire of electrical connection module can be customized

Dimensions (mm)

Application example



Model	FQCE-R-9	FQCE-G-9	FSW-R-9-1000	FSW-G-9-1000
I/O Connection Type	9 pin D-SUB	9 pin D-SUB	9 pin D-SUB	9 pin D-SUB
Working current / Max	3A	3A	3A	3A
Weight / g	24	24	24	24

### Round Quick Changer (Automatic)

#### FQCA - series

To provide high repeatedly precision to improve production efficiency

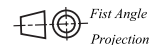
To achieve high-intensive & multiple-stations production task automatically

To achieve automation industry heavy & dangerous work to protect safety

Base on unique internal steel ball design structure to provide high-strength locking force

To enhance the practicability to provide various function module: electrical module, pneumatic module, security checking module, fluid module and etc.

Pneumatic connection ports: 6, 7, 8 air inlet ports

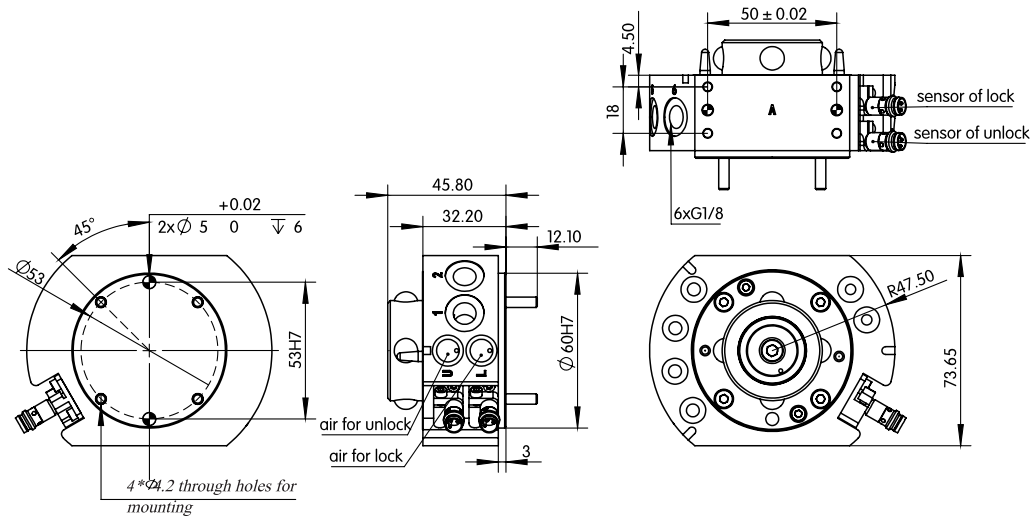
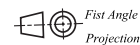


Model	FQCA-R25	FQCA-G25	FQCA-R35	FQCA-G35	FQCA-R50	FQCA-G50	FQCA-R100	FQCA-G100
Material	Aluminium Alloy & Steel Alloy							
Air Pressure Range	0.5 ~ 0.8 Mpa							
Temperature Range (Min./Max.)	5 ~ 60 Degree							
Humidity	0 ~ 90%							
Robot Side	FQCA-R25		FQCA-R35		FQCA-R50		FQCA-R100	
Gripper Side		FQCA-G25		FQCA-G35		FQCA-G50		FQCA-G100
Loading capability (safety)	25KGS		35KGS		50KGS		100KGS	
Air Connection Channel Port / pcs	6	6	7	7	8	8	8	8
Air Connection Channel port Size	G1/8	G1/8	G1/8	G1/8	G1/8	G1/8	G3/8	G3/8
Open & Lock Channel port size	G1/8							
Repeatability Accuracy	0.015mm ~ -0.015mm							
Max. Angle deviation	1 degree ~ -1 degree							
Max. distance for locking	2 mm							
Locking Force / N	2300N		2850N		4600N		12000N	
Static Load Torque (X&Y)	169.5 Nm		169.5 Nm		471Nm		538Nm	
Static Load Torque (Z)	230Nm		230Nm		648Nm		720Nm	
Weight / KGS	0.87	0.55	0.95	0.6	1.1	0.7	3.6	1.7



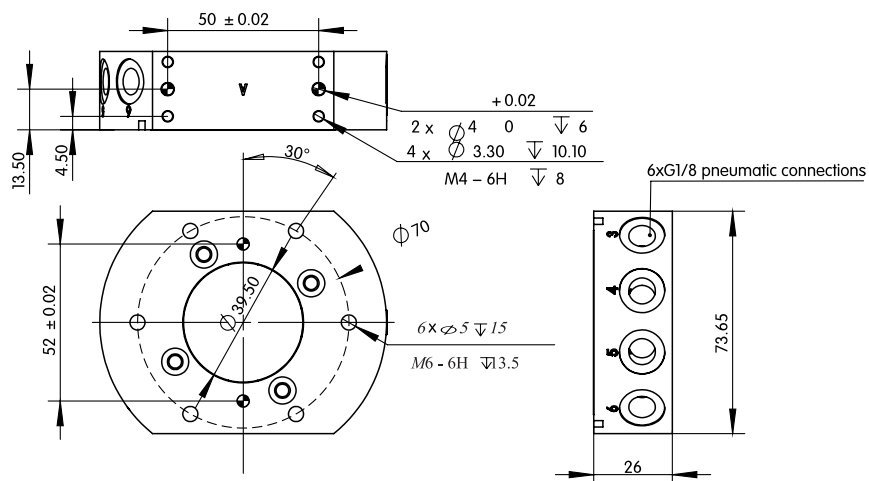
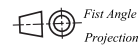
FQCA-R25 Robot side

Dimensions (mm)



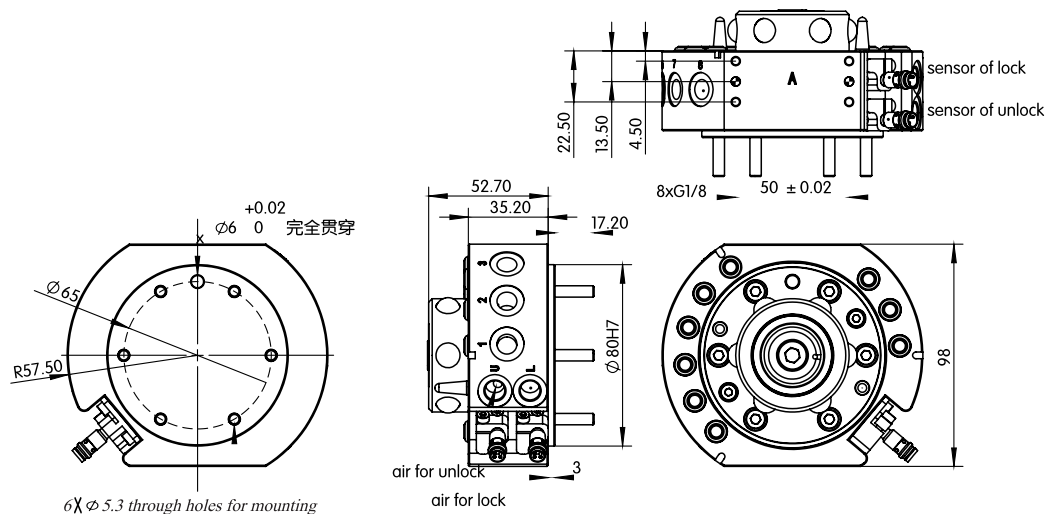
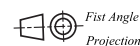
FQCA-G25 Gripper side

Dimensions (mm)



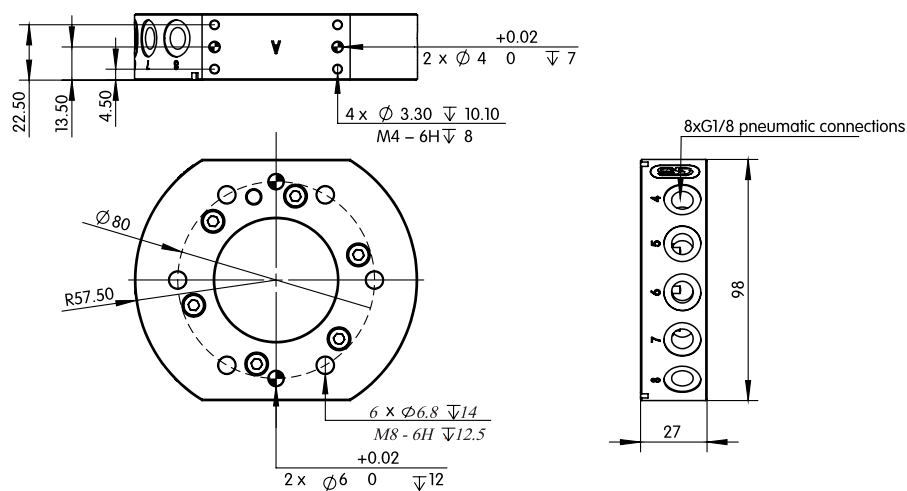
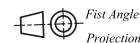
FQCA-R35 Robot side

Dimensions (mm)



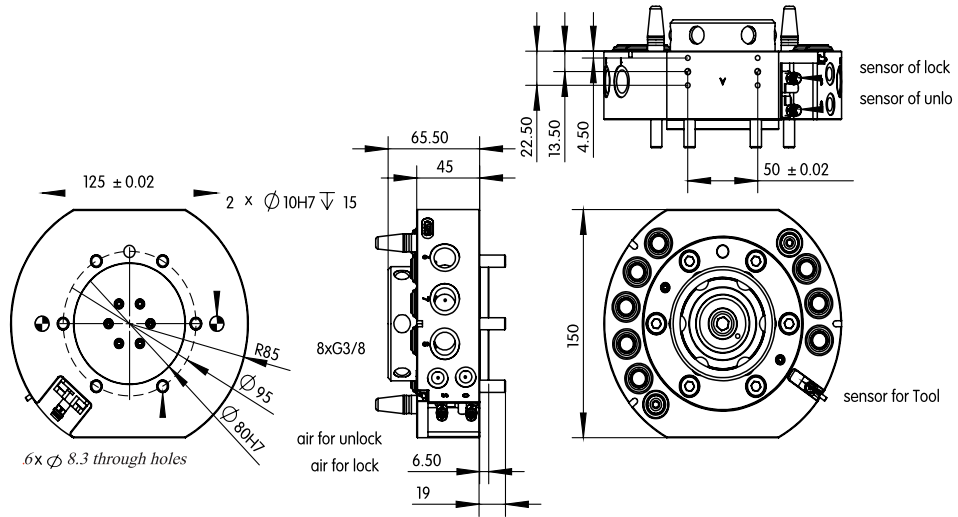
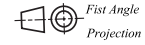
FQCA-G35 Gripper side

Dimensions (mm)



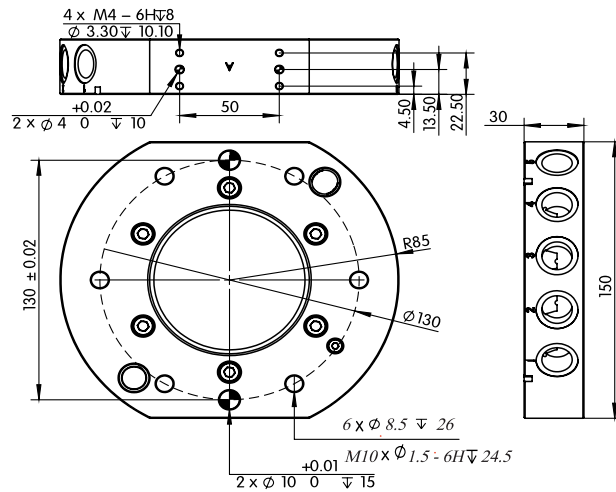
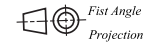
FQCA-R50 Robot side

Dimensions (mm)



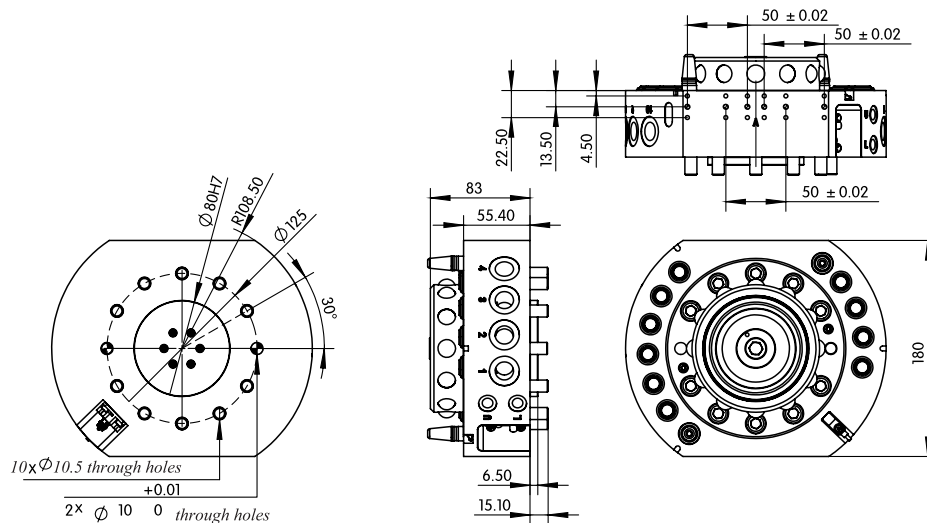
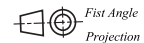
FQCA-G50 Gripper side

Dimensions (mm)



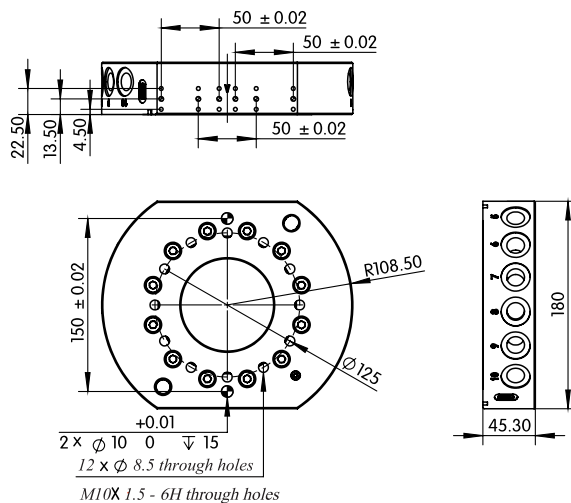
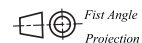
FQCA-R100 Robot side

Dimensions (mm)



FQCA-G100 Gripper side

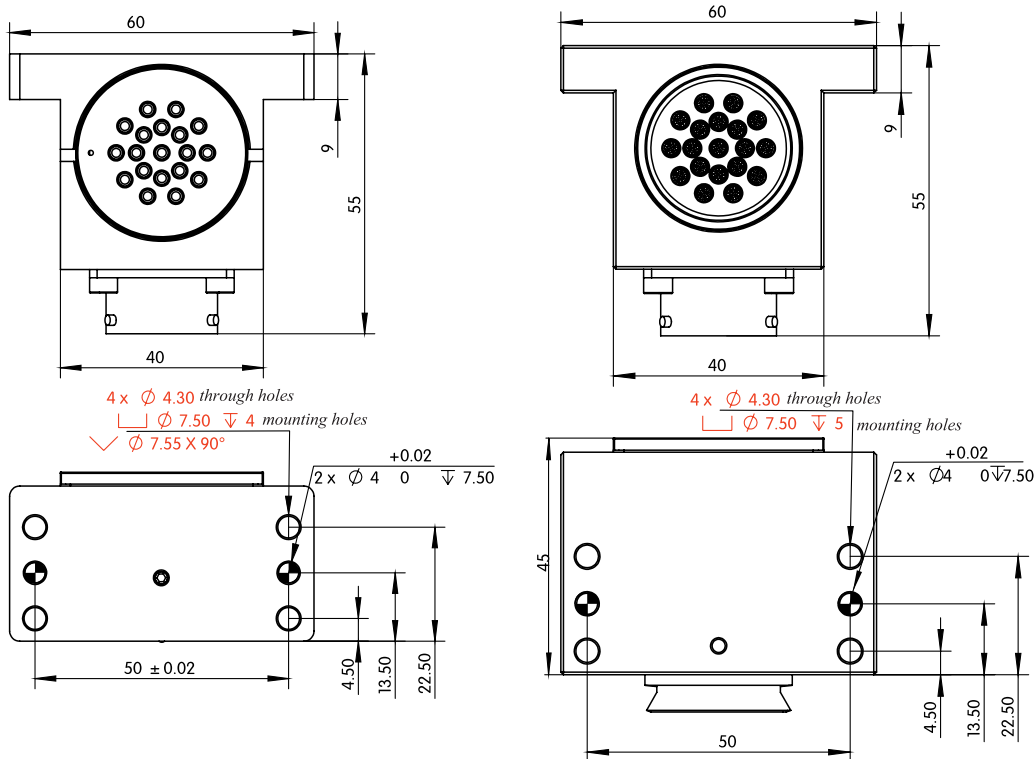
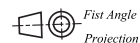
Dimensions (mm)



Automatic Quick Changer - Electrical module

FQCA-EM - series

Dimensions (mm)



FQCA-EM-G19



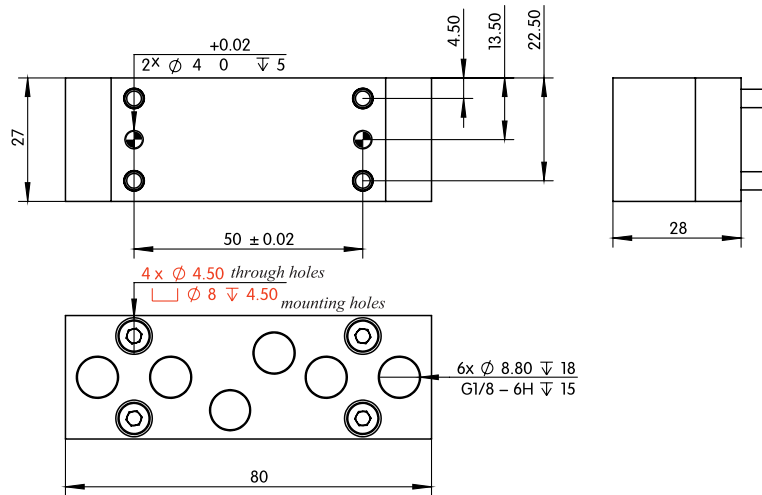
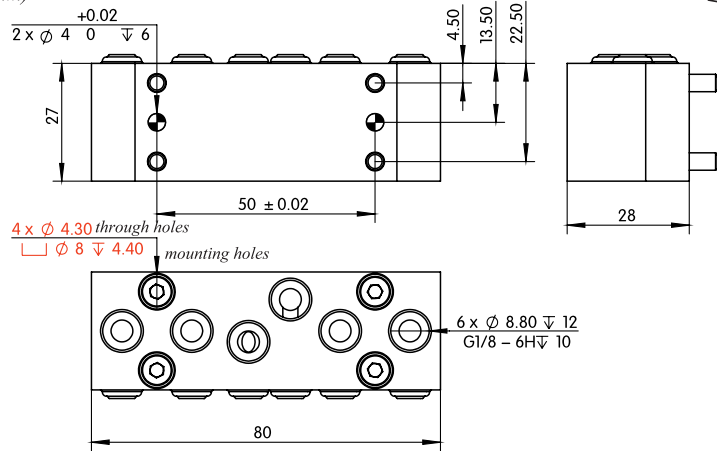
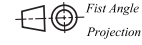
FQCA-EM-R19



Automatic Quick Changer - Pneumatic module

FQCA-PM - series

Dimensions (mm)



FQCA-PM-R6-G18

FQCA-PM-G6-G18

*Suspension for vacuum cup*

*Suspension normally used with vacuum cups to pick up parts & take out parts & move parts in plastic industry*

*New design internal structure offers more smoothly movement affection & more heavy duty load*

*spring structure to provide buffering function to protect parts Body & rod in hard anodized aluminum*

*Suspension normally be used with bracket to be mounted on aluminum profile or plate Base on special internal*

*Factory advantage: to provide OEM & ODM to meet customers' special request*

*Dimensions (mm)*



*FSVR Series*

*FSVN Series*

*FSVE Series*

*FSK Series*

*FVFM Series*



*FFSVRT Series*

*FSVNT Series*

*FSVET Series*

*FSKT Series*

*FVSG Series*

Non-rotative Suspension with smoothly body

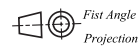
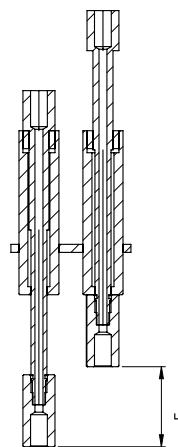
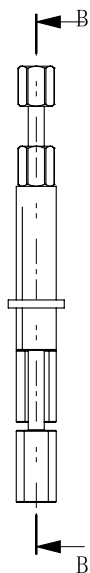
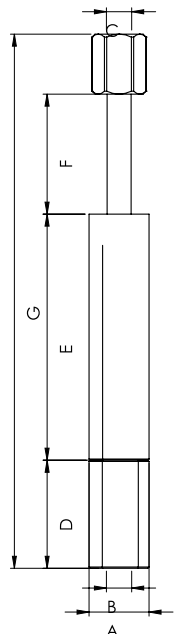
FSVN - series

Body & rod in hard anodized aluminum

Internal non-rotative structure to offers more smoothly movement affection & high load capability

Different strokes for option: 10mm; 20mm; 25mm; 35mm; 50mm

Dimensions (mm)



(-1 ~ 8 bar) air pressure range

Model	A	B	C	D	E	F	G	Weight
FSVN10-S-10-M5	∅10	M5	M5	18	22	10	60	15g
FSVN10-S-20-M5	∅10	M5	M5	18	41	20	89	20g
FSVN14-S-20-G1/8	∅14	G1/8	G1/8	20	40	20	92	30g
FSVN14-S-35-G1/8	∅14	G1/8	G1/8	20	60	35	127	50g
FSVN20-S-25-G1/8	∅20	G1/8	G1/8	22	50	25	112	54g
FSVN20-S-50-G1/8	∅20	G1/8	G1/8	22	84	50	171	80g

Application example



**Non-rotative Suspension with thread body**

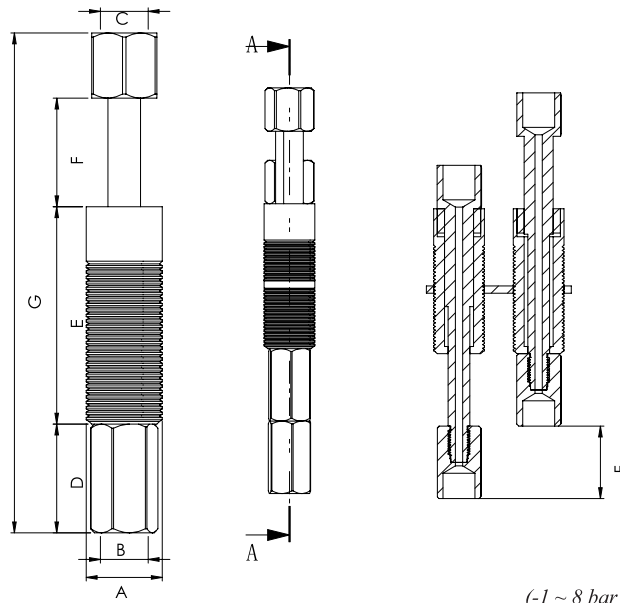
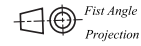
*FSVNT - series*

*Body & rod in hard anodized aluminum*

*Internal non-rotative structure to offers more smoothly movement affection & high load capability*

*Different strokes for option: 10mm; 20mm; 25mm; 35mm; 50mm*

*Dimensions (mm)*



*(-1 ~ 8 bar ) air pressure range*

<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>Weight</i>
FSVNT10-M-10-M5	M10*1	M5	M5	18	22	10	60	18g
FSVNT10-M-20-M5	M10*1	M5	M5	18	41	20	84	23g
FSVNT14-M-20-G18	M14*1	G1/8	G1/8	20	40	20	92	51g
FSVNT14-M-35-G18	M14*1	G1/8	G1/8	20	60	35	127	72g
FSVNT20-M-25-G18	M20*1	G1/8	G1/8	22	50	25	112	82g
FSVNT20-M-50-G18	M20*1	G1/8	G1/8	22	84	50	171	120g

*Application example*



Rotative Suspension with smoothly body

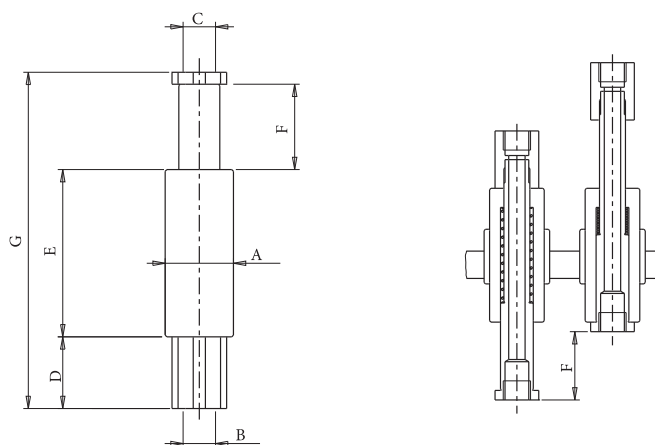
*FSVR - series*

*Body & rod in hard anodized aluminum*

*Internal rotative structure to provide high load capability*

*To provide different strokes for option: 10mm; 20mm; 25mm; 35mm; 50mm*

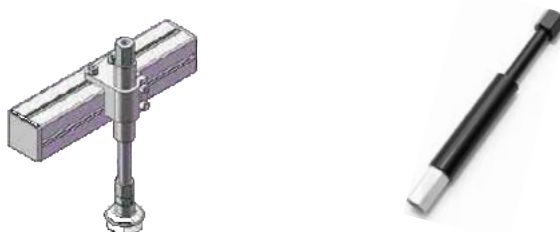
*Dimensions (mm)*



*(-1 ~ 8 bar ) air pressure range*

<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>Weight</i>
FSVR10-S-10-M5	∅10	M5	M5	18	22	10	55.5	11g
FSVR10-S-20-M5	∅10	M5	M5	18	41	20	84	17g
FSVR14-S-20-G18	∅14	G1/8	G1/8	20	40	20	92	23g
FSVR14-S-35-G18	∅14	G1/8	G1/8	20	60	35	127	40g
FSVR20-S-25-G18	∅20	G1/8	G1/8	22	50	25	112	50g
FSVR20-S-50-G18	∅20	G1/8	G1/8	22	84	50	171	77g

*Application example*



**Rotative Suspension with thread body**

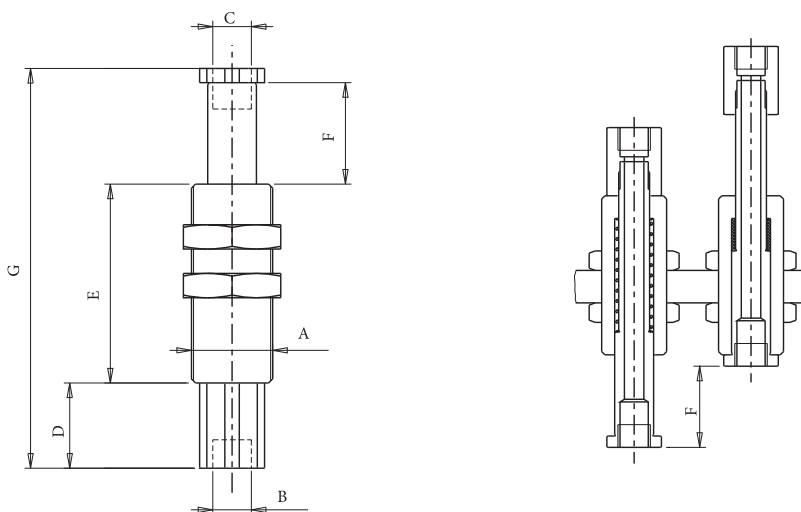
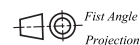
*FSVRT - series*

*Body & rod in hard anodized aluminum*

*Internal rotative structure to provide high load capability*

*To provide different strokes for option: 10mm; 20mm; 25mm; 35mm; 50mm*

*Dimensions (mm)*



*(-1 ~ 8 bar ) air pressure range*

<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>Weight</i>
FSVRT10-M-10-M5	M10*1	M5	M5	18	22	10	55.5	14g
FSVRT10-M-20-M5	M10*1	M5	M5	18	41	20	84	26g
FSVRT14-M-20-G18	M14*1	G1/8	G1/8	20	40	20	92	32g
FSVRT14-M-35-G18	M14*1	G1/8	G1/8	20	60	35	127	36g
FSVRT20-M-25-G18	M20*1	G1/8	G1/8	22	50	25	112	70g
FSVRT20-M-50-G18	M20*1	G1/8	G1/8	22	84	50	171	104g

*Application example*



Non-rotative Suspension with integrated elbow arm & Smoothly body

FSVE- series

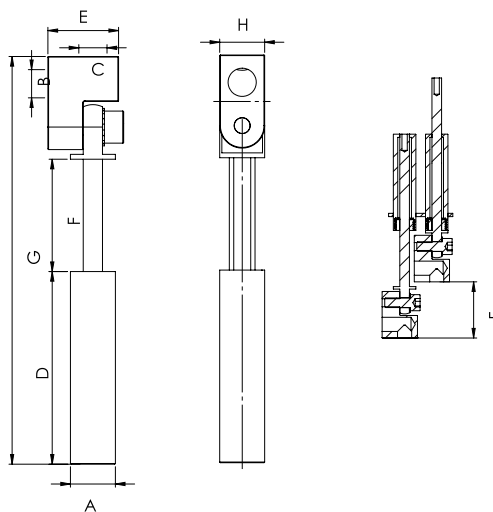
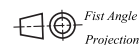
Body & rod in hard anodized aluminum

Internal non-rotative structure to offers more smoothly movement affection & high load capability

Different strokes for option: 10mm; 20mm; 25mm; 35mm; 50mm

Easy to set 0° ~ +/-90° to provide more flexible option to meet special angle request

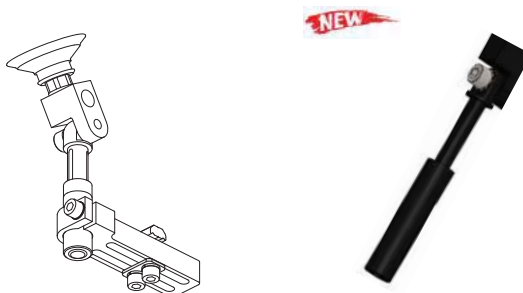
Dimensions (mm)



(-1 ~ 8 bar ) air pressure range

Model	A	B	C	D	E	F	G	H	Weight
FSVE10-S-10-M5	∅10	M5	M5	22	11	10	53	10	18g
FSVE10-S-20-M5	∅10	M5	M5	41	11	20	81	10	23g
FSVE14-S-20-G18	∅14	G1/8	G1/8	40	22	20	93	14	51g
FSVE14-S-35-G18	∅14	G1/8	G1/8	60	22	35	128	14	72g
FSVE20-S-25-G18	∅20	G1/8	G1/8	50	22	25	111	14	82g
FSVE20-S-50-G18	∅20	G1/8	G1/8	84	22	50	169.5	14	120g

Application example



Non-rotative Suspension with integrated elbow arm & Thread body

FSVET- series

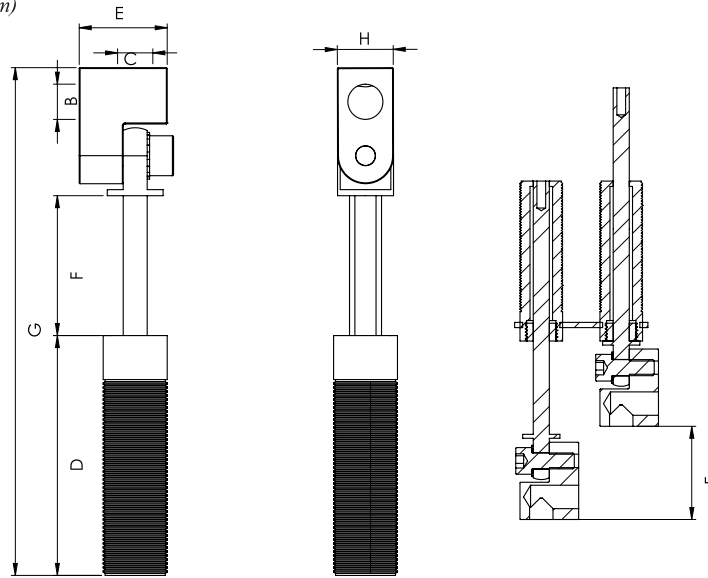
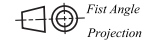
Body & rod in hard anodized aluminum

Internal non-rotative structure to offers more smoothly movement affection & high load capability

Different strokes for option: 10mm; 20mm; 25mm; 35mm; 50mm

Easy to set 0° ~ +/-90° to provide more flexible option to meet special angle request

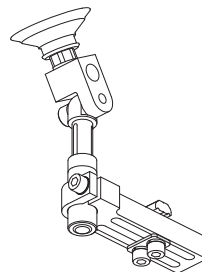
Dimensions (mm)



(-1 ~ 8 bar ) air pressure range

Model	A	B	C	D	E	F	G	H	Weight
FSVET10-M-10-M5	M10*1	M5	M5	22	11	10	53	10	21g
FSVET10-M-20-M5	M10*1	M5	M5	41	11	20	81	10	26g
FSVET14-M-20-G18	M14*1	G1/8	G1/8	40	22	20	93	14	57g
FSVET14-M-35-G18	M14*1	G1/8	G1/8	60	22	35	128	14	80g
FSVET20-M-25-G18	M20*1	G1/8	G1/8	50	22	25	111	14	88g
FSVET20-M-50-G18	M20*1	G1/8	G1/8	84	22	50	169.5	14	125g

Application example



Non-rotative Suspension with adjustable clamp & Smoothly body

FSK-series

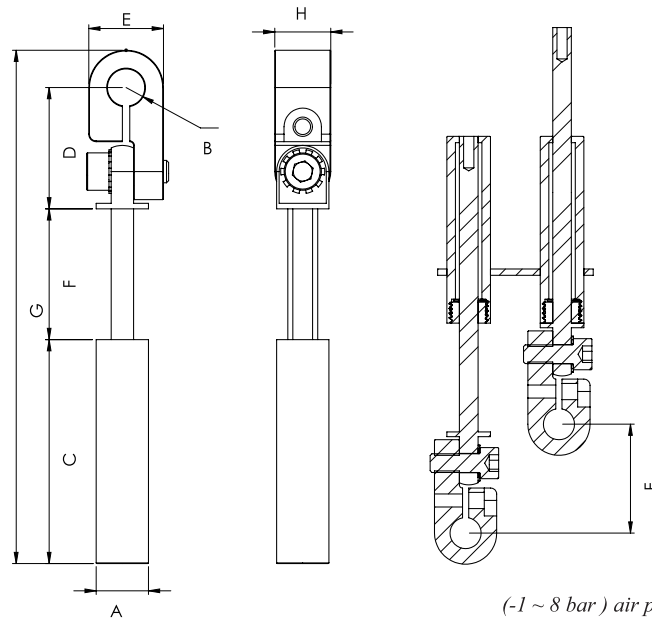
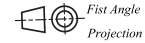
Body & rod in hard anodized aluminum

Internal non-rotative structure to offers more smoothly movement affection & high load capability

Different strokes for option: 20mm; 25mm; 35mm; 50mm

Easy to set 0° ~ +/-90° to provide more flexible option to meet special angle request

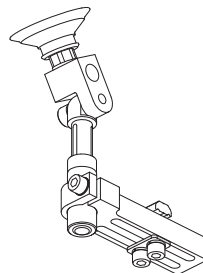
Dimensions (mm)



(-1 ~ 8 bar ) air pressure range

Model	A	B	C	D	E	F	G	H	Weight
FSK14-S-20-D10	∅14	∅10	40	22.5	20	20	97	23.6	36g
FSK14-S-20-D14	∅14	∅14	40	22.5	20	20	97	23.6	35g
FSK14-S-35-D14	∅14	∅14	40	22.5	20	35	128	23.6	80g
FSK20-S-25-D14	∅20	∅14	50	22.5	20	25	120	23.6	72g
FSK20-S-25-D20	∅20	∅20	50	25	27	25	125	27	90g
FSK20-S-50-D20	∅20	∅20	84	25	27	50	180	27	125g

Application example



Non-rotative Suspension with adjustable clamp & Thread body

*FSKT-series*

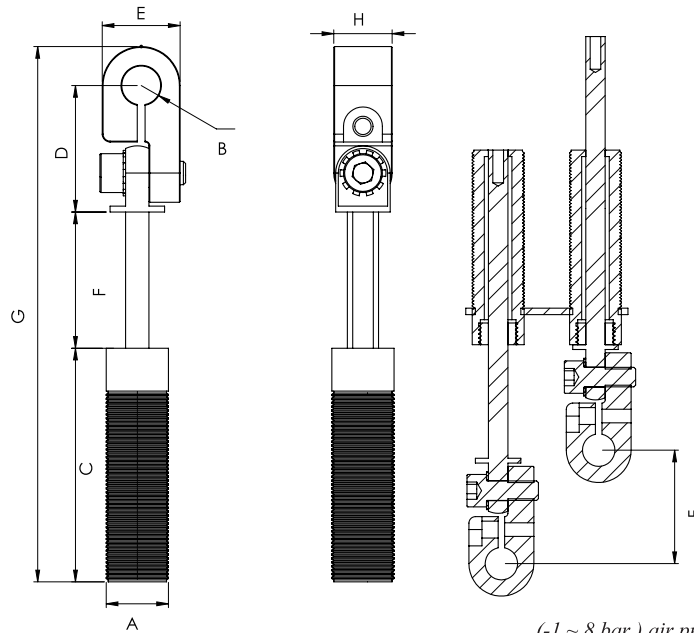
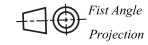
*Body & rod in hard anodized aluminum*

*Internal non-rotative structure to offers more smoothly movement affection & high load capability*

*Different strokes for option: 20mm; 25mm; 35mm; 50mm*

*Easy to set 0° ~ +/-90° to provide more flexible option to meet special angle request*

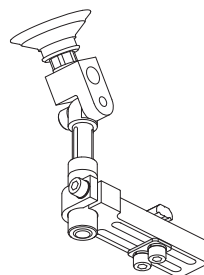
*Dimensions (mm)*



(-1 ~ 8 bar) air pressure range

Model	A	B	C	D	E	F	G	H	Weight
FSKT14-M-20-D10	M14*1	∅10	40	22.5	20	20	97	23.6	36g
FSKT14-M-20-D14	M14*1	∅14	40	22.5	20	20	97	23.6	35g
FSKT14-M-35-D14	M14*1	∅14	40	22.5	20	35	128	23.6	80g
FSKT20-M-25-D14	M20*1	∅14	50	22.5	20	25	120	23.6	72g
FSKT20-M-25-D20	M20*1	∅20	50	25	27	25	125	27	90g
FSKT20-M-50-D20	M20*1	∅20	84	25	27	50	180	27	125g

*Application example*



Rotative Suspension with Smoothly body

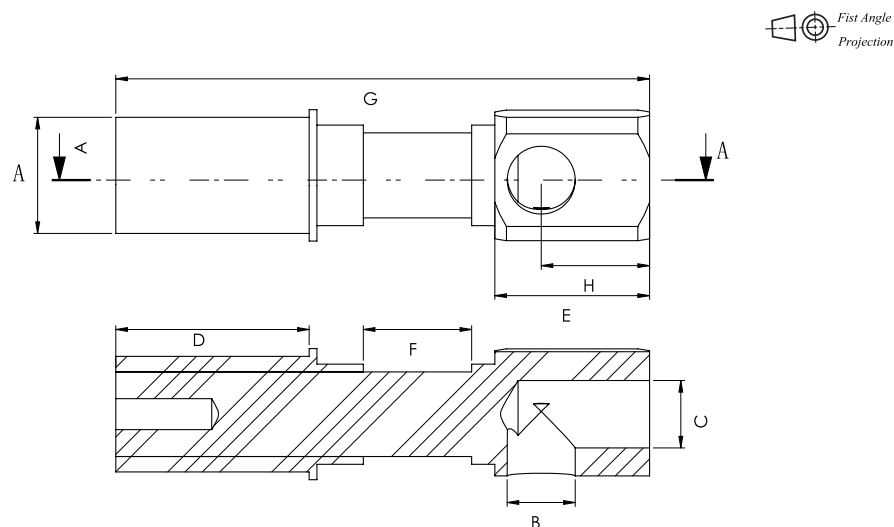
*FVFM- series*

*Rod in hard anodized aluminum & Body in steel material*

*External spring structure to offer high load capability*

*Different strokes for option: 10mm; 15mm; 20mm; 40mm*

**Dimensions (mm)**



Model	A	B	C	D	E	F	G	H	Weight
FVFM10-10-M5	∅10	M5	M5	18	16	10	64	12	18g
FVFM10-20-M5	∅10	M5	M5	18	16	20	72	12	28g
FVFM14-15-G1/8	∅14	G1/8	G1/8	25	20	15	75	14	34g
FVFM14-40-G1/8	∅14	G1/8	G1/8	25	20	40	100	14	48g
FVFM20-20-G1/4	∅20	G1/8	G1/4	48	26	20	113	15	136g
FVFM20-40-G1/4	∅20	G1/8	G1/4	48	26	40	132	15	148g

*Application example*



Non-rotative Suspension with Smoothly body

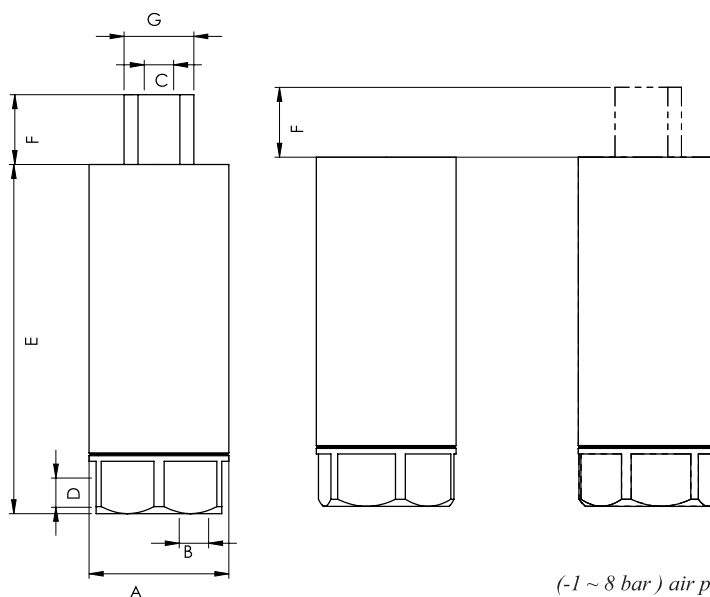
*FVSG - series*

*Rod & body in hard anodized aluminum*

*Unique internal telescopic structure to provide more space to assemble flexible*

*Different strokes for option: 10mm; 20mm;*

**Dimensions (mm)**



*(-1 ~ 8 bar ) air pressure range*

<i>Model</i>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>Weight</b>
FVSG20-S-10-M5	∅20	M5	M5	M5	50	10	50.5	35g
FVSG20-S-20-M5	∅20	M5	M5	M5	65	20	84	45g
FVSG20-S-20-G18	∅20	G1/8	G1/8	G1/8	72	20	92	70g

*Application example*



**Vacuum cup - 1 bellow**

Vacuum cups with 1 bellow are used for Flat surface only

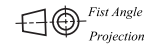
Vacuum cups with 1 bellow could provide high accuracy in loading gripping & speeds up throughput rates.

Base on different request, provide 3 materials for option: Silicon Rubber. NBR. HT1(Traceless Function)

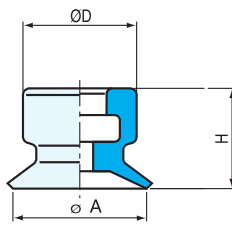
Factory advantage: to provide OEM & ODM to meet customers' special request

**FVS1 - series**

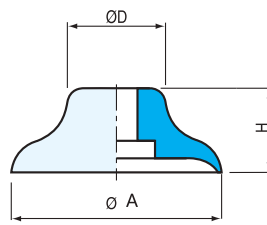
Dimensions (mm)



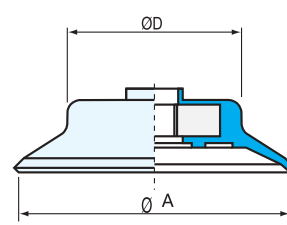
Model	F / (N)	A	H	D	SI / Transparant	NBR / Black	Weight
FVS1-2-HT1	0.5	2	4	4	FVS1-2-SI	FVS1-2-NBR	1g
FVS1-3.5-HT1	0.7	3.5	4	4	FVS1-3.5-SI	FVS1-3.5-NBR	1g
FVS1-5-HT1	0.9	5	6.5	7.5	FVS1-5-SI	FVS1-5-NBR	1g
FVS1-6-HT1	1	6	6.5	7.5	FVS1-6-SI	FVS1-6-NBR	1g
FVS1-8-HT1	1.1	8	7	8	FVS1-8-SI	FVS1-8-NBR	1g
FVS1-10-HT1	1.6	10	7.5	8.7	FVS1-10-SI	FVS1-10-NBR	4g
FVS1-15-HT1	3.7	15	8	12	FVS1-15-SI	FVS1-15-NBR	5g
FVS1-20-HT1	6.1	20	10	15	FVS1-20-SI	FVS1-20-NBR	6g
FVS1-25-HT1	9.4	25	14	16	FVS1-25-SI	FVS1-25-NBR	7g
FVS1-30-HT1	15.9	30	12	15	FVS1-30-SI	FVS1-30-NBR	8g
FVS1-35-HT1	23.1	35	14	20.5	FVS1-35-SI	FVS1-35-NBR	11g
FVS1-40-HT1	26.7	40	14	23.5	FVS1-40-SI	FVS1-40-NBR	12g
FVS1-50-HT1	38.3	50	15	29	FVS1-50-SI	FVS1-50-NBR	15g
FVS1-60-HT1	57.8	60	16	38	FVS1-60-SI	FVS1-60-NBR	34g
FVS1-80-HT1	101.1	80	18	53	FVS1-80-SI	FVS1-80-NBR	63g



FVS1-2~10



FVS1-15~50



FVS1-60~80

**Vacuum cup - 2 bellows**

uum cups with 2 bellows provide better precision and positioning comparing with vacuum cup with 1 bellow

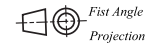
uum cups with 2 bellows provide better angle & flexibility precision & low internal volume suitable for high-speed application

se on different request, provide 3 materials for option: Silicon Rubber. NBR. HT1(Traceless Function)

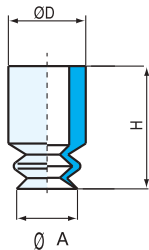
tory advantage: to provide OEM & ODM to meet customers' special request

**FVS2 - series**

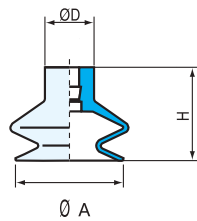
Dimensions (mm)



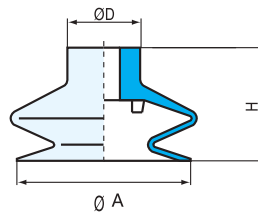
Model	F / (N)	A	H	D	SI / Transparant	NBR / Black	Weight
FVS2-6-HT1	0.4	5.7	11	7	FVS2-6-SI	FVS2-6-NBR	2g
FVS2-11-HT1	0.95	10.1	16	10	FVS2-11-SI	FVS2-11-NBR	2g
FVS2-14-HT1	1.2	12.5	16	10	FVS2-14-SI	FVS2-14-NBR	2g
FVS2-16-HT1	2.3	15.6	19	10	FVS2-16-SI	FVS2-16-NBR	5g
FVS2-20-HT1	4.7	18.1	16	10	FVS2-20-SI	FVS2-20-NBR	5g
FVS2-22-HT1	5.7	21.5	19	10	FVS2-22-SI	FVS2-22-NBR	6g
FVS2-25-HT1	5.3	22.5	23	10	FVS2-25-SI	FVS2-25-NBR	6g
FVS2-33-HT1	13.6	30	27.5	18	FVS2-33-SI	FVS2-33-NBR	16g
FVS2-43-HT1	22.8	38	28	18	FVS2-43-SI	FVS2-43-NBR	19g
FVS2-53-HT1	51.3	50	34	18	FVS2-53-SI	FVS2-53-NBR	27g
FVS2-63-HT1	85	60	34	18	FVS2-63-SI	FVS2-63-NBR	34g



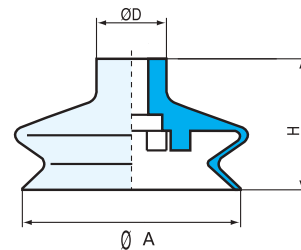
FVS2-6



FVS2-11 ~ 25



FVS2-33 ~ 43



FVS2-53 ~ 63

**Vacuum cup - 3 bellows**

Vacuum cups with 3 bellows provide better precision and positioning comparing with vacuum cup with 2 bellows

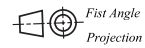
Vacuum cups with 3 bellows are recommended for gripping products on different planes (large deflection) in stead of spring systems. Meanwhile to gripe spherical or cylindrical objects at an angle (ball-joint effect).

Base on different request, provide 3 materials for option: Silicon Rubber. NBR. HT1(Traceless Function)  
 Factory advantage: to provide OEM & ODM to meet customers' special request

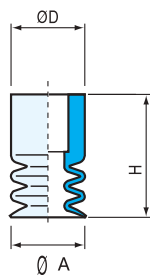
FVS3 - series



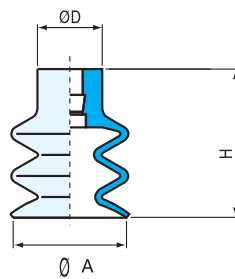
Dimensions (mm)



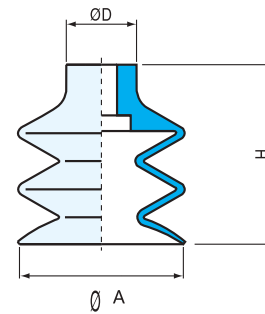
Model	F / (N)	A	H	D	SI / Transparant	NBR / Black	Weight
FVS3-5-HT1	0.5	5	13.5	7	FVS3-5-SI	FVS3-5-NBR	1g
FVS3-7-HT1	0.9	7	13.5	9	FVS3-7-SI	FVS3-7-NBR	2g
FVS3-9-HT1	1.1	9	15	9	FVS3-9-SI	FVS3-9-NBR	2g
FVS3-12-HT1	2.8	12	21	10	FVS3-12-SI	FVS3-12-NBR	2g
FVS3-14-HT1	3	14	23	10	FVS3-14-SI	FVS3-14-NBR	3g
FVS3-18-HT1	4.4	18	23	10	FVS3-18-SI	FVS3-18-NBR	6g
FVS3-20-HT1	4.6	20	23	10	FVS3-20-SI	FVS3-20-NBR	6g
FVS3-25-HT1	6.5	25	34	10	FVS3-25-SI	FVS3-25-NBR	8g
FVS3-32-HT1	12.1	32	37.5	18	FVS3-32-SI	FVS3-32-NBR	17g
FVS3-42-HT1	20.9	42	46	18	FVS3-42-SI	FVS3-42-NBR	27g
FVS3-52-HT1	28.9	52	49	18	FVS3-52-SI	FVS3-52-NBR	32g
FVS3-62-HT1	41.2	62	55	21	FVS3-62-SI	FVS3-62-NBR	60g



FVS3-5 ~ 9



FVS3-12 ~ 25



FVS3-32 ~ 62

**Sponge Vacuum cup - 1 bellow**

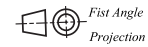
Vacuum cups with sponge are used for gripping products on different planes.

Base on different request, provide different sponge as option.

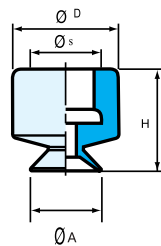
Factory advantage: to provide OEM & ODM to meet customers' special request

**FVS1-M - series**

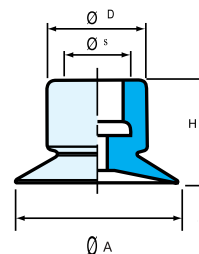
Dimensions (mm)



Model	A	H	D	S	Material
FVS1-M-10	10	13	11	7	Silicon rubber&Sponge
FVS1-M-12	12	15	11	7	Silicon rubber&Sponge
FVS1-M-15	15	11	11	7	Silicon rubber&Sponge
FVS1-M-20	20	11	11	7	Silicon rubber&Sponge
FVS1-M-25	25	11	11	7	Silicon rubber&Sponge
FVS1-M-30	30	11	11	7	Silicon rubber&Sponge
FVS1-M-40	40	13	11	7	Silicon rubber&Sponge
FVS1-M-50	50	15	12	7	Silicon rubber&Sponge



FVS1-M-10



FVS1-M-12 ~ 50

**Sponge Vacuum cup - 2 bellows**

*Vacuum cups with sponge are used for gripping products on different planes.*

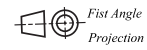
*Vacuum cups with sponge provide better angle & flexibility precision*

*Base on different request, provide different sponge material as option.*

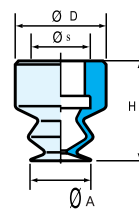
*Factory advantage: to provide OEM & ODM to meet customers' special request*

**FVS2-M - series**

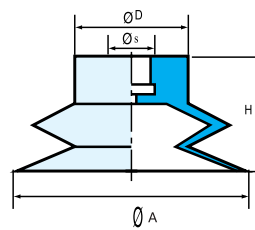
**Dimensions (mm)**



Model	A	H	D	S	Material
FVS2-M-10	10	13	11	7	Silicon rubber & Sponge
FVS2-M-12	12	15	11	7	Silicon rubber & Sponge
FVS2-M-15	15	11	11	7	Silicon rubber & Sponge
FVS2-M-20	20	11	11	7	Silicon rubber & Sponge
FVS2-M-25	25	11	11	7	Silicon rubber & Sponge
FVS2-M-30	30	11	11	7	Silicon rubber & Sponge
FVS2-M-40	40	13	11	7	Silicon rubber & Sponge
FVS2-M-50	50	15	12	7	Silicon rubber & Sponge



FVS2-M-10 ~ 25



FVS2-M-30 ~ 50

**Sponge Vacuum cup - 3 bellows**

*Vacuum cups with sponge are used for gripping products on different planes.*

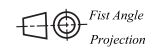
*Vacuum cups with sponge provide better angle & flexibility precision*

*Base on different request, provide different sponge material as option.*

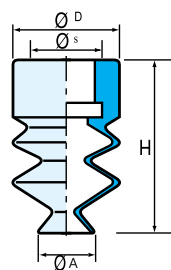
*Factory advantage: to provide OEM & ODM to meet customers' special request*

**FVS3-M - series**

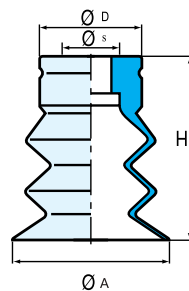
**Dimensions (mm)**



Model	A	H	D	S	Material
FVS3-M-10	10	13	11	7	Silicon rubber & Sponge
FVS3-M-12	12	15	11	7	Silicon rubber & Sponge
FVS3-M-15	15	11	11	7	Silicon rubber & Sponge
FVS3-M-20	20	11	11	7	Silicon rubber & Sponge
FVS3-M-25	25	11	11	7	Silicon rubber & Sponge
FVS3-M-30	30	11	11	7	Silicon rubber & Sponge
FVS3-M-40	40	13	11	7	Silicon rubber & Sponge
FVS3-M-50	50	15	12	7	Silicon rubber & Sponge



FVS3-M-10 ~ 30

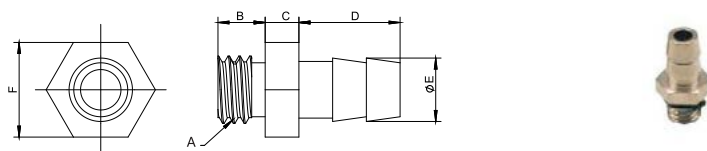
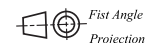


FVS3-M-40 ~ 50

*Air Connector Fitting*

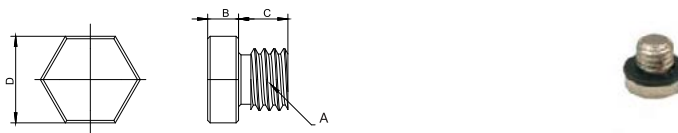
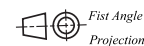
*FACB - series*

*Dimensions (mm)*



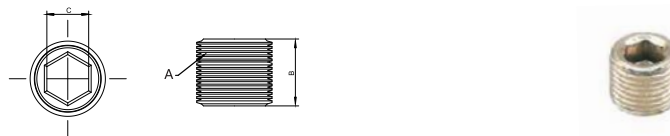
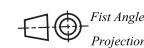
Model	A	B	C	D	E	F	Weight / g
FACB1-M3-4	M3	4	2	5.5	3.5	4.5	0.6
FACB1-M5-4	M5	5	2	6.5	3.5	7	1.4
FACB1-M5-6	M5	4.5	2.5	7	4.8	7	1.7

*Dimensions (mm)*



Model	A	B	C	D	Weight / g
FACB2-M3	M3	2	3	4.9	0.5
FACB2-M5	M5	2.5	4.5	7	1

*Dimensions (mm)*

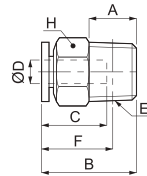
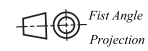


Model	A	B	C	Weight / g
FACB3-G18	G1/8	8	5	3
FACB3-G14	G1/4	9	6	6.2

*Air Hose Connector Fitting*

*Straight Type Connectors FACS - series*

*Dimensions (mm)*

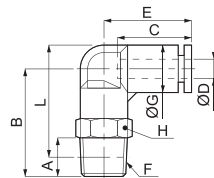
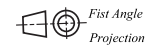


<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>H</i>	<i>Weight / g</i>
FACS4-M5	3	20	14.9	4	<b>M5</b>	17	10	6.3
FACS4-G1/8	8	21	14.9	4	<b>G1/8</b>	17	10	8.3
FACS4-G1/4	11	21	14.9	4	<b>G1/4</b>	15	14	16
FACS6-M5	3	22.1	17	6	<b>M5</b>	19.1	12	9.2
FACS6-G1/8	8	22.6	17	6	<b>G1/8</b>	18.6	12	9.3
FACS6-G1/4	11	24.6	17	6	<b>G1/4</b>	18.5	14	18
FACS6-G3/8	12	23.6	17	6	<b>G3/8</b>	17.2	17	28
FACS8-G1/8	8	27.9	18.2	8	<b>G1/8</b>	23.9	14	16
FACS8-G1/4	11	26.6	18.2	8	<b>G1/4</b>	20.6	14	16
FACS8-G3/8	12	23.9	18.2	8	<b>G3/8</b>	17.6	17	24
FACS10-G1/8	8	30.3	20.7	10	<b>G1/8</b>	26.3	17	24
FACS10-G1/4	11	29.5	20.7	10	<b>G1/4</b>	23.8	17	21
FACS10-G3/8	12	29.3	20.7	10	<b>G3/8</b>	23	17	27

*Air Hose Connector Fitting*

*L-Type Connectors FACL - series*

*Dimensions (mm)*

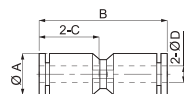
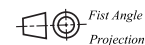


<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>Weight / g</i>
FACL4-M5	3	20.3	14.9	4	18	M5	10	10	8
FACL4-G1/8	8	23.2	14.9	4	18	G1/8	10	10	11
FACL4-G1/4	11	26.3	14.9	4	18	G1/4	10	14	21
FACL6-M5	3	22	16.8	6	19.8	M5	12.5	12	13
FACL6-G1/8	8	25	16.8	6	19.8	G1/8	12.5	12	14
FACL6-G1/4	11	28	16.8	6	19.8	G1/4	12.5	14	22
FACL6-G3/8	12	29.8	16.8	6	19.8	G3/8	12.5	17	35
FACL8-G1/8	8	28	18.1	8	22.7	G1/8	14.5	14	19
FACL8-G1/4	11	31	18.1	8	22.7	G1/4	14.5	14	24
FACL8-G3/8	12	32.8	18.1	8	22.7	G3/8	14.5	17	37
FACL10-G1/8	8	33	20.2	10	26.2	G1/8	17.5	17	31
FACL10-G1/4	11	36	20.2	10	26.2	G1/4	17.5	17	34
FACL10-G3/8	12	37	20.2	10	26.2	G3/8	17.5	21	43

*Air Hose Connector Fitting*

*Straight-Type Connectors FACS2 - series*

*Dimensions (mm)*

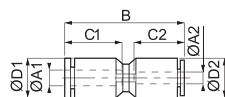
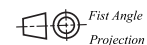


<i>Model</i>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>Weight / g</b>
FACS2-4	10	30.8	14.9	<b>4</b>	4.7
FACS2-6	12.5	34.9	17	<b>6</b>	6.5
FACS2-8	14.5	37.8	18.1	<b>8</b>	9.4
FACS2-10	17.5	43.4	20.2	<b>10</b>	16

*Straight-Type Converting Connectors*

*FACS3 - series*

*Dimensions (mm)*

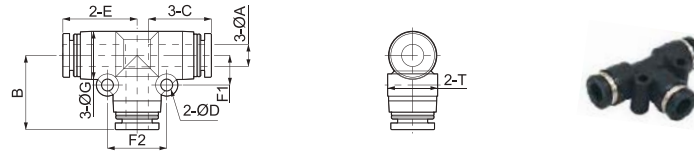
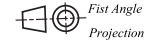


<i>Model</i>	<b>A1</b>	<b>A2</b>	<b>B</b>	<b>C1</b>	<b>C2</b>	<b>D1</b>	<b>D2</b>	<b>Weight / g</b>
FACS3-6-4	<b>6</b>	<b>4</b>	34.4	17	14.9	12.5	12.5	6.4
FACS3-8-4	<b>8</b>	<b>4</b>	36.6	18.1	14.9	14.5	10.7	7.2
FACS3-8-6	<b>8</b>	<b>6</b>	37.9	18.1	17	14.5	14.5	8.8
FACS3-10-6	<b>10</b>	<b>6</b>	39.8	20.2	17	17.5	13	12
FACS3-10-8	<b>10</b>	<b>8</b>	43.1	20.2	18.4	17.5	17.5	14

**Air Hose Connector Fitting**

**T-Type Connectors FACT 2-series**

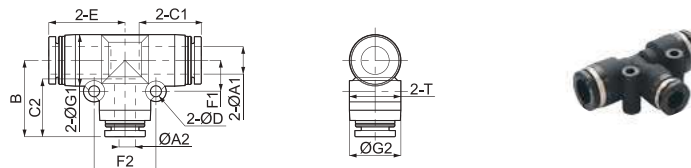
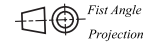
Dimensions (mm)



Model	A	B	C	D	E	F1	F2	G	T	Weight / g
FACT2-4	4	16.9	14.9	3.2	16.9	6.5	13	10	10	7.5
FACT2-6	6	20.1	17	3.2	20.05	8	16	13	13.5	11
FACT2-8	8	22.2	18.1	3.2	22.2	9	18	15	15	16
FACT2-10	10	25.2	19.6	4.2	25.2	12	24	17.5	17.5	25

**T-Type Converting Connectors FACT3-series**

Dimensions (mm)

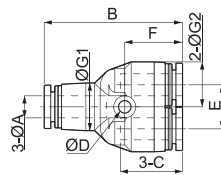


Model	A1	A2	B	C1	C2	D	E	F1	F2	G1	G2	T	Weight / g
FACT3-4-6	4	6	20.1	14.9	17	3.2	19.5	8	16	13	13	13.5	11
FACT3-6-4	6	4	19.5	17	14.9	3.2	20.1	8	16	13	13	13.5	11
FACT3-6-8	6	8	22.2	17	18.1	3.2	22.3	9	18	15	15	15.6	14
FACT3-8-4	8	4	21.7	18.1	14.9	3.2	22.2	9	18	14.5	12.5	15.1	14
FACT3-8-6	8	6	22.3	18.1	17	3.2	22.2	9	18	14.5	12.5	15.1	14
FACT3-8-10	8	10	25.2	18.1	20.2	4.2	24.9	12	24	17.5	17.5	17.5	22
FACT3-10-6	10	6	25	20.2	17	4.2	25.2	12	24	14.5	14.5	18.2	22
FACT3-10-8	10	8	24.9	20.2	18.1	4.2	25.2	12	24	14.5	14.5	18.2	23
FACT3-10-12	10	12	28.2	20.2	22.9	4.2	28.2	14	28	21	21	21.7	34

*Air Hose Connector Fitting*

*Y-Type Connectors FACY - series*

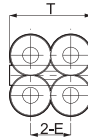
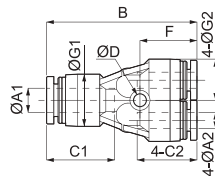
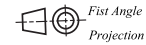
Dimensions (mm)



Model	A	B	C	D	E	F	G1	G2	T	Weight / g
FACY-4	4	32.8	14.9	3.4	11	14.1	10	10	10	7.6
FACY-6	6	37.7	17	3.4	12	15.8	13	13	13.5	11
FACY-8	8	42.4	18.1	3.4	14	17.2	15	15	14.5	16
FACY-10	10	48.4	20.7	4.5	18	19.5	18	18	18	26

*Y-Type Connectors FACY 2-series*

Dimensions (mm)

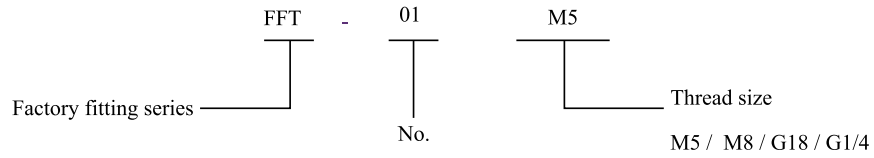


Model	A1	A2	B	C1	C2	D	E	F	G1	G2	T	Weight / g
FACY2-6-4	6	4	37.5	17	14.9	3.2	10	14.2	13	10.5	20.5	14
FACY2-8-6	8	6	42	18.2	17	3.5	13	15.8	14	13	26	21

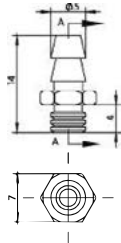
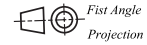
Vacuum Cups Fitting

FFT - series

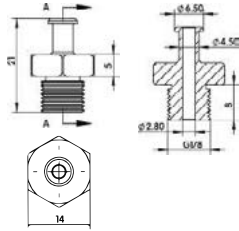
Model representation methods



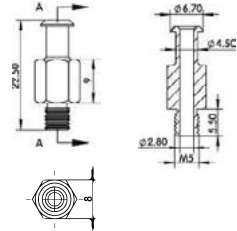
Dimensions (mm)



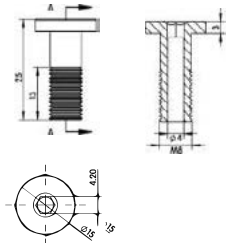
FFT-01M5



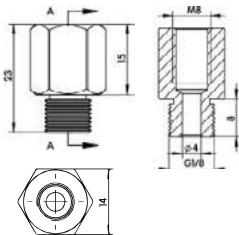
FFT-02G1/8



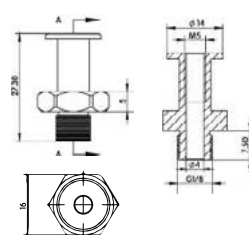
FFT-03M5



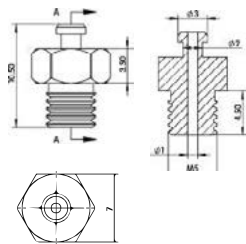
FFT-04M8



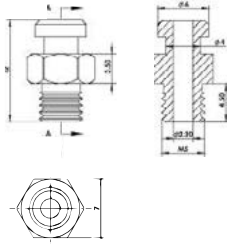
FFT-05G1/8



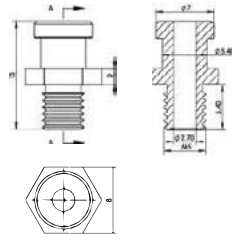
FFT-06G1/8



FFT-07M5



FFT-08M5

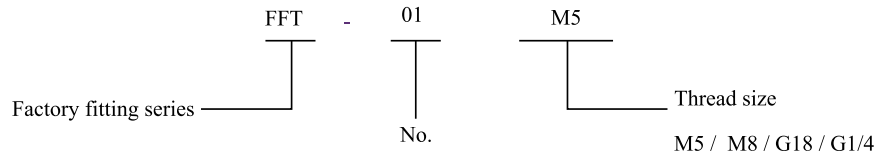


FFT-09M5

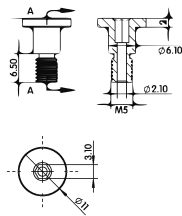
Vacuum Cups Fitting

FFT - series

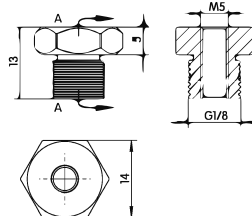
Model representation methods



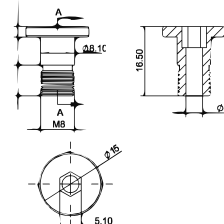
**Dimensions (mm)**



FFT-10M5

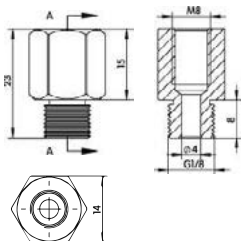
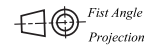


FFT-11G1/8

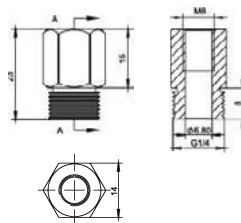


FFT-12M8

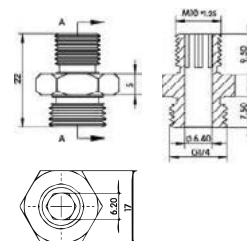
**Dimensions (mm)**



FFT-13G1/8



FFT-14G1/4

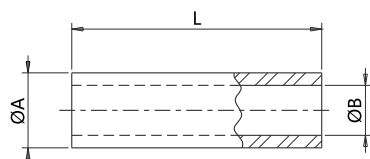
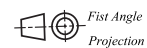


FFT-15-M10-G1/4

Air Hoses

FAH - series

Dimensions (mm)



Technical characteristics

T= -40° ÷ +60°C  
P= -0.99 ÷ + 10bar

Model	Colour	A [mm]	B [mm]	L [m]	Lm [g/m]
FAH4B	Black	4	2.5	100	10g
FAH4BU	Blue	4	2.5	100	10g
FAH4G	Green	4	2.5	100	10g
FAH4T	Transparent	4	2.5	100	10g
FAH4Y	Yellow	4	2.5	100	10g
FAH4R	Red	4	2.5	100	10g
FAH4O	Orange	4	2.5	100	10g
FAH6B	Black	6	4	100	19g
FAH6BU	Blue	6	4	100	19g
FAH6G	Green	6	4	100	19g
FAH6T	Transparent	6	4	100	19g
FAH6Y	Yellow	6	4	100	19g
FAH6R	Red	6	4	100	19g
FAH6O	Orange	6	4	100	19g
FAH8B	Black	8	6	100	38g
FAH8BU	Blue	8	6	100	38g
FAH10B	Black	10	8	100	58g
FAH10BU	Blue	10	8	100	58g

- A Outer diameter]
- B Inner diameter]
- L Length
- Lm Linear mass]
- P Operating pressure range]
- T Operating temperature range]



## VESSEL

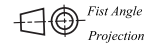


Air Nipper - - Blade Selection & Application

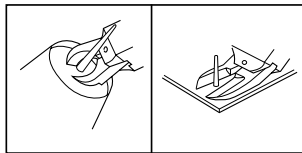
# Solution

Cut, grab, crimp and punch.

Dimensions (mm)

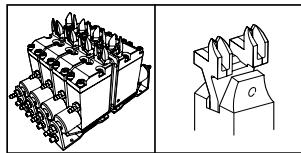


Cutting direct gate molded components



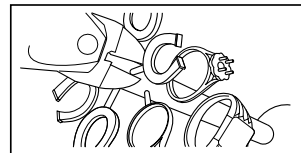
Cuts large diameter sprues such as garment cassettes, helmets, pipe joint parts, trash cans, planters.  
Superb durability in long term use.

Gate cut for multiple impression molded components



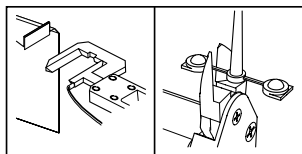
Compact, lightweight body and with a large selection of blade items, easy mounting on chuck board and standby jig. Achieves efficient cuts matching cycle time.

Taking products from a jewelry tree



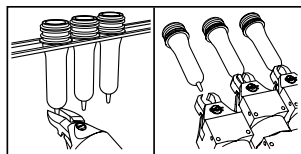
Cutting of precious metals for rings, necklaces etc. Superb durability and increased efficiency with powerful nipper blades.

Gate cutting for lenses, LGP, and transparent products



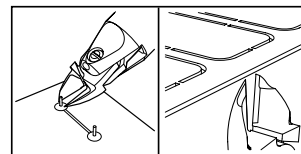
Various heated nippers prevent cracks and whitening, the decisive factor is the heating temperature of the blades and cutting speed. Supports demands for improved flexibility and high precision cutting.

Pre-form cutting for food and drug cases



Improved efficiency in pre-forming, nippers attached to flat finish pre-form molding machine. Cut precision is linked to product quality.

Cutting electronic components and around boards



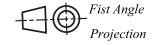
Optimal handy nippers for cutting lead lines after soldering to significantly reduce wrist strain. Substrate is attached to the desktop robot...

Air Nipper - - Blade Selection & Application

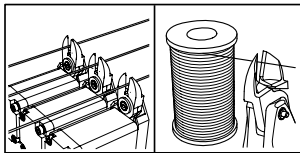
# Solution

Cut, grab, crimp and punch.

Dimensions (mm)

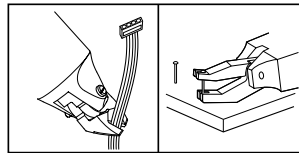


Wire cutting with coil winding machine



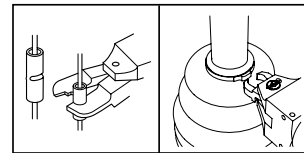
Attach to the nipper unit of automatic coil winding machine for power transformers, fan motors and ignition. Cutting thick diameter wires that can not be torn off.

Hand tools for dismantling in recycling plants



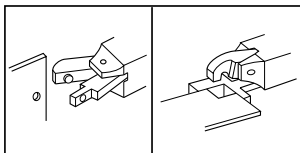
Cuts a variety of wires, copper tubing and steel bands in recycling plants such as PCS and OA equipment, pachinko machines, TVs, and refrigerators. Washing machines, etc. Nippers for the purpose of pulling out the pachinko machine pins.

Crimping task for solder less terminals



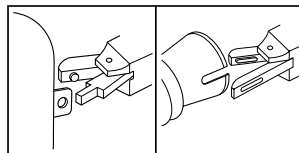
For crimping terminals with various wiring harnesses such as for switchboards, electrical products and lighting equipment. Less strain on fingers and wrists. Increased work efficiency for stop rings for auto parts.

Die cutter for aluminum products and plastic components



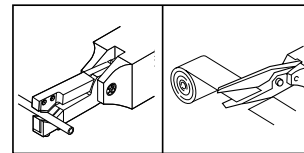
By support for separate blades, allows punching and form cutting of aluminum sash and thin plates.

Punching of blow molded products, punching slotted holes



Punching blow molded products, punching slotted holes, for containers that can not be punched and automobiles ducts. etc.

Other applications



Micro-edge air scissors that can cut various hard-to-cut fibers, carbon, aramid fibers, and soft plastic sheets. Nippers for cutting belt loops of jeans, peeling recycled golf balls, cutting edges with textile machinery, etc.

# Selection method for air nipper

## Check Materials

What is the cutting target (workpiece)

- Metal wire ——— Steel wire
  - Copper wire
  - Piano wire (not heat processed /HV32 or below), precious metals etc.
- Molded plastic ——— Soft plastic ( PP. PE. PS. PVC. PMMA. ASets.)
  - Hard plastic ( PPS. PA. PBT. LCP. ABS . POM. PC. GF. etc.)
- Other applications ——— Check materials, applications and work
  - (Bending, caulking, punching, robotic hand, and scissors)

## Check dimensions

- Metal ——— Angle (mm\*mm) (select model by cross-section area )
  - Round (Dia. mm)
- Plastic ——— Angle (mm\*mm) (select model by cross-section area )
- Other applications ——— Check materials, applications and work

## Usage

What is the State / Environment of the work Used mounted on  
 automated machinery and robots Used for manual work  
 Used mounted on a jig and so forth

## Select model

Chose a model suitable for the purpose

Choose based on Usage and cutting dimensions for the main unit and material and dimensions/ Shape for the blades.

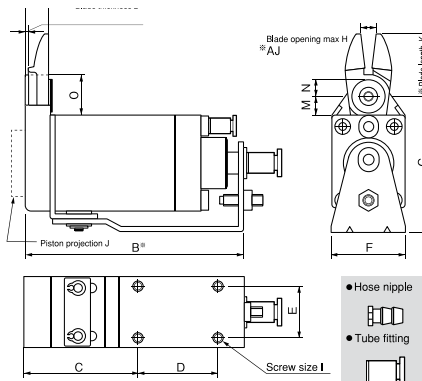
Refer to product specifications for the main unit /blade characteristics/usage, respectively. Also when selecting the machine, refer to capability selection chart.

The shape/material of the workpiece may not be compatible with standard products

### Capability selection chart

Types	Cutting materials							Application model	Air pressure (MPa)
	Copper wire	Steel wire Non-heat treated	Piano Wire HV 320 or below	Soft Plastic		Hard Plastic	Solerless terminals		
				Dia. mm	Cross select				
N • NS • NR	1.0mm	0.5mm	0.2mm	2.0mm	3.1 mm			NS2,N3,NS3,NR3	0.4~0.5
	1.0	0.5	0.3	2.0	3.1			N5,NS5,NR5	0.4~0.5
	1.6	1.0	0.5	3.0	7.0	2.0mm		N7,NS7,NR7	0.4~0.5
	1.8	1.2	0.5	4.0	12.5	2.6		N10,NS10L,NR10L	0.4~0.5
	2.3	1.7	0.6	4.5	15.8	4.0		N12	0.4~0.5
	2.6	2.0	1.0	7.0	38.4	5.0		N20,NS20,NR2 0	0.5~0.6
	3.3	2.8	1.2	10.0	78.5	6.5	1.25/2. 0	N30,NS30,NR3 0	0.5~0.6
	5.5	4.5	2.0	12.0	113.0	6.5		N50,NR50	0.5~0.6
With Pressure booster	2.6	1.6		5.0	19.6	4.0	12.5/2. 0	P-10L	
	3.0	2.2		8.0	50.2	6.0	2.0/5.5	P-20	
	4.8	4.0		13.0	132.6	7.0	~0.8	P-30	
	6.5	5.5						P-50	
NY	1.6	1.0		2.0	3.1	1.3		NY03	0.4~0.5
				3.0	7.0	2.0		NF05,NY0 5	0.4~0.5
				3.5	9.6	2.3		NF10,NY1 0	0.4~0.5
				4.0	12.5	2.6		NF15,NY1 5	0.4~0.5
				5.0	19.6	3.4		NY25	0.5~0.6
NT				1.5	1.7	1.0		NT03	0.4~0.5
				2.5	4.9	1.5		NT05	0.4~0.5
				3.5	9.6	2.3		NT10	0.4~0.5
				5.0	19.6	3.4		NT20	0.4~0.5
	AS, HS, BJ type		BBB	AP, PF, AJ type			ACD type		

NY



The horizontal slide enables space to be used effectively. The low profile of the main unit allows work to be removed without obstructing the operations of the chuck plate.

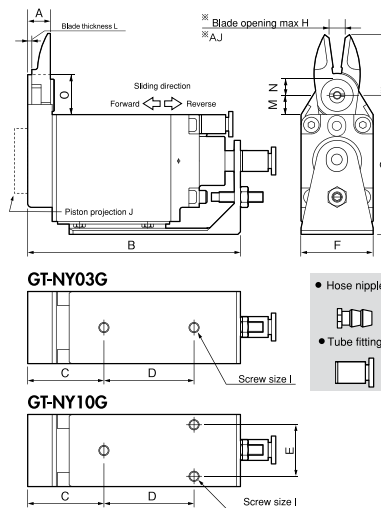
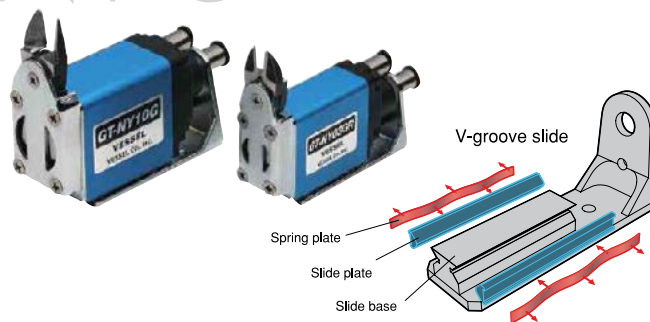
Capacity $\phi$ (mm) Soft Plastic Hard Plastic Copper Steel	Model No.	Size e (mm)															Air Consumption (cm <sup>3</sup> /str.)	Weight (g)	Slide Direction/ Distance (mm)	Spec. & Size of the Hose Port	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O					
3.0 2.0 1.6 1.0	GT-NY05	8.6	75.9	40.9	25	15	23	47.6	4	M4	3	22	1.6	8.5	6.25	16.5	48	155	Pull 0~3	W/hose nipple	
3.0 2.0 1.6 1.0	GT-NY05R																			Push 0~3	Hose I.D. $\phi$ 2.5mm
3.0 2.0 1.6 1.0	GT-NY05-4																			Pull 0~3	W/tube fitting
3.0 2.0 1.6 1.0	GT-NY05R-4																			Push 0~3	Hose I.D. $\phi$ 2.5XO.D. $\phi$ 4mm
3.5 2.3	GT-NY10																			8.8	82.1
3.5 2.3	GT-NY10R	Push 0~3	Hose I.D. $\phi$ 2.5mm																		
3.5 2.3	GT-NY10-4	Pull 0~3	W/tube fitting																		
3.5 2.3	GT-NY10R-4	Push 0~3	Hose I.D. $\phi$ 2.5XO.D. $\phi$ 4mm																		
4.0 2.6	GT-NY15	10.2	93	48	35	25	33	58	8	M4	5	27	2	7.5	6.25	16.5	136	319	Pull 0~3		
4.0 2.6	GT-NY15R																			Push 0~3	Hose I.D. $\phi$ 2.5mm
4.0 2.6	GT-NY15-4																			Pull 0~3	W/tube fitting
4.0 2.6	GT-NY15R-4																			Push 0~3	Hose I.D. $\phi$ 2.5XO.D. $\phi$ 4mm
5.0 3.4	GT-NY25																			12.5	108.5
5.0 3.4	GT-NY25R	Push 0~5	Hose I.D. $\phi$ 4mm																		
5.0 3.4	GT-NY25-6	Pull 0~5	W/tube fitting																		
5.0 3.4	GT-NY25R-6	Push 0~5	Hose I.D. $\phi$ 4XO.D. $\phi$ 6mm																		

※ Blade length (K) and opening max. (H) is the dimension adjusted for standard blade (AJ type). ※ Air Pressure...0.4~0.5 MPa (NY25 type: 0.5~0.6)  
 ※ B refers to the distance from the cut position for PUSH style models, and the distance from the start position for PULL style models.

GT-NY03G/10G Slide-Off Air Nippers Horizontal-Type

Patented

NY-G



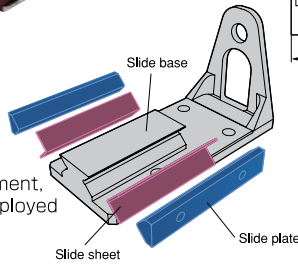
VESSEL's patented, V-groove slide base ensures constant, stable positioning. The unit is not subject to inclined loads, and has achieved high precision gate cutting performance.

Capacity $\phi$ (mm) Soft Plastic Hard Plastic	Model No.	Size (mm)															Air Consumption (cm <sup>3</sup> /str.)	Weight (g)	Slide Direction/ Distance (mm)	Spec. & Size of the Hose Port	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O					
2.0 1.3	GT-NY03G	8.6	74.5	29.5	30	-	19	46.5	3	M4	0	21	1.6	7.5	5.25	14.5	37	160	Pull 0~3	W/hose nipple	
2.0 1.3	GT-NY03GR																			Push 0~3	Hose I.D. $\phi$ 2.5mm
2.0 1.3	GT-NY03G-4																			Pull 0~3	W/tube fitting
2.0 1.3	GT-NY03GR-4																			Push 0~3	Hose I.D. $\phi$ 2.5XO.D. $\phi$ 4mm
3.5 2.3	GT-NY10G	8.8	82.6	29.6	35	20	28	54	6	M4	5	24	1.6	7.5	6.25	15.5	68	275	Push 0~3	W/hose nipple	
3.5 2.3	GT-NY10GR																			Push 0~3	Hose I.D. $\phi$ 2.5mm
3.5 2.3	GT-NY10G-4																			Pull 0~3	W/tube fitting
3.5 2.3	GT-NY10GR-4																			Push 0~3	Hose I.D. $\phi$ 2.5XO.D. $\phi$ 4mm

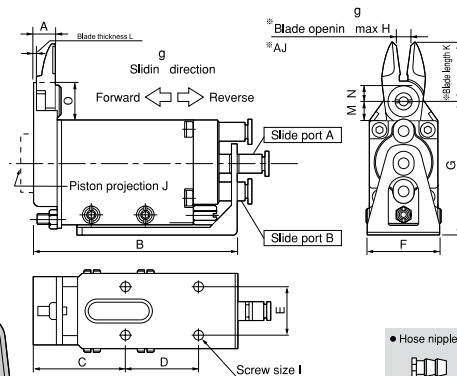
※ Blade length (K) and opening max. (H) is the dimension adjusted for standard blade (AJ type). ※ Air Pressure...0.4~0.5 MPa

※ Blade is optional. Note that forward and backward -facing blades are available

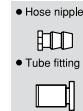
# NY-S



The springless slide construction of the main unit ensures smooth movement, and a V-groove slide base has been employed for high precision positioning.



**WARNING**  
 Injecting air into slide port A slides the nippers in reverse.  
 Injecting air into slide port B slides the nippers forward.

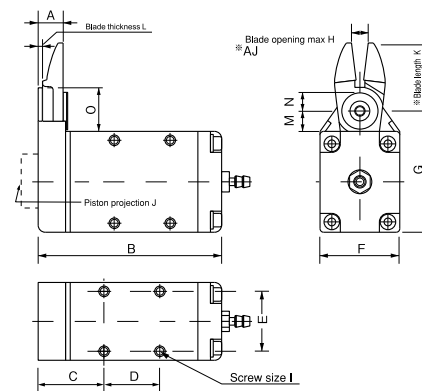


Capacity $\phi$ (mm) Soft Plastic Hard Plastic	Model No.	Size (mm)															Air Consumption (cm <sup>3</sup> /str.)	Weight (g)	Slide Direction/ Distance (mm)	Spec. & Size of the Hose Port	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O				W/tube fitting	Hose I.D. $\phi$ 2.5×O.D. $\phi$ 4mm
3.5 2.3	GT-NY10S	8.8	84.5	38	30	20	32	55	6	M4	5	24	1.6	7.5	6.25	15.5	68	300	0~3.5	W/tube fitting	Hose I.D. $\phi$ 2.5×O.D. $\phi$ 4mm
5.0 3.4	GT-NY25S	12.5	106.5	47	40	30	47	72	9	M5	2	31	2.5	10.5	7	20.5	184	695	0~5.0	W/tube fitting	Hose I.D. $\phi$ 4×O.D. $\phi$ 6mm

※Blade length (K) and opening max. (H) is the dimension adjusted for standard blade (AJ type). ※Air Pressure: NY10S : 0.4~0.5 MPa / NY25S : 0.5~0.6 MPa

## GT-NF05/10/15 Type-F Air Nippers

# NF



These compact, lightweight nippers have been designed for easy mounting inside equipment and to enable secure mounting under high-density mounting conditions.

Capacity $\phi$ (mm) Soft Plastic Hard Plastic Copper Steel	Model No.	Size (mm)															Air Consumption (cm <sup>3</sup> /str.)	Weight (g)	Spec. & Size of the Hose Port	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O			W/hose nipple	Hose I.D. $\phi$ 2.5mm× $\phi$ 4mm
3.0 2.0 1.6 1.0	GT-NF05	8.6	59.9	21.9	17	18	23	39.5	4	M3	3	22	1.6	8.4	6.25	16.4	43	101	W/hose nipple	Hose I.D. $\phi$ 2.5mm× $\phi$ 4mm
3.5 2.3 1.7 1.1	GT-NF10	8.8	65.1	23.1	20	22	28	43.5	6	M3.5	5	24	1.6	7.4	6.25	15.4	63	143	W/hose nipple	Hose I.D. $\phi$ 2.5mm× $\phi$ 4mm
4.0 2.6 1.8 1.2	GT-NF15	10.2	73	25	25	26	33	48.5	8	M4	5	27	2	7.4	6.25	16.4	128	219	W/hose nipple	Hose I.D. $\phi$ 2.5mm× $\phi$ 4mm

※Blade opening max. (K) is the dimension adjusted for standard blade (AJ type). Mounting screw for NF10 (M3.5) is regarded as spare part. ※Air Pressure: 0.4~0.5 MPa

## Slide-off air nipper horizontal-type blades

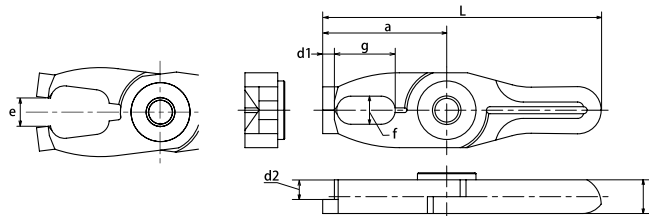
<b>AJ</b> Straight blades for plastic		<b>Plastic</b>						
<b>RAJ</b>	AJ/ This is a vertical set of blades with an unbeveled cutting edge. You can apply it at a right angle to the gate. RAJ/ This is a reverse bevel of AJ type. AJB/ This has a brazed carbide tip, suitable for cutting hard plastic or plastic containing glass fiber.							
<b>AJB</b>								
Model No.	a	b	Size (mm)			Weight (g)	Material	Application model
NY03AJ	21	7	4.5	10.5	3	48	Special alloy steel	GT-NY03G(-4)
NY03RAJ	21	7	4.5	10.5	3	48	Special alloy steel	GT-NY03GR(-4)
NY05AJ	22	7	5	10.5	4	53	Special alloy steel	GT-NY05(-4) / NF05
NY05RAJ	22	7	5	10.5	4	53	Special alloy steel	GT-NY05R(-4) / NF05
NY05AJB	22	7	5	10.5	4	53	Sintered Alloy	GT-NY05(-4) / NF05
NY10AJ	24	7.2	5	12	6	57	Special alloy steel	GT-NY10(-4) / NY10G(-4) / NF10 / NY10S
NY10RAJ	24	7.2	5	12	6	57	Special alloy steel	GT-NY10R(-4) / NY10GR(-4) / NF10 / NY10S
NY10AJB	24	7.2	5	12	6	57	Sintered Alloy	GT-NY10(-4) / NY10G(-4) / NF10 / NY10S
NY15AJ	27	8.2	5.5	13	8	65	Special alloy steel	GT-NY15(-4) / NF15
NY15RAJ	27	8.2	5.5	13	8	65	Special alloy steel	GT-NY15R(-4) / NF15
NY15AJB	27	8.2	5.5	13	8	65	Sintered Alloy	GT-NY15(-4) / NF15
NY25AJ	31	10	6	16	9	77	Special alloy steel	GT-NY25(-6) / NY25S
NY25RAJ	31	10	6	16	9	77	Special alloy steel	GT-NY25R(-6) / NY25S
NY25AJB	31	10	6	16	9	77	Sintered Alloy	GT-NY25(-6) / NY25S

<b>AJL</b> Straight long blades for plastic		<b>Plastic</b>						
<b>AJL</b>	AJL/ This is a long type set of straight blades. This is useful when there is distance between the nippers and the gate cut portion of the workpiece.							
Model No.	a	b	Size (mm)			Weight (g)	Material	Application model
NY03AJL	27	7	4.5	10.5	4	54	Special alloy steel	GT-NY03G(-4)
NY05AJL	31	7	5	10.5	5.5	62	Special alloy steel	GT-NY05(-4) / NF05
NY10AJL	33	7.2	5	12	8	66	Special alloy steel	GT-NY10(-4) / NY10G(-4) / NF10 / NY10S
NY15AJL	38	8.2	5.5	13	11	76	Special alloy steel	GT-NY15(-4) / NF15
NY25AJL	46	10	6	16	13	92	Special alloy steel	GT-NY25(-6) / NY25S

<b>AJT</b> Thin, straight blades for plastic		<b>Plastic</b>						
<b>AJT</b>	AJT/ This is a set of straight blades with a thin cutting edge. It can cleanly trim cross sections without remnants.							
Model No.	a	b	Size (mm)			Weight (g)	Material	Application model
NY03AJT	21	7	2.5	10.5	3	48	Special alloy steel	GT-NY03G(-4)
NY05AJT	22	7	3	10.5	4	53	Special alloy steel	GT-NY05(-4) / NF05
NY10AJT	24	7.2	3	12	6	57	Special alloy steel	GT-NY10(-4) / NY10G(-4) / NF10 / NY10S
NY15AJT	27	8.2	3.5	13	8	65	Special alloy steel	GT-NY15(-4) / NF15

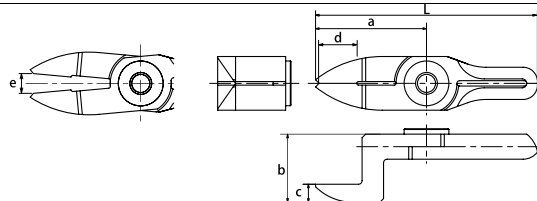
## Slide-off air nipper horizontal-type blades

<b>AD</b>	Lift blades for plastic	<b>Plastic</b>
	AD/ This is used for batch processing of the three-dimensional gate such as ride gate.	



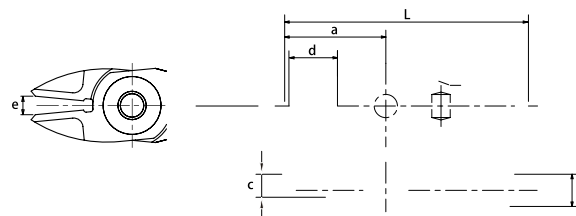
Model No.	Size (mm)			d1 (mm)	d2 (mm)	e (mm)	L (mm)	Weight (g)	Material	Application model
NY10AD	26.5	7.2	6×13	2.5	4.2	6	59.5	31	Special alloy steel	GT-NY10(-4) / NY10G(-4) / NF10 / NY10S
NY15AD	30	8.2	7×14	3	4.7	8	68	45	Special alloy steel	GT-NY15(-4) / NF15
NY25AD	35	10	8×17	4	6	9	81	75	Special alloy steel	GT-NY25(-6) / NY 25S

<b>AH</b> <b>RAH</b>	Crank blades for plastic	<b>Plastic</b>
	AH/ This is a set of blades with a clamped cutting edge for plastic. It is effective when there are obstructions or the gate is narrow. RAH/ This is a reverse bevel of AH type used when installing the main units face-to-face.	



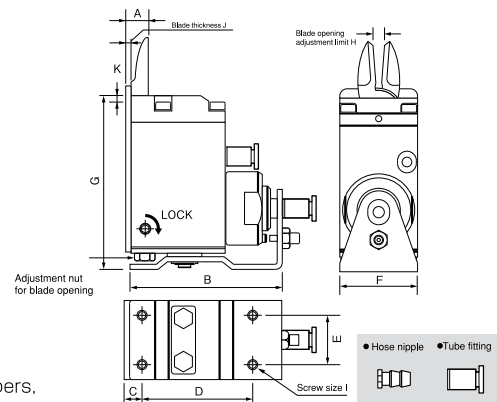
Model No.	Size (mm)					Weight (g)	Material	Application model	
NY05AH	31	19	5	10.5	5.5	62	37	Special alloy steel	GT-NY05(-4) / NF05
NY05RAH	30	12	5	10.5	5	61	31	Special alloy steel	GT-NY05R(-4) / NF05
NY10AH	33	20	5	12	8	66	43	Special alloy steel	GT-NY10(-4) / NY10G(-4) / NF10 / NY10S
NY15AH	38	21.5	5.5	13	11	76	63	Special alloy steel	GT-NY15(-4) / NF15
NY15RAH	35	13.2	5.5	13	9	73	52	Special alloy steel	GT-NY15R(-4) / NF15
NY25AH	46	24	6	17	13	92	110	Special alloy steel	GT-NY25(-6) / NY 25S
NY25RAH	42	16	6	16	12	88	89	Special alloy steel	GT-NY25R(-6) / NY 25S

<b>BJ</b> <b>RBJ</b>	Straight thin blades for metal	<b>Metal</b>
	BJ/ This is a set of vertical blades with an unbeveled cutting edge for metal. RBJ/ This is a reverse bevel of BJ type.	



Model No.	Size (mm)					Weight (g)	Material	Application model	
NY05BJ	22	7	5	10.5	4	53	22	Special alloy steel	GT-NY05(-4) / NF05
NY05RBJ	22	7	5	10.5	4	53	22	Special alloy steel	GT-NY05R(-4) / NF05

NI



Blade gape is adjustable, and fine adjustments are easy to make after mounting the nippers, ensuring clean, unblemished cut surfaces.

Capacity φ (mm) Soft Plastic Hard Plastic	Model No.	Size (mm)											Air Consumption (cm <sup>3</sup> /str)	Weight (g)	Slide Direction/ Distance (mm)	Spec. & Size of the Hose Port			
		A	B	C	D	E	F	G	H	I	J	K							
1.5 1.0	GT-NT03															27	178	Pull 0~3	W/hose nipple Hose I.D. φ2.5mm
1.5 1.0	GT-NT03R	9	62	7	43	14	19	68.1	1.5~3	M3	2	5			27	178	Push 0~3	W/tube fitting Hose I.D. φ2.5XO.D. φ4mm	
1.5 1.0	GT-NT03-4															27	178	Pull 0~3	W/tube fitting Hose I.D. φ2.5XO.D. φ4mm
1.5 1.0	GT-NT03R-4															27	178	Push 0~3	W/tube fitting Hose I.D. φ2.5XO.D. φ4mm
2.5 1.5	GT-NT05															47	325	Pull 0~3	W/hose nipple Hose I.D. φ2.5mm
2.5 1.5	GT-NT05R	9	64	7	45	20	32	71.1	3~6	M4	2	5			47	325	Push 0~3	W/tube fitting Hose I.D. φ2.5XO.D. φ4mm	
2.5 1.5	GT-NT05-4															47	325	Pull 0~3	W/tube fitting Hose I.D. φ2.5XO.D. φ4mm
2.5 1.5	GT-NT05R-4															47	325	Push 0~3	W/tube fitting Hose I.D. φ2.5XO.D. φ4mm
3.5 2.3	GT-NT10															82	515	Pull 0~3	W/hose nipple Hose I.D. φ2.5mm
3.5 2.3	GT-NT10R	11	73	8	53	24	38	88.1	4~7	M4	2	5			82	515	Push 0~3	W/tube fitting Hose I.D. φ4XO.D. φ6mm	
3.5 2.3	GT-NT10-6															82	515	Pull 0~3	W/tube fitting Hose I.D. φ4XO.D. φ6mm
3.5 2.3	GT-NT10R-6															82	515	Push 0~3	W/tube fitting Hose I.D. φ4XO.D. φ6mm
5.0 3.4	GT-NT20															203	930	Pull 0~8	W/hose nipple Hose I.D. φ4mm
5.0 3.4	GT-NT20R	14	103	10	80	28	44	102.1	4.5~9	M5	2	6			203	930	Push 0~8	W/tube fitting Hose I.D. φ4XO.D. φ6mm	
5.0 3.4	GT-NT20-6															203	930	Pull 0~8	W/tube fitting Hose I.D. φ4XO.D. φ6mm
5.0 3.4	GT-NT20R-6															203	930	Push 0~8	W/tube fitting Hose I.D. φ4XO.D. φ6mm

※ Blade opening adjustment limit (H) is the dimension adjusted for standard blade (AJ type). ※ Air Pressure...0.4~0.5 MPa

### Slide-off air nipper vertical-type blades

AJ	Straight blades for plastic	Plastic							
AJH	AJ/ This is a set of vertical blades with an unbeveled cutting edge. You can apply it at a right angle to the gate. AJH/ This has a brazed high-speed steel tip suitable for cutting hard plastic. AJB/ This has a brazed carbide tip used for cutting hard plastic or plastic containing glass fiber. Improved durability.								
AJB									
Model No.	Size (mm)						Weight (g)	Material	Application model
	a	b	c	d	e	L			
NT03AJ	24	7	4	11	3	59	20	Special alloy steel	GT-NT03 type
NT05AJ	29	7	5	15	6	65	30	Special alloy steel	GT-NT05 type
NT05AJH	29	7	5	15	6	65	30	High Speed Steel	
NT05AJB	29	7	5	15	6	65	30	Sintered Alloy	
NE5AJ	24	7	3.5	12	6	60	35	Special alloy steel	GT-NT10 type
NT10AJ	35	9	6	17	7	82	62	Special alloy steel	
NT10AJH	35	9	6	17	7	82	76	High Speed Steel	
NT10AJB	35	9	6	17	7	82	76	Sintered Alloy	
NE10AJ	27	9	4.5	12	7	74	70	Special alloy steel	GT-NT20 type
NT20AJ	40	12	6	20	9	97	120	Special alloy steel	
NT20AJH	40	12	6	20	9	97	120	High Speed Steel	
NT20AJB	40	12	6	20	9	97	120	Sintered Alloy	

**AJL** Straight long blades for plastic **Plastic**

AJL/ This is a long type set of straight blades. This is useful when there is distance between the nippers and the gate cut portion of the workpiece.

Model No.	a	b	Size (mm)			e	L	Weight (g)	Material	Application model
NT05AJL	36	7	5	15	7	72	39	Special alloy steel	GT-NT05 type	
NT10AJL	47	9	6	17	9	94	62	Special alloy steel	GT-NT10 type	
NT20AJL	57	12	6	20	12	114	156	Special alloy steel	GT-NT20 type	

**AJT** Thin, straight blades for plastic **Plastic**

AJT/ This is a set of straight blades with a thin cutting edge. It can cleanly finish cross sections without remnants.

Model No.	a	b	Size (mm)			e	L	Weight (g)	Material	Application model
NT03AJT	24	7	2.3	11	3	59	19	Special alloy steel	GT-NT03 type	
NT05AJT	29	7	3	15	6	65	29	Special alloy steel	GT-NT05 type	
NT10AJT	35	9	4	17	7	82	65	Special alloy steel	GT-NT10 type	

**AJY** Thin, straight blades for plastic **Plastic**

AJY/ This is effective when the width between the opposing gates is too short and the thickness of the blades will not go in.

Model No.	a	b	Size (mm)			e	L	Weight (g)	Material	Application model
NT03AJY	24	7	2.5	11	3	59	19	Special alloy steel	GT-NT03 type	
NT05AJY	29	7	5	15	6	65	29	Special alloy steel	GT-NT05 type	
NT10AJY	35	9	4	17	7	72	82	Special alloy steel	GT-NT10 type	

### Slide-off air nipper vertical-type blades

<b>AD</b>	Lift blades for plastic		<b>Plastic</b>							
	AD/ This is used for batch processing of the three-dimensional gate such as ride gate.									
Model No.	a	Size (mm) b	f×g	d1 (mm)	d2 (mm)	e (mm)	L (mm)	Weight (g)	Material	Application model
NT05AD	31.5	7	6×18	2.5	4.5	6	67.5	37	Special alloy steel	GT-NT05 type
NT10AD	39	9	8×21.5	4	5	7	86	65	Special alloy steel	GT-NT10 type
NT20AD	46	12	9×24.5	6	7	9	103	141	Special alloy steel	GT-NT20 type

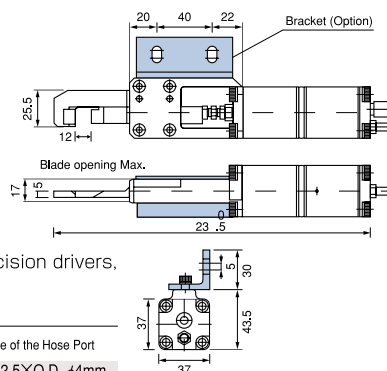
<b>AJV</b>	V shaped straight blades for plastic		<b>Plastic</b>						
	AVJ/ This is suitable for gate processing when the cross section is curved or the cut end must not be left.								
Model No.	a	b	Size (mm) c	d	e	L	Weight (g)	Material	Application model
NT05AJV	29	7	5	15	6	65	29	Special alloy steel	GT-NT05 type
NT10AJV	35	9	6	17	7	82	63	Special alloy steel	GT-NT10 type

<b>AE</b>	Nipping blades for p		<b>Plastic</b>						
	AE/ Used for processing plastic gates such as ride gates and discard gates.								
Model No.	a	b	Size (mm) f×g	d	e	L	Weight (g)	Material	Application model
NT05AE	29	7	6×18	7	6	65	36	Special alloy steel	GT-NT05 type
NT10AE	35	9	8×21.5	9	7	82	75	Special alloy steel	GT-NT10 type

**GT-NK10 Thrust-Cut Air Nipper**

NK



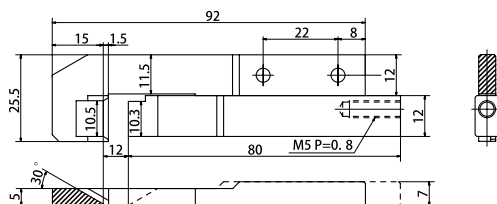
These nippers are equipped with a foot switch and are linked to high precision drivers, enabling the cutting of film-shaped gates from the thin end, preventing wrinkles around the cut.

Capacity $\phi$ (mm)	Model No.	Air Consumption (cm <sup>3</sup> /str.)	Air Pressure (MPa)	Weight (g)	Applied Pressure (N)	Spec. & Size of the Hose Port
ABS Plastic 5	<b>GT-NK10</b>	110	0.4~0.5	800	735	Hose I.D. $\phi$ 2.5×O.D. $\phi$ 4mm

•Hose Coupling: I.D.  $\phi$ 4 × O.D.  $\phi$ 6 mm •Piston stroke...Max.12 mm

**Thrust-Cut Air Nipper blades**

Model No.	Thrust-Cut Air Nipper blades	Material
<b>NK10AJ</b>	This is a dedicated set of blades for GT-NK10. Suitable for processing of film gates attached to robot hands	Plastic

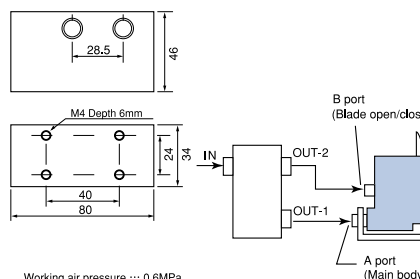
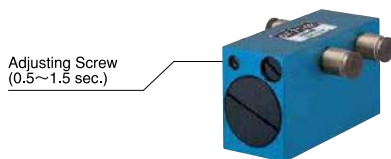


Model No.	Size (mm)	Shape	O.A.L. (mm)	Weight (g)	Material	Application model
NK10AJ	As above	For metal cutting (Knife type)	95	96	Special alloy steel	GT-NK10

**Related items**

**GT-TC-02 Timing Controller**

TC

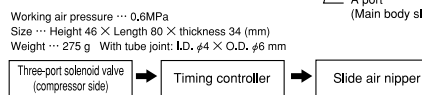


Connected between the compressor and the air nippers, the timing controller enables adjustments to the slide and cutting timing. (Approximately 0.5 seconds to 1.5 seconds)

Connectable nippers (Reference)

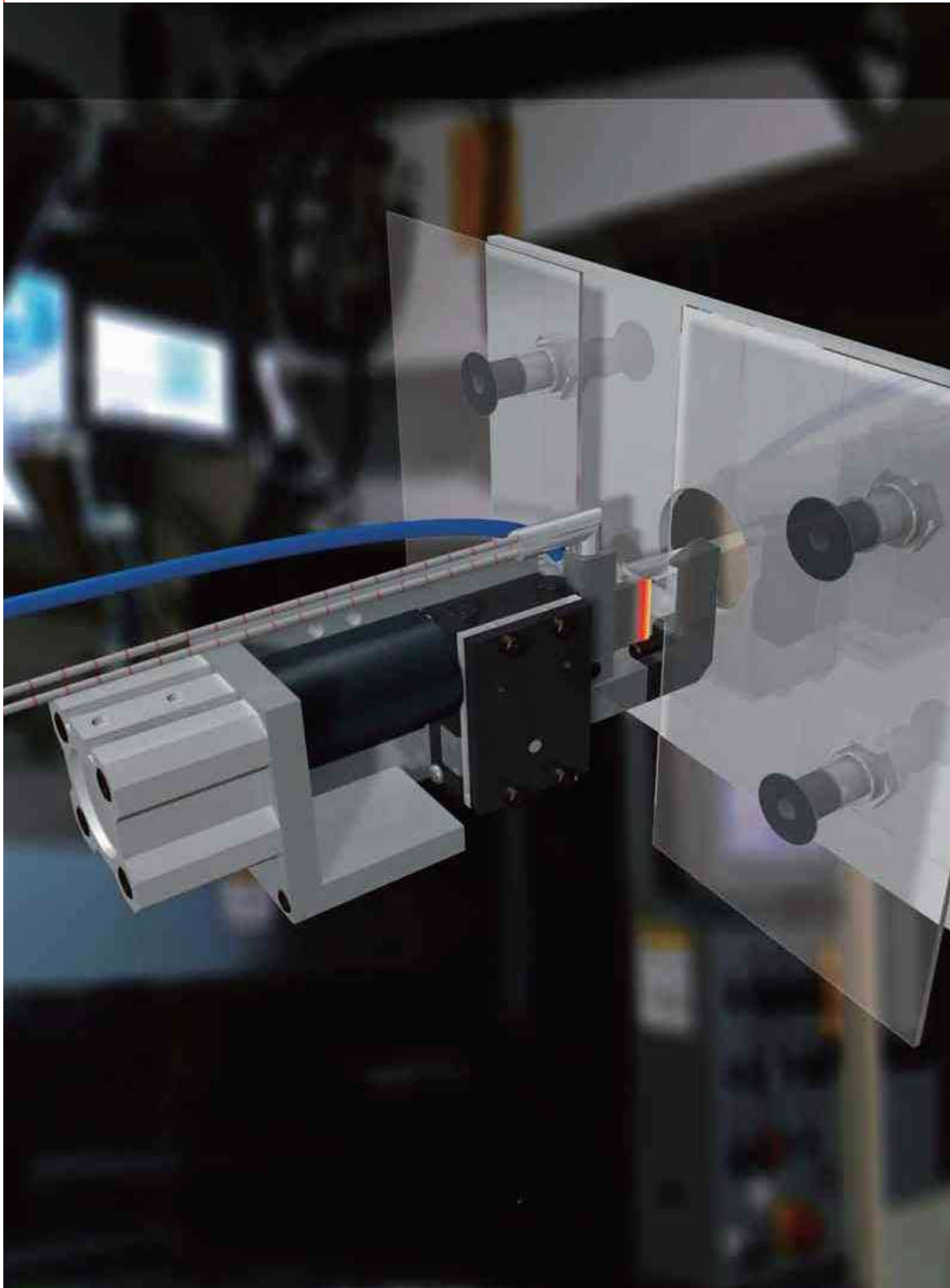
No. GT-Connectable unit	NY05	NY10	NY15	NY25	NT03	NT05	NT10	NT20	NB20	NB30	NB20LW	NB30LW
	4	3	1	1	6	4	2	1	2	1	2	1

(pcs)



**VESSEL**

**Heat air nippers**



NKH

Highly durable PTFE Plating blades; melted resin does not adhere to them.  
Improved durability of blades with High-Speed chip brazed.  
Easier blade replacement than conventional models; take out the blade unit and exchange with the new one.



Requires separately sold Hydro Controller

Customized blade lengths and cylinder capacities available

Model No.	Cutting Capacity φ (mm) Acrlil	Blade Edge Temp. (MAX °C)	Air Consumption (cm <sup>3</sup> /str.)	Piston Stroke (mm)	Weight (g)
GF-NKH20XL-25/NKH20XR-25	10x1.5	180	60	10	690

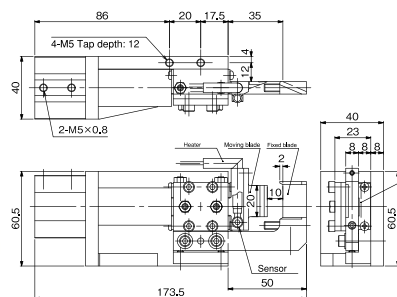
• Air Pressure: 0.6MPa • Working air hose inner diameter: 4mm  
 ※ The above weight is only a product, excluding the weight of heater and sensor.  
 ※ 200V AC/220V AC/240V AC heaters are also available to order.  
 • Included heater: HTL-28.5-6.25-300L 80W/100V Cord length 300mm Recommended temp. 140°C Weight: 13g  
 • Included temperature sensor: SNO-300L-H Thermal couple type K Recommended temp. 140°C Cord length 300mm Weight: 7g

Blades Specifications

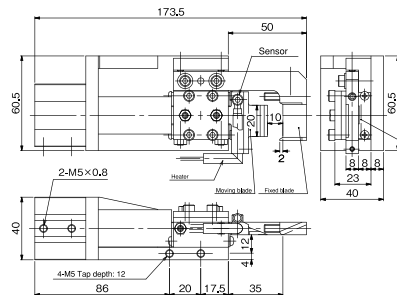
Material	Blade Shape	Blade Opening (mm)	Cutting blade effective (mm)	Weight (g)
Special Alloy Steel	Knife type (resin)	10	20	125

- Option Parts**
- Hydro-converter (Recommended: KOGANEI AHC 32×50)
  - Working fluid: Petroleum hydraulic fluid or turbine oil with antifoaming agent additive (VG22~100)
  - Temperature controller (DTC-001)

NKH20XL-25



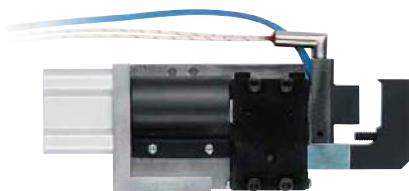
NKH20XR-25



GT-NKH20A/20AR Heat Air Nippers (Air Hydro Type)

NKH

Air-hydro cylinders produce high power from air and oil.  
These units are ideal for high precision cuts required for products such as optical resin lenses.



Requires separately sold Hydro Controller

Customized blade lengths and cylinder capacities available

Model No.	Cutting Capacity φ (mm) Acrlil	Blade Edge Temp. (MAX °C)	Air Consumption (cm <sup>3</sup> /str.)	Piston Stroke (mm)	Weight (g)
GT-NKH20A-25/20AR-25	10x1.5	180	60	10	720

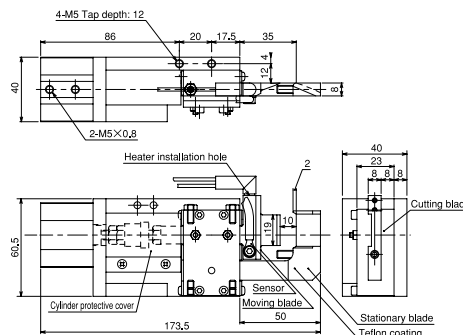
• Included heater • Included temperature sensor  
 • Air Pressure: 0.6MPa • Working air hose inner diameter: 4mm  
 ※ 200V/240V heaters are also available to order.

Blades Specifications

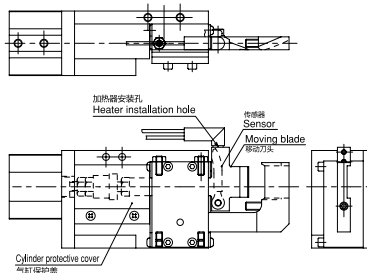
Material	Blade Shape	Blade Opening (mm)	Cutting blade effective (mm)	Weight (g)
Special Alloy Steel	Knife type (resin)	10	19	125

- Option Parts**
- Hydro-converter (Recommended: KOGANEI AHC 32×50)
  - Working fluid: Petroleum hydraulic fluid or turbine oil with antifoaming agent additive (VG22~100)
  - Temperature controller (DTC-001)

GT-NKH20A-25 (Forward-facing blades)

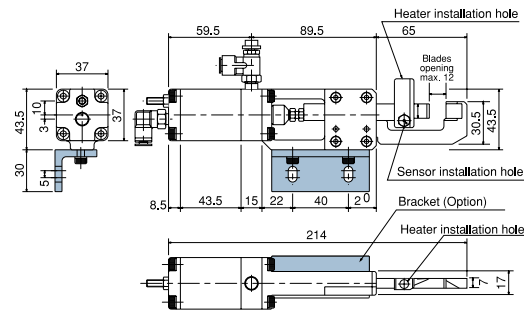


GT-NKH20AR-25 (Backward-facing blades)



# NKH

Speed control of cut speed and heater temperature allows for variable cutting surface solutions for extremely high precision cutting demands.



Model No.	Cutting Capacity φ (mm) Acril	Blade Edge Temp. (MAX °C)	Cutting Cycle (sec/cut)	Air Consumption (cm <sup>3</sup> /str.)	Piston Stroke (mm)	Weight (g)
GT-NKH10	7x1.5	200	4~5	73	12	715

•Included heater: 80W/120V Cord length: 300mm  
 •Included temperature sensor: Thermal couple type K (Nickel-Chromium/Nickel-Aluminum)  
 Cord length: 1,000mm  
 •Air Pressure: 0.5~0.6 MPa

Option Parts • Temperature controller (DTC-001)

### Blades Specifications

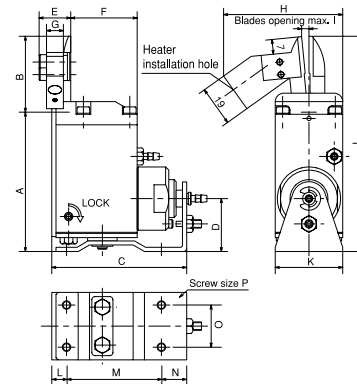
Model No.	Material	Blade Shape	Blade Opening (mm)	Cutting blade effective (mm)	Weight (g)
NKH10AJ/NKH10RAJ	Special Alloy Steel	Knife type (resin)	12	10	137

## Heat Air Nippers

### GT-NTH05/10 Heat Air Nippers (Vertical sliding type)

# NTH

One blade is fixed in position, facilitating easy gate alignment. In addition, a slide function presses the product into position.

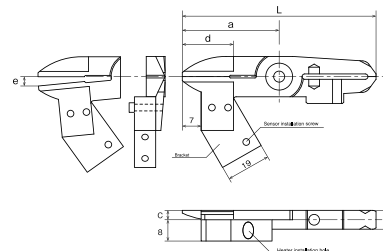


Model No.	Cutting Capacity φ (mm) Acril	Blade Edge Temp. (MAX °C)	Cutting Cycle (sec/cut)	Air Consumption (cm <sup>3</sup> /str.)	Slide Distance (mm)	Weight (g)	Dimensions (mm)															
							A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
GT-NTH05	2.5	200	4~5	47	0~3	325	66.1	36	64	25.1	15	31.5	8	56.5	3.5	102.1	32	7	45	12	20	M4
GT-NTH10	3.5	200	4~5	82	0~3	515	83	47	73	29	16.2	37.5	8	63	4.5	130	38	8	53	12	24	M4

•Included heater: 80W/120V Cord length: 300mm  
 •Included temperature sensor: Thermal couple type K (Nickel-Chromium/Nickel-Aluminum) Cord length: 1,000mm  
 •Air Pressure: 0.4~0.5MPa

### Blades Specifications

Model No.	Material	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)
NTH05AJ	Special Alloy Steel	36	7	3.5	15	3.5
NTH10AJ	Special Alloy Steel	47	9	4.7	17	4.5



Model No.	L (mm)	Weight (g)	Cutting Capacity φ (mm) Acril	Setting temp. (MAX °C)	Application model
NTH05AJ	72	40	2.5	200	GT-NT05(-4)/GT-NT05R(-4)
NTH10AJ	94	88	3.5	300	GT-NT10(-6)/GT-NT10R(-6)

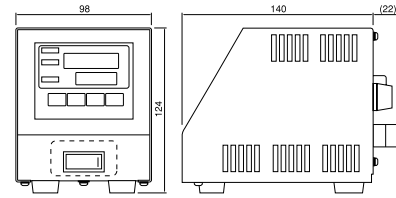
HTH type blade weight does not include heater and sensor.

Option Parts • Temperature controller (DTC-001)

### DTC-001 Benchtop Temperature Controller

# DTC

The heating element can be connected directly to the main unit, a useful feature that saves labor during wiring installation. Compact construction enables the unit to be easily carried, allowing for changing the work site at any time.



Please inform us of the product number of the heat nipper when placing an order.

Model No.	Temperature range Thermocouple K (°C)	Power supply (V)	Power consumption (with 100 VAC input)	Ambient temperature and humidity (°C)	Protection fuse	Weight (g)
DTC-001	0~200	AC100~240	Approx. 3W (Approx. 5VA) [With no load]	0~40 RH35~85% (No condensing)	One 1.5A fuse is incorporated.	900

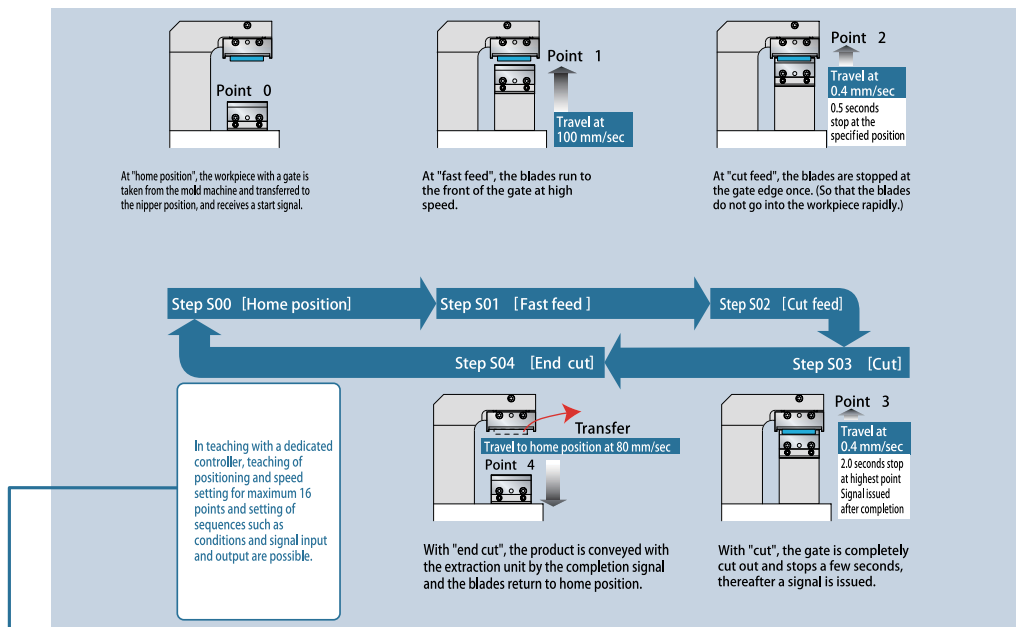
※Please ensure the input voltage in prior to operation as it is directly connected to the heater.

Option Parts  Power supply cable : Model No. DTC-001-

- Cable for connection to the terminal block is necessary to be included.
- (N/ A) Cable not necessary.
- 2m power cable w/ Japanese type plug (A-type)
- 2m power cable w/ European type plug (C-type)
- (N/ A) Cable not necessary.

### Special Controller (optionally available)

### Practical example of gate-cut



#### Practical example of input data

Teaching content		Home position	Fast feed	Cut feed	Cut	End cut
Point data	Point No.	0	1	2	3	4
	Positioning (*)	Home position	Leaving 7 mm	Leaving 0.5 mm	Maximum	value
	Speed setting	-	100 mm/sec	0.4 mm/sec	0.4 mm/sec	80 mm/sec
	Pushing force setting	-	-	-	-	-
	Acceleration setting	-	-	-	-	-
Sequencer data	Step No.	S00	S01	S02	S03	S04
	Waiting for positioning to complete	-	-	-	-	-
	Waiting for external input conditions	-	-	-	-	-
	Delay timer	-	-	0.5sec	2.0sec	-
	Specified external output	-	-	-	ON	-

(\*) Input of positioning is actually done with a numerical value.

**VESSEL** Air nippers for Cutting & Crimping

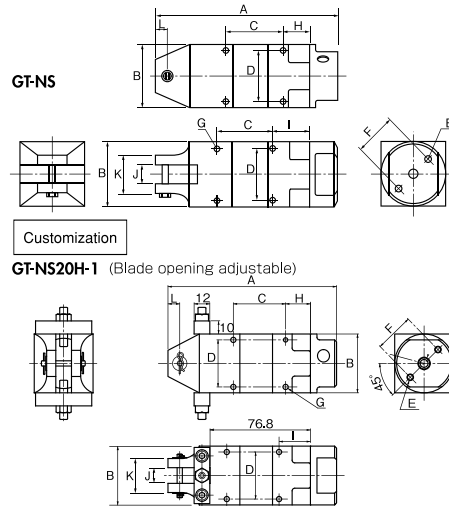


## Air Nippers

### GT-NS3/5/7/10L/20/30 Square Air Nippers

# NS

VESSEL provides a generous selection of blades for all wire cutting needs, including resin product gate cuts and automatic welding equipment.



The main body end is 180 degree rotative.

Two suction (intake) ports are provided and so the suction position can be optionally changed depending on the mounting place.

Capacity $\phi$ (mm)				Model No.	Size (mm)											Air Consumption (cm <sup>3</sup> /str.)	Air Pressure (MPa)	Weight (g)	Hose coupling	
Soft Plastic	Hard Plastic	Copper	Steel		A	B	C	D	E	F	G	H	I	J	K					L
2.0	1.0	0.5		GT-NS3	110	23	40	19	M3 Depth8	17	M3 Depth3.5	19	24	7	23	7	45	0.4~0.5	95	Rc1/8
2.0	1.0	0.5		GT-NS5	94	30	30	24	M4 Depth10	20	M3 Depth5	14	19	7	23	7	64	0.4~0.5	135	
3.0	2.0	1.6	1.0	GT-NS7	113	36	30	28	M4 Depth10	24	M4 Depth5.5	18	23	9	23	7	116	0.4~0.5	215	
4.0	2.6	1.8	1.2	GT-NS10L	113	36	30	28	M4 Depth10	24	M4 Depth5.5	18	23	12	26	7	116	0.4~0.6	215	
7.0	5.0	2.6	2.0	GT-NS20	129	45	40	36	M5 Depth12	30	M4 Depth7	19	24	12	26	9	230	0.5~0.6	370	
10.0	6.5	3.3	2.8	GT-NS30	170	56	60	46	M6 Depth12	40	M5 Depth10	20	30	17	36	15	584	0.5~0.6	685	
7.0	5.0	2.6	2.0	GT-NS20H-1	129	45	40	36	M5 Depth12	30	M4 Depth7	19	24	12	26	9	230	0.5~0.6	455	

\*Air hose in er dia. : 5mm \*Overall Length/Weight: Accessories not included.

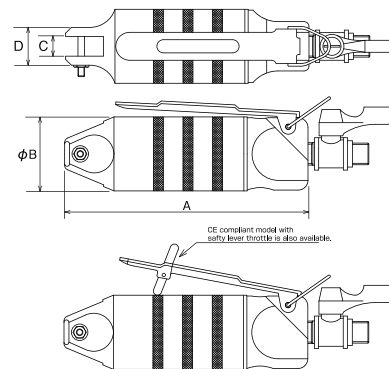
※Before mounting of exclusive/automatic machines, check the following product dimensions. (Frame O.D., screw dia. (screw to screw) dimensions, etc.)

※Model GT-NS50 is a special order item. Please contact VESSEL for details.

### GT-N3/5/7/10/12/20/30/50 Hand Held Air Nippers

# N

VESSEL's special order blades provide solutions for a virtually unlimited range of needs, leading to safer, and more efficient work with less fatigue.



\* N20, N30 and N50 have the air cock.

Capacity $\phi$ (mm)				Model No.	Size (mm)				Air Consumption (cm <sup>3</sup> /str.)	Air Pressure (MPa)	Weight (g)	Body	Hose coupling
Soft Plastic	Hard Plastic	Copper	Steel		A	B	C	D					
2.0	1.0	0.5		GT-N3	112	23	7	14	45	0.4~0.5	95	Rc1/8	R1/4
2.0	1.0	0.5		GT-N5	103	30	7	17	64	0.4~0.5	135	Rc1/8	
3.0	2.0	1.6	1.0	GT-N7	123	34	9	17	116	0.4~0.5	180	Rc1/4	
4.0	2.6	1.8	1.2	GT-N10	132	34	9	17	116	0.4~0.5	185	Rc1/4	
4.5	4.0	2.3	1.7	GT-N12	142	36	12	20	116	0.5~0.6	210	Rc1/4	
7.0	5.0	2.6	2.0	GT-N20	156	45	12	23	230	0.5~0.6	375	Rc1/4	
10.0	6.5	3.3	2.8	GT-N30	193	56	17	30	584	0.5~0.6	625	Rc1/4	
		5.5	4.5	GT-N50	237	75	25.2	43	1,170	0.5~0.6	1,220	Rc1/4	

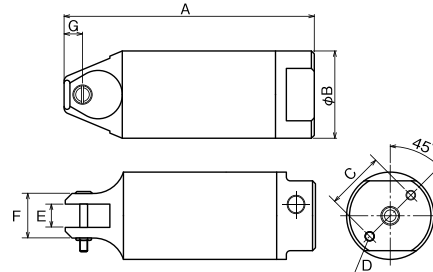
\*Hose coupling: R 1/4 \*Air hose inner dia. : 5mm \*Overall length: Accessories, Hunger not included. \*Weight: Accessories not included.

## Air nippers

### GT-NR3/5/7/10L/20/30/50 Air Nipper Round-Type without Lever

NR

The NR20 body contains the installation scale of two sides.



The main body end is 180 degree rotative.

Two suction (intake) ports are provided and so the suction position can be optionally changed depending on the mounting place.

Soft Plastic	Hard Plastic	Copper	Steel	Model No.	A	B	C	Size (mm) D	E	F	G	Air Consumption (cm <sup>3</sup> /str.)	Air Pressure (MPa)	Weight (g)	Hose coupling
2.0		1.0	0.5	GT-NR3	110	23	17	M3 Depth8	7	14	7	45	0.4~0.5	70	Rc1/8
2.0		1.0	0.5	GT-NR5	94	30	20	M4 Depth10	7	17	7	64	0.4~0.5	110	
3.0	2.0	1.6	1.0	GT-NR7	113	34	22	M4 Depth10	9	17	7	116	0.4~0.5	150	
4.0	2.6	1.8	1.2	GT-NR10L	113	36	24	M4 Depth10	12	20	7	116	0.4~0.6	215	
7.0	5.0	2.6	2.0	GT-NR20	129	45	30	M5 Depth12	12	23	9.5	230	0.5~0.6	280	
10.0	6.5	3.3	2.8	GT-NR30	165	56	40	M6 Depth12	17	30	10.5	584	0.5~0.6	505	
12.0	6.5	5.5	4.5	GT-NR50	222	75	50	M8 Depth12	25.2	43	15	1,170	0.5~0.6	1,190	

\*Air hose inner dia. : 5mm \*Overall length/Weight: Accessories not included.

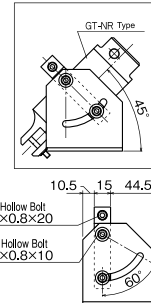
\*\*Before mounting of exclusive/automatic machines, check the following product dimensions (Frame O.D., screw dia. (screw to screw) dimensions, etc.)

### GT-NR10LST/20ST/30ST/50ST Stand

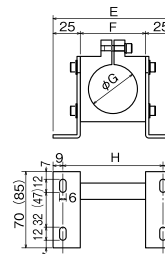
Stands for installing air nippers.  
The angle is easily adjustable.



Mounting example



Model No.	E	Size (mm) F G H	Weight (g)
NR10LST	102	52 36 84	335
NR20ST	110	60 45 92	385
NR30ST	130	80 56 112	535
NR50ST <small>Option</small>	150	100 75 132	835



Figures in ( ) are for the NR50ST

### P-10L/20/30/50 Powerful Intensifiers (With Extra pressure Booster)

This unit is to be used in case the originally required pressure is not obtainable by the limit of space and air pressure.



P-20



Capacity φ (mm)				Application model	Model No.	Size (mm)		Air Consumption (cm <sup>3</sup> /str.)	Air Pressure	Weight (g)
Soft Plastic	Hard Plastic	Copper	Steel			A	B			
5.0	4.0	2.6	1.6	NS10L, NR10L, NT12	P-10L	71	36	223	Up to 0.5MPa	115
8.0	6.0	3.0	2.2	N20, NS20, NR20	P-20	87	45	508	Up to 0.5MPa	215
13.0	7.0	4.8	4.0	N30, NS30, NR30	P-30	92	56	956	Up to 0.5MPa	330
		6.5	5.5	N50, NR50	P-50	133	75	2,670	Up to 0.5MPa	840

\*Above figures of overall length and the weight are defined for the extra booster cases only. And these figures in the installation

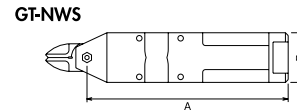
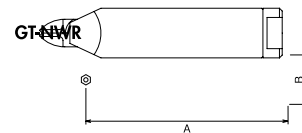
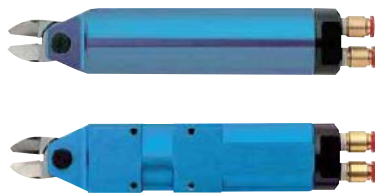
### All Nippers

#### GT-NWR10/20/30 GT-NWS1/10/20/30 Double Action Air Nippers

Patented

# NWR · NWS

Blade opening and closing is air piston driven.  
Having no spring mechanism in the main unit facilitates maintenance operations.



Model No.	Capacity $\phi$ (mm)			Air Consumption (cm <sup>3</sup> /str.)	Applied Pressure (N)	Air Pressure (MPa)	Size (mm)		Weight (g)
	Copper	Steel	ABS Plastic				A	B	
Double Action Air Scissors (Round Type without Lever)									
GT-NWR10	1.8	1.2	4.0	116	588	0.4~0.5	146	$\phi$ 36	280
GT-NWR20	2.6	2.0	6.5	230	1,372	0.5~0.6	165	$\phi$ 45	523
GT-NWR30	3.3	2.8	9.5	584	2,744	0.5~0.6	230.5	$\phi$ 56	980
Double Action Air Scissors (Square Type)									
GT-NWS1	1.0	0.5	2.0	45	294	0.4~0.5	95	23X20	116
GT-NWS10	1.8	1.2	4.0	116	588	0.4~0.5	146	36X36	356
GT-NWS20	2.6	2.0	6.5	230	1,372	0.5~0.6	165	45X45	610
GT-NWS30	3.3	2.8	9.5	584	2,744	0.5~0.6	230.5	56X56	1115

#### GT-NB20/30/20LW/30LW Slide-Off Air Nipper Bracket-Type

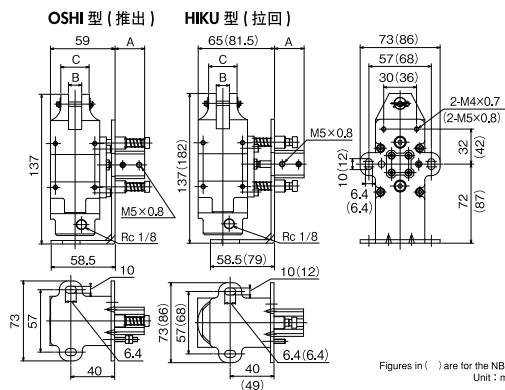
# NB

VESSEL has achieved smooth, continuous slide movement even for large diameter gate cuts, which produce a large shock at each cut.

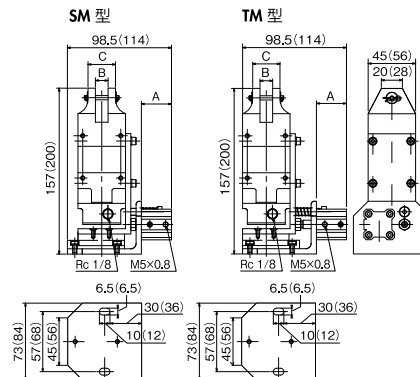


**GT-NB20LW-10TM**  
Accurate slide function with slide stroke

**GT-NB20**



Figures in ( ) are for the NB3  
Unit : mm



Figures in ( ) are for the NB30L  
Unit : mm

Model No.	Size (mm)			Slide Direction/Distance (mm)	Weight (g)
	A	B	C		
GT-NB20 (5-OSHI)	22	12	26	Push 0~5	755
GT-NB20 (5-HIKU)	22	12	26	Pull 0~5	755
GT-NB20 (10-OSHI)	27	12	26	Push 0~10	755
GT-NB20 (10-HIKU)	27	12	26	Pull 0~10	755
GT-NB30 (10-HIKU)	28.5	17	36	Pull 0~10	1,420
GT-NB20LW-10TM	28.5	12	26	Pull 0~10	795
GT-NB30LW-10TM	29.5	17	36	Pull 0~10	1,315
GT-NB20LW-10SM	28.5	12	26	Push 0~10	795
GT-NB30LW-10SM	29.5	17	36	Push 0~10	1,325

**AS** **Standard** **Metal**

**HS** AS/ Standard type. This is a general set of blades used for cutting copper wire and steel wire. HS/ Improved durability with brazed high-speed steel.

Model No.	Size (mm)							Weight (g)	Material	Application model
	a	b	c (°)	d	e	f	L			
N3AS	24	7	25	12	4	10.5	64	35	Special alloy steel	GT-N3 / NS3 / NR3
N3HS	24	7	25	12	4	10.5	64	35	High Speed Steel	GT-N3 / NS3 / NR3
N5AS	24	7	25	12	4	10.5	64	40	Special alloy steel	GT-N5 / NS5 / NR5
N5HS	24	7	25	12	4	10.5	64	40	High Speed Steel	GT-N5 / NS5 / NR5
N7AS	27	9	30	13.5	4	12.5	81	80	Special alloy steel	GT-N7 / NS7 / NR7
N7HS	27	9	30	13.5	4	12.5	81	80	High Speed Steel	GT-N7 / NS7 / NR7
N10AS	27	9	30	13.5	5	12.5	91	85	Special alloy steel	GT-N10
N10HS	27	9	30	13.5	5	12.5	91	85	High Speed Steel	GT-N10
N10LAS	35	12	30	20	5	15	89	120	Special alloy steel	GT-NS10L / NR10L
N12AS	35	12	30	20	5	15	105	135	Special alloy steel	GT-N12
N12HS	35	12	30	20	5	15	105	135	High Speed Steel	GT-N12
N20AS	35	12	30	20	9	15	95	140	Special alloy steel	GT-NS20 / NR20 / N20
N30AS	43	17	30	25	9	18	127	370	Special alloy steel	GT-NS30 / NR30 / N30

**BJ** **Straight blades for metals** **Metal**

BJ/ This is a set of vertical blades with an unbeveled cutting edge for metal.

Model No.	Size (mm)							Weight (g)	Material	Application model
	a	b	c	d	e	L				
NW1BJ	20	5	3	10.5	3.5	50	16	Special alloy steel	GT-NWR1 / NWS1	
N3BJ	24	7	5.8	13	5	64	35	Special alloy steel	GT-N3 / NS3 / NR3	
N5BJ	24	7	5.8	13	4	64	40	Special alloy steel	GT-N5 / NS5 / NR5	
N7BJ	27	9	7.5	13	5	81	75	Special alloy steel	GT-N7 / NS7 / NR7	
NW10BJ	30	9	6	14	5	85	76	Special alloy steel	GT-NWR10 / NWS10	
NW20BJ	40	12	6	21.5	8	100	142	Special alloy steel	GT-NWR20 / NWS20	
NW30BJ	55	17	8	29.5	11	140	367	Special alloy steel	GT-NWR30 / NWS30	

**AG** **Powerful cutting blades** **Metal**

AG/ This is a set of blades with increased strength with a shorter cutting edge than the standard type. Increases the pressure because it cuts at the base of the blades.

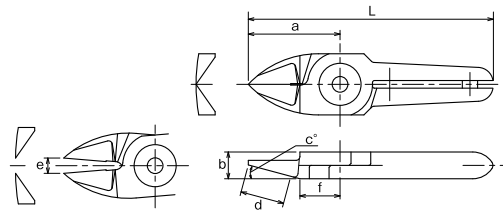
Model No.	Size (mm)							Weight (g)	Material	Application model
	a	b	c (°)	d	e	f	L			
N20AG	28	12	40	12	7	15	88	135	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N20HS	26	12	40	10	7	13.5	86	135	High Speed Steel	GT-NS20 / NR20 / N20 / NB20

### Air nipper standard blades for metal

<b>Powerful cutting blades with carbide tips</b>		<b>Metal</b>								
<b>BBB</b>	BBB/ With carbide tips suitable for cutting hard wire such as high steel wire and piano wire.									
Model No.	a	b	c (°)	Size (mm)	e	f	L	Weight (g)	Material	Application model
N30BBB	36	17	40	18	7	18	120	365	Sintered Alloy	GT-NS30 / NR30 / N30 / NB30
N50BBB	46	25	35	19	9	24	166	955	Sintered Alloy	GT-NR50 / N50
<b>Clipper blades with carbide tips</b>		<b>Metal</b>								
<b>BFB</b>	BFB/ The shape is clipper type. With carbide tips, suitable for cutting metal wire and thin pipe. AS/ Standard clipper type blades.									
<b>AS</b>										
Model No.	a	b	c	Size (mm)	d	e	L	Weight (g)	Material	Application model
N20BFB	35	12	5	17	8	95	150	150	Sintered Alloy	GT-NS20 / NR20 / N20 / NB20
N50AS	60	25	10	30	11	180	950	950	Special alloy steel	GT-NR50 / N50
<b>Crimp edge for solderless terminals</b>		<b>Metal</b>								
<b>ACD</b>	ACD/ This is a set of blades for crimping solderless terminals. (Bare terminal 1.25 sq/2.0 sq)									
Model No.	a	b	c	Size (mm)	e	L	Weight (g)	Material	Application model	
N30ACD	40	17	5.5	8	126	335	335	Special alloy steel	GT-NS30 / NR30 / N30 / NB30	

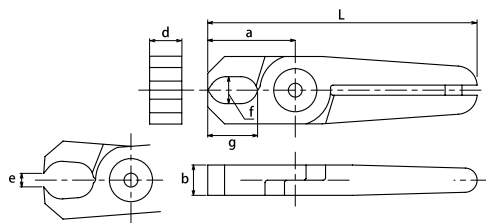
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<b>AP</b>	<b>For plastic</b>	<b>Plastic</b>
<p>AP/ This is a standard set of blades used to cut plastic. A broad, gentle curve is provided in the cross section for gate processing where the cut end must not be left. (The cutting edge is curved.)</p>		



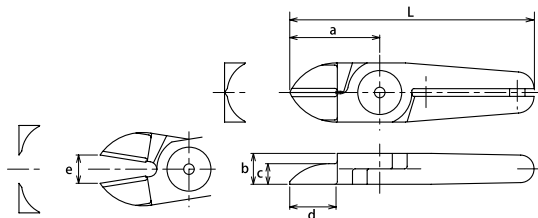
Model No.	a	b	c(°)	Size (mm)				Weight (g)	Material	Application model
				d	e	f	L			
N3AP	24	7	15	11.5	4	10.5	64	35	Special alloy steel	GT-N3 / NS3 / NR3
N5AP	24	7	15	11.5	4	10.5	64	40	Special alloy steel	GT-N5 / NS5 / NR5
N7AP	27	9	30	11.5	4	14.5	81	80	Special alloy steel	GT-N7 / NS7 / NR7
N10AP	27	9	30	11.5	5	14.5	91	85	Special alloy steel	GT-N10
N10LAP	35	12	15	16	5	15	89	120	Special alloy steel	GT-NS10L / NR10L
N12AP	35	12	15	16	5	15	105	135	Special alloy steel	GT-N12
N20AP	35	12	15	16	11	15	95	125	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N30AP	66	17	15	38	16	24	150	380	Special alloy steel	GT-NS30 / NR30 / N30 / NB30

<b>AE</b>	<b>Nipping blades for plastic</b>	<b>Plastic</b>
<p>AE/ Used for processing plastic gates such as ride gates and discard gates.</p>		



Model No.	a	b	Size (mm)		d	e	L	Weight (g)	Material	Application model
			f	g						
N3AE	20	7	6x11	7	3.5	60	35	Special alloy steel	GT-N3 / NS3 / NR3	
N5AE	20	7	6x6.6	7	3.5	60	40	Special alloy steel	GT-N5 / NS5 / NR5	
N7AE	26	9	8x14.8	9	4	80	85	Special alloy steel	GT-N7 / NS7 / NR7	
N20AE	28	12	10x15.5	12	8	88	135	Special alloy steel	GT-NS20 / NR20 / N20 / NB20	
N30AE	45	17	13x28	17	12	129	395	Special alloy steel	GT-NS30 / NR30 / N30 / NB30	

<b>AJ</b>	<b>Thin. straight blades for plastic</b>	<b>Plastic</b>
<p>AJ/ This is a set of vertical blades with an unbeveled cutting edge for plastic. You can apply it at a right angle to the gate.</p>		



Model No.	a	b	Size (mm)				Weight (g)	Material	Application model
			c	d	e	L			
NW10AJ	30	9	6	14	5	85	76	Special alloy steel	GT-NWR10 / NWS10
N20AJ	35	12	8	18	11	95	125	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N20AJB	35	12	8	18	11	95	125	Sintered Alloy	GT-NS20 / NR20 / N20 / NB20
NW20AJ	40	12	6	21.5	8	100	142	Special alloy steel	GT-NWR20 / NWS20
N30AJ	52	17	8	28	11	136	370	Special alloy steel	GT-NS30 / NR30 / N30 / NB30
NW30AJ	55	17	8	29.5	11	140	368	Special alloy steel	GT-NWR30 / NWS30

## Air nipper standard/quasi-standard blades for plastic

<b>AJL</b>		<b>Straight long blades for plastic</b>						<b>Plastic</b>		
<b>Quasi-standard products</b>	AJL/ This is a long type set of straight blades. This is suitable when there is distance between the nippers and the gate cut portion of the workpiece. N30AJL163 is useful for wide gate processing									
<b>Model No.</b>	<b>a</b>	<b>b</b>	<b>Size (mm)</b>			<b>e</b>	<b>L</b>	<b>Weight (g)</b>	<b>Material</b>	<b>Application model</b>
N10LAJ141	61	12	7	34	10	115	165	Special alloy steel	GT-NS10L / NR10L	
N20AJL	65	12	7	20	16	125	230	Special alloy steel	GT-NS20 / NR20 / N20 / NB20	
N20AB39	61	12	7	36	14	121	185	Special alloy steel	GT-NS20 / NR20 / N20 / NB20	
N30AJ163	65	17	7	41	17.5	149	355	Special alloy steel	GT-NS30 / NR30 / N30 / NB30	
N30AJL	75	17	8	25	19	159	470	Special alloy steel	GT-NS30 / NR30 / N30 / NB30	



<b>PF</b>		<b>Flat blades for plastic</b>						<b>Plastic</b>				
<b>PF</b>	PF/ This is a set of blades for cutting the cut end flat for plastic. A large R is provided in the cross section for gate processing where the cut end must not be left.											
<b>Model No.</b>	<b>a</b>	<b>b</b>	<b>c(°)</b>	<b>Size (mm)</b>			<b>e</b>	<b>f</b>	<b>L</b>	<b>Weight (g)</b>	<b>Material</b>	<b>Application model</b>
N7PF	27	9	40	10.5	4	17	81	80	Special alloy steel	GT-N7 / NS7 / NR7		
N10LPF	35	12	40	13.5	5	21	89	120	Special alloy steel	GT-NS10L / NR10L		
N20PF	35	12	40	13.5	11	21	95	130	Special alloy steel	GT-NS20 / NR20 / N20 / NB20		
N30PF	58	17	30	25	15	33	142	390	Special alloy steel	GT-NS30 / NR30 / N30 / NB30		



<b>AH</b>		<b>Crank blades for plastic</b>						<b>Plastic</b>		
<b>AH</b>	AH/ This is a set of blades with a crank cutting edge for plastic. It is effective when there are obstructions or the gate is narrow.									
<b>Model No.</b>	<b>a</b>	<b>b</b>	<b>Size (mm)</b>			<b>e</b>	<b>L</b>	<b>Weight (g)</b>	<b>Material</b>	<b>Application model</b>
N20AH	60	31	7	23	16	120	240	Special alloy steel	GT-NS20 / NR20 / N20 / NB20	



### Air nipper standard/quasi-standard blades for plastic

<b>AMR</b>	<b>Laterally facing blades for plastics</b>				<b>Plastic</b>					
<b>AML</b>	AMR/AML This is a set of blades for plastic where the ML cutting edge is bent 90 degrees. It is useful when restricted to confined spaces hard for the nipper to get into.									
<b>Model No.</b>	<b>a</b>	<b>b</b>	<b>Size (mm)</b>		<b>e</b>	<b>f</b>	<b>L</b>	<b>Weight (g)</b>	<b>Material</b>	<b>Application model</b>
N20AML1498	55	55	8	26	9.5	41	115	270	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N20AMR1499	55	55	8	26	9.5	41	115	270	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N30AML1435	55	68	10	35	13	39	139	520	Special alloy steel	GT-NS30 / NR30 / N30 / NB30
N30AMR1395	55	68	10	35	13	39	139	520	Special alloy steel	GT-NS30 / NR30 / N30 / NB30



<b>quasi-standard products</b>	<b>R blades for plastics</b>				<b>Plastic</b>				
		A large R is provided in the cross section for gate processing where the cut end must not be left. An angled blades can be selected in accordance with the installation angle of the main unit.							
<b>N30AA114</b> 									
<b>Model No.</b>	<b>a</b>	<b>b</b>	<b>Size (mm)</b>		<b>e</b>	<b>L</b>	<b>Weight (g)</b>	<b>Material</b>	<b>Application model</b>
N10LAB152	61	12	15	35	10	115	165	Special alloy steel	GT-NS10 / NR10L
N20AA27	45	12	23	25	12	105	145	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N20AA239	52.3	12	40	27	14	112.3	195	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N20AB360	61	12	15	35	16	121	185	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N30AA114	76.3	17	30	50	20	160.3	385	Special alloy steel	GT-NS30 / NR30 / N30 / NB30



<b>quasi-standard products</b>	<b>Angle nipping blades for plastics</b>				<b>Plastic</b>				
		AE/ Used for processing plastic gates such as ride gates, discard gates. The cutting edge is angled so that the main unit can set up diagonally.							
<b>Model No.</b>	<b>a</b>	<b>b</b>	<b>Size (mm)</b>		<b>e</b>	<b>L</b>	<b>Weight (g)</b>	<b>Material</b>	<b>Application model</b>
N20AE19	50	12	45	13	13	110	200	Special alloy steel	GT-NS20 / NR20 / N20 / NB20
N30AE53	65	17	65	18.5	16	149	440	Special alloy steel	GT-NS30 / NR30 / N30 / NB30



### Air nipper quasi-standard blades for plastic

Quasi-standard products	<b>Comes with chuck function-1</b>						Plastic				
	Mainly in gate processing for direct gates, the sprue is caught with urethane rubber. A large R is provided in the cross section for gate processing where the cut end must not be left.										
Model No.	a	b	Size (mm)			d	e	L	Weight (g)	Material	Application model
N20AH533	49	58.5	10	25	14	109	280	Special alloy steel	GT-N20 / NS20 / NR20		
Quasi-standard products	<b>Comes with chuck function-2</b>						Plastic				
	Mainly in gate processing for direct gates, the sprue is caught with urethane rubber. A large R is provided in the cross section for gate processing where the cut end must not be left.										
Model No.	a	b	Size (mm)			d	e	L	Weight (g)	Material	Application model
N20AH152	55	53	18	16	15	115	330	Special alloy steel	GT-N20 / NS20 / NR20		
Quasi-standard products	<b>L-shape blades for plastics</b>						Plastic				
	This is an angled long type straight set of blades with a 90-degree angle. Ideal for direct gate cut.										
Model No.	a	b	Size (mm)			d	e	L	Weight (g)	Material	Application model
N30AL525	60	62	8	36	16	144	520	Special alloy steel	GT-N30 / NS30 / NR30 / NB30		

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## Air nipper quasi-standard blades for plastic

<b>quasi-standard blades</b>	<b>Nipping blades for plastics</b>							<b>Plastic</b>	
	This is the perfect spherical set of cutting blades for sprue cut. The blades can be inserted precisely in narrow areas that have ribs around them and the finish is very clean.								
Model No.	Size (mm)						Weight (g)	Material	Application model
N20AK249	a	b	c	d	e	L	240	Special alloy steel	GT-N20 / NS20 / NR20 / NB20



<b>quasi-standard blades</b>	<b>Nipping blades for plastics</b>							<b>Plastic</b>	
	AE/ Used for processing plastic gates such as ride gates, discard gates.								
Model No.	Size (mm)						Weight (g)	Material	Application model
N20AE1205	a	b	f x g	d	e	L	202	Special alloy steel	GT-NS20 / NR20 / N20 / NB20



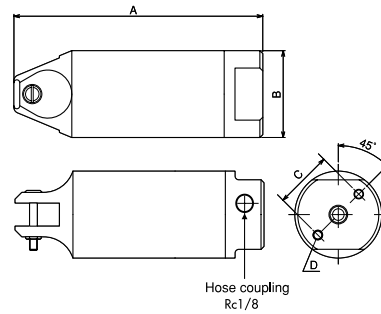
## Air Nipper Troubleshooting

Inspection items when a malfunction occurs during use

Symptoms	Causes	Treatment
1. Blades or slide not working properly.	Air is not being supplied	Supply air
	The hose is twisted	Extend the hose
	Low air pressure	Air pressure adjustment
	Corrosion, wear, or contamination of sliding part of the blades	Lubrication/disassembly adjustment
	Sliding parts burned by heat (heat nipper)	Component replacement
	Broken blade spring	Component replacement
	Broken return spring	Component replacement
	Broken blades	Replace blades
2. Air leakage	Wear of the cutting unit/rivet	Replace blades
	Valve malfunction/wear, damage (O-rings, ball valves, etc.)	Component replacement
	Packing is broken	Component replacement

### Air nippers NR20-M NR30-M Air Nipper Round-Type without Lever

NR



The main body end is 180 degree rotative.

Two suction (intake) ports are provided and so the suction position can be optionally changed depending on the mounting place.

Capacity φ (mm)				Model No.	Size (mm)				Air Consumption (cm <sup>3</sup> /str.)	Air Pressure (MPa)	Weight (g)	Hose coupling
Soft Plastic	Hard Plastic	Copper	Steel		A	B	C	D				
7.0	5.0	2.6	2.0	<b>NR20-M</b>	129	45	30	M5 Depth12	230	0.5~0.6	280	Rc1/8
10.0	6.5	3.3	2.8	<b>NR30-M</b>	165	56	40	M6 Depth12	584	0.5~0.6	505	

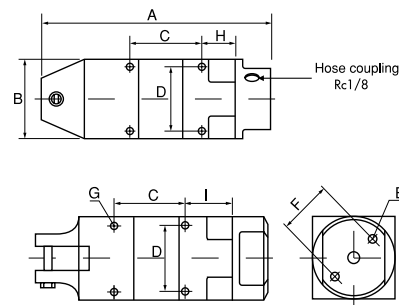
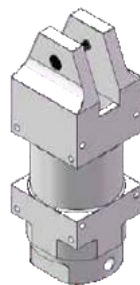
•Air hose inner dia. : 5mm •Overall length/Weight: Accessories not included.

※Before mounting of exclusive/automatic machines, check the following product dimensions. (Frame O.D., screw dia. (screw to screw) dimensions, etc.)

### Air Nippers NS20-M NS30-M Square Air Nippers

NS

VESSEL provides a generous selection of blades for all wire cutting needs, including resin product gate cuts and automatic welding equipment.



The main body end is 180 degree rotative.

Two suction (intake) ports are provided and so the suction position can be optionally changed depending on the mounting place.

Capacity φ (mm)				Model No.	Size (mm)								Air Consumption (cm <sup>3</sup> /str.)	Air Pressure (MPa)	Weight (g)	Hose coupling	
Soft Plastic	Hard Plastic	Copper	Steel		A	B	C	D	E	F	G	H					I
7.0	5.0	2.6	2.0	<b>NS20-M</b>	129	45	40	36	M5Depth12	30	M4Depth7	19	24	230	0.5~0.6	370	Rc1/8
10.0	6.5	3.3	2.8	<b>NS30-M</b>	170	56	60	46	M6Depth12	40	M5Depth10	20	30	584	0.5~0.6	685	

•Air hose inner dia. : 5mm •Overall length/Weight: Accessories not included.

※Before mounting of exclusive/automatic machines, check the following product dimensions. (Frame O.D., screw dia. (screw to screw) dimensions, etc.)

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