

3P SERIES

3-Jaw Parallel Grippers | Features and Benefits | How To Order

Features:

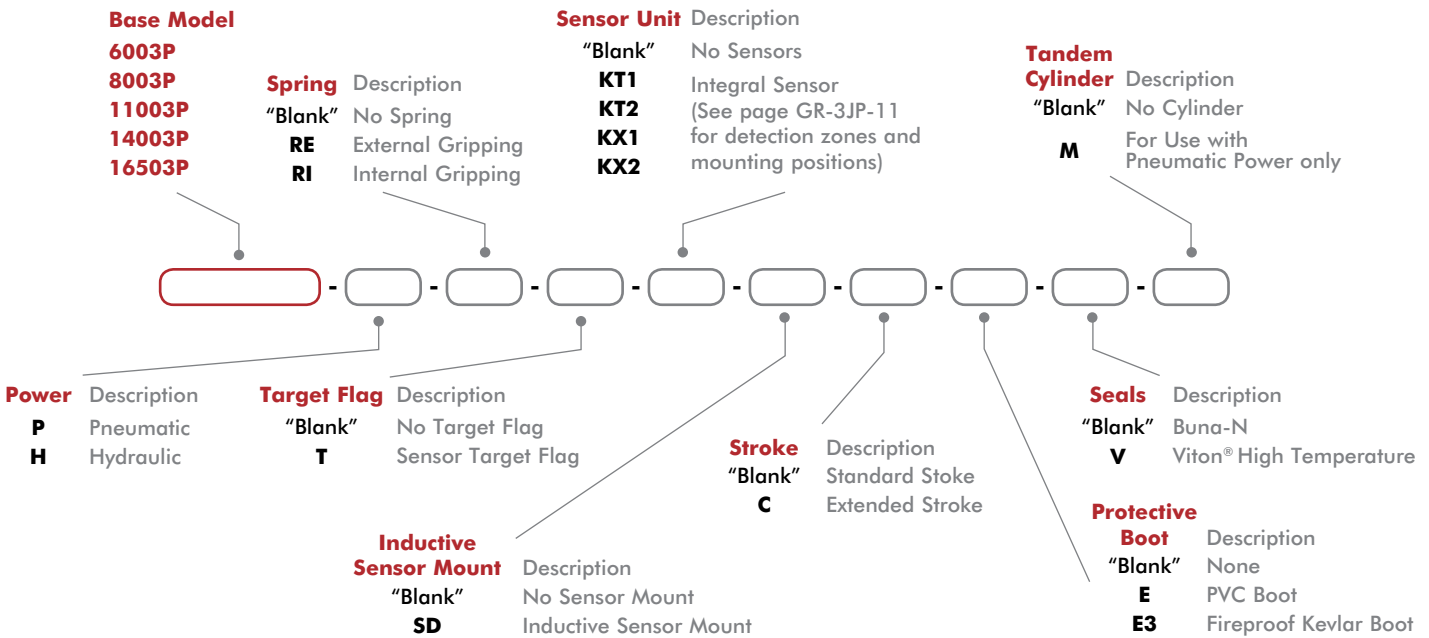
- Robust and powerful precision multi-purpose gripper
- Pneumatic or hydraulic powered operation
- Optional tandem cylinder doubles grip force
- Protective boot and shielded design for harsh environments
- Spring assist option maintains grip in case of air pressure loss
- Uses inductive sensors for jaw position detection

Applications:

- Hydraulic powered gripping applications
- Confined spaces in harsh environment applications
- Welding applications with protective boot option



How To Order



Accessories

Sensor Accessories	Model Numbers	Part Number	Qty/Unit
M8 Inductive Sensor PNP with M8 Connector	6003P, 8003P, 11003P	OISP-011-C	1-4
M8 Inductive Sensor NPN with M8 Connector	6003P, 8003P, 11003P	OISN-011-C	1-4
M8 Inductive Sensor PNP with M12 Connector	14003P, 16503P	OISP-017-C	1-4
M8 Inductive Sensor NPN with M12 Connector	14003P, 16503P	OISN-017-C	1-4
M8 Quick Disconnect 2 Meter Cable Length*	6003P, 8003P, 11003P	CABL-010	1-4
M12 Quick Disconnect 2 Meter Cable Length*	14003P, 16503P	CABL-014	1-4
Inductive Sensor Mounting Kit (1 holder, 1 flag, 2 spacers)	6003P, 8003P	SD60-80P	1-2
Inductive Sensor Mounting Kit (1 holder, 1 flag, 2 spacers)	11003P	SD110P	1-2
Inductive Sensor Mounting Kit (1 holder, 1 flag, 2 spacers)	14003P	OSMK-114	1-2
Inductive Sensor Mounting Kit (1 holder, 1 flag, 2 spacers)	16503P	OSMK-115	1-2

*Sensor and cable sold separately.

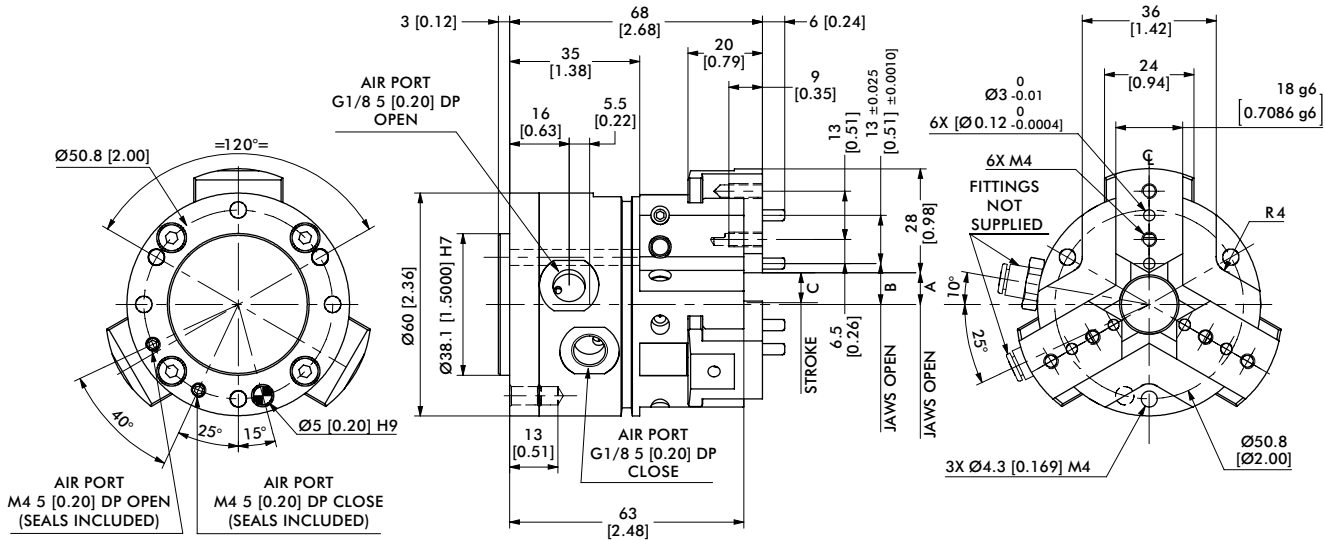
3-Jaw Parallel Grippers | Technical Specifications

Specifications	Units	6003P-P	6003P-P-C	8003P-P	8003P-P-C	11003P-P	11003P-P-C
Grip Force (F6+R)1, 6 bar [87 psi], Springs Mid-Way, L=0	N [lbs]	678 [152]	422 [95]	1888 [424]	1219 [274]	1979 [445]	2030 [456]
Grip Force (F0+R)2, 0 bars, Springs Mid-Way, L=0	N [lbs]	172 [39]	107 [24]	617 [139]	398 [89]	628 [141]	644 [145]
Total Stroke	mm [in]	10 [0.39]	16 [0.63]	13 [0.51]	20 [0.79]	20 [0.79]	30 [1.18]
Weight	kg [lbs]	0.60 [1.32]		0.97 [2.14]		2.35 [5.18]	
Pressure Range w/o Spring	bar [psi]	2-7 [30-100]					
Pressure Range with Spring	bar [psi]	4-7 [60-100]					
Ingress Protection Class (IP)		IP54					
Displacement	cm ³ [in ³]	12 [0.73]		35 [2.14]		87 [5.31]	
Temp. Range (Buna-N seals)	°C [°F]	-35°~80° [-30°~180°]					
Temp. Range (Viton® seals)	°C [°F]	-30°~150° [-20°~300°]					
Actuation (open/close)	sec.	0.07		0.08		0.10	
Repeatability	mm [in]	±0.02 [±0.001]					

Specifications	Units	14003P-P	14003P-P-C	16503P-P	16503P-P-C
Grip Force (F6+R)1, 6 bar [87 psi], Springs Mid-Way, L=0	N [lbs]	6077 [1366]	4031 [906]	11190 [2515]	6878 [1546]
Grip Force (F0+R)2, 0 bars, Springs Mid-Way, L=0	N [lbs]	2248 [508]	1490 [335]	3730 [838]	2292 [515]
Total Stroke	mm [in]	26 [1.02]	40 [1.57]	30 [1.18]	50 [1.97]
Weight	kg [lbs]	4.7 [10.36]		9.04 [19.92]	
Pressure Range w/o Spring	bar [psi]	2-7 [30-100]			
Pressure Range with Spring	bar [psi]	4-7 [60-100]			
Ingress Protection Class (IP)		IP54			
Displacement	cm ³ [in ³]	220 [13.43]		494 [30.15]	
Temp. Range (Buna-N seals)	°C [°F]	-35°~80° [-30°~180°]			
Temp. Range (Viton® seals)	°C [°F]	-30°~150° [-20°~300°]			
Actuation (open/close)	sec.	0.16		0.29	
Repeatability	mm [in]	±0.02 [±0.001]			

6003P, 6003P-C

3-Jaw Parallel Grippers | Dimensions and Technical Specifications



OUR GRIPPERS ARE SUPPLIED WITH OPEN SIDE AIR PORTS AND TOP AIR PORTS PLUGGED. WHEN OPERATING TOP AIR PORTS, PRODUCES MANIFOLD SEALING AS SHOWN.

GRIPPERS TOP AIR PORT

O-RING Ø1.5 X Ø4

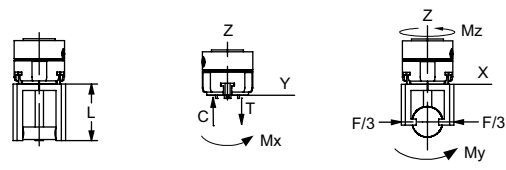
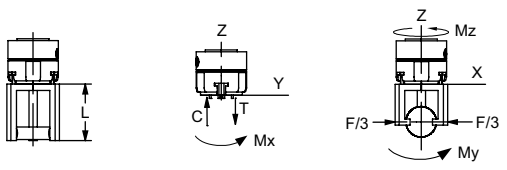
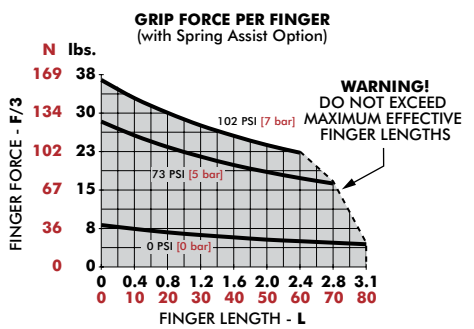
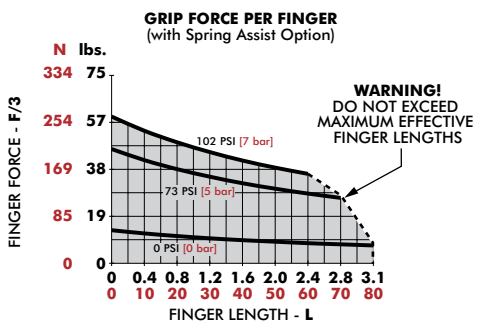
mm [INCH]
THIRD ANGLE PROJECTION

Model	A	B	C
6003P	5.5 [0.22]	8 [0.31]	5 [0.20]
6003P-C	8.5 [0.33]	11 [0.43]	8 [0.31]

Dimensions in mm [in]

Protective Boots	6003P
PVC Protective Boot, Brown or Black	ER63P
Fireproof KEVLAR Protective Boot, Red	E3R63P
Seal Repair Kits	6003P
Buna-N Seal Repair Kit	SLKT-156
Viton® Seal Repair Kit	SLKT-156V
Hydraulic Seal Repair Kit	SLKT-330

Loading Information



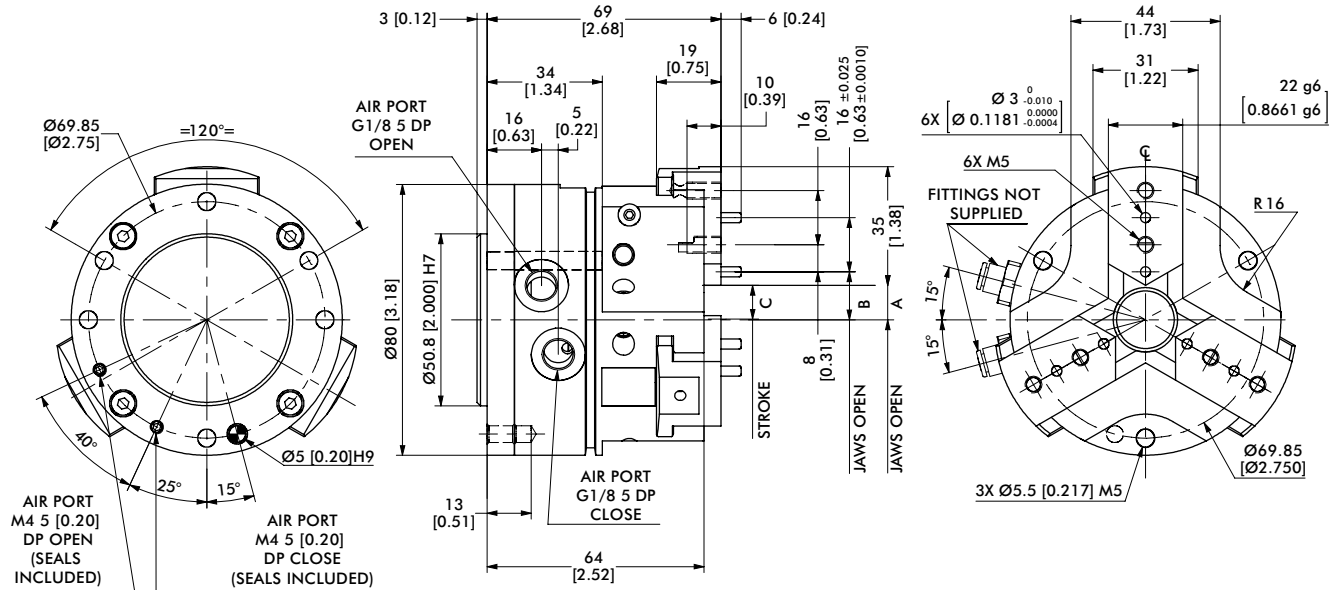
6003P	Static	Dynamic
Maximum Tensile T	819 N [184 lbs]	175 N [39 lbs]
Maximum Compressive C	1556 N [350 lbs]	175 N [39 lbs]
Maximum Moment M_x	42 Nm [372 in-lbs]	5 Nm [44 in-lbs]
Maximum Moment M_y	49 Nm [434 in-lbs]	6 Nm [53 in-lbs]
Maximum Moment M_z	54 Nm [478 in-lbs]	6 Nm [53 in-lbs]

6003P-C	Static	Dynamic
Maximum Tensile T	745 N [167 lbs]	108 N [24 lbs]
Maximum Compressive C	1415 N [318 lbs]	108 N [24 lbs]
Maximum Moment M_x	34 Nm [301 in-lbs]	3 Nm [27 in-lbs]
Maximum Moment M_y	39 Nm [345 in-lbs]	4 Nm [35 in-lbs]
Maximum Moment M_z	49 Nm [434 in-lbs]	4 Nm [35 in-lbs]

*Capacities are per set of jaws and are not simultaneous

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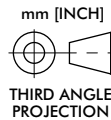
3-Jaw Parallel Grippers | Dimensions and Technical Specifications



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GRIPPERS TOP AIR PORT

O-RING Ø1.5 X Ø4



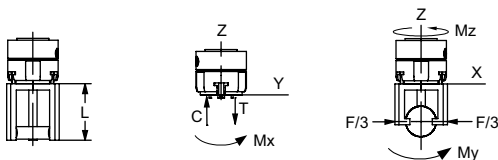
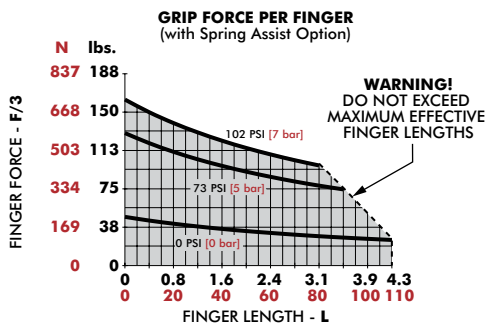
Model	A	B	C
8003P	6.8 [0.27]	10.8 [0.43]	6.5 [0.26]
8003P-C	10.2 [0.40]	14.2 [0.56]	10 [0.39]

Dimensions in mm [in]

Protective Boots	8003P
PVC Protective Boot, Brown or Black	ER83P
Fireproof KEVLAR Protective Boot, Red	E3R83P

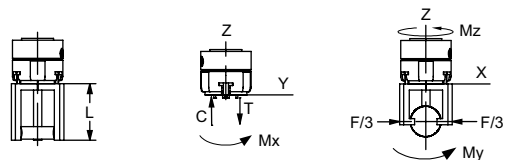
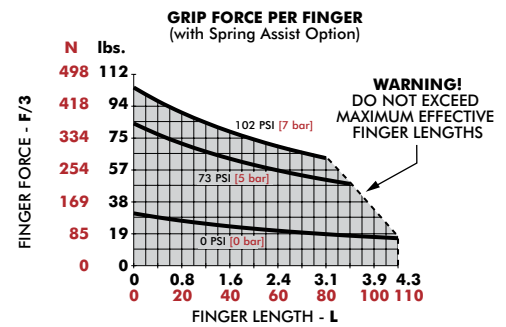
Seal Repair Kits	8003P
Buna-N Seal Repair Kit	S80
Viton® Seal Repair Kit	S80V
Hydraulic Seal Repair Kit	S80H

Loading Information



8003P	Static	Dynamic
Maximum Tensile T	1229 N [276 lbs]	436 N [98 lbs]
Maximum Compressive C	2075 N [466 lbs]	436 N [98 lbs]
Maximum Moment M_x	60 Nm [531 in-lbs]	16 Nm [142 in-lbs]
Maximum Moment M_y	68 Nm [602 in-lbs]	19 Nm [168 in-lbs]
Maximum Moment M_z	37 Nm [327 in-lbs]	19 Nm [168 in-lbs]

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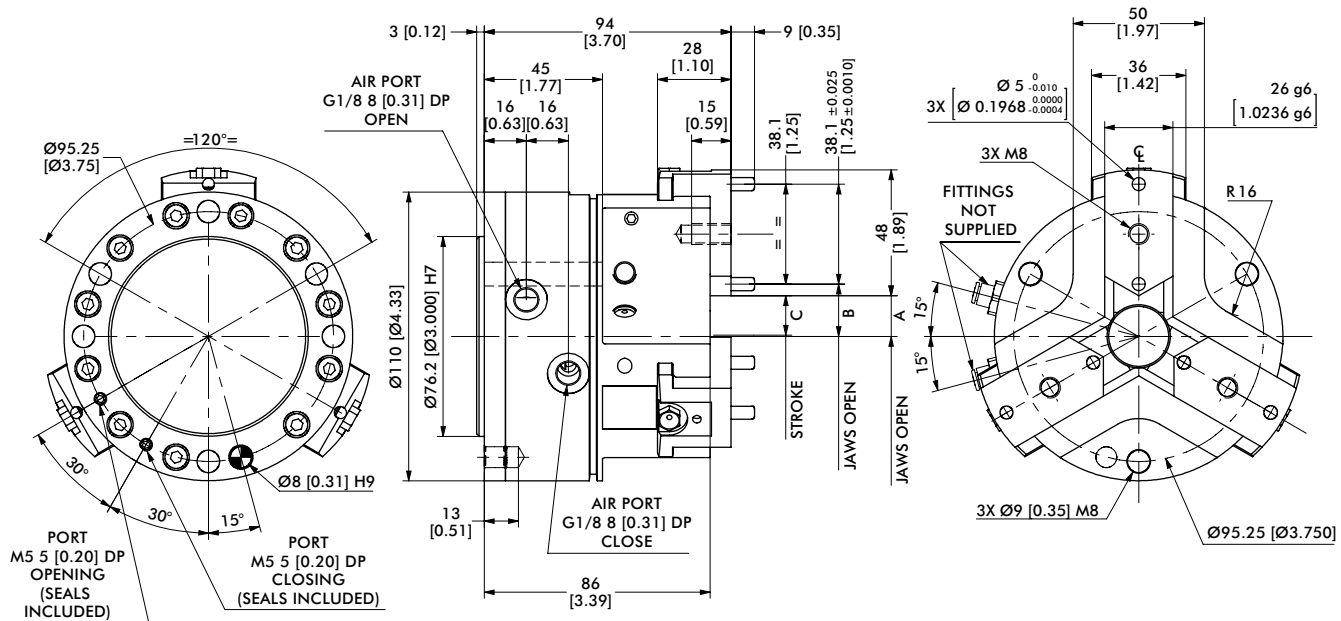


8003P-C	Static	Dynamic
Maximum Tensile T	1097 N [247 lbs]	281 N [63 lbs]
Maximum Compressive C	1853 N [416 lbs]	281 N [63 lbs]
Maximum Moment M_x	39 Nm [345 in-lbs]	12 Nm [106 in-lbs]
Maximum Moment M_y	44 Nm [389 in-lbs]	13 Nm [115 in-lbs]
Maximum Moment M_z	34 Nm [301 in-lbs]	13 Nm [115 in-lbs]

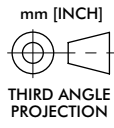
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11003P, 11003P-C

3-Jaw Parallel Grippers | Dimensions and Technical Specifications



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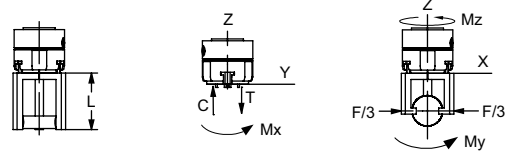
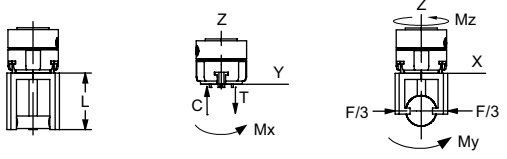
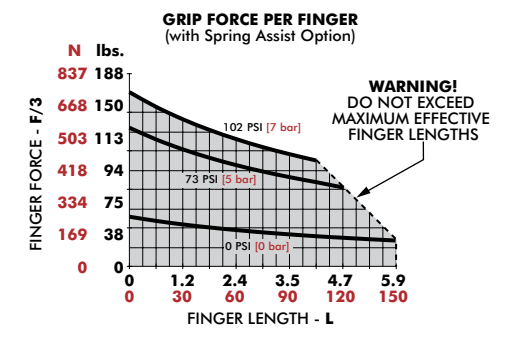
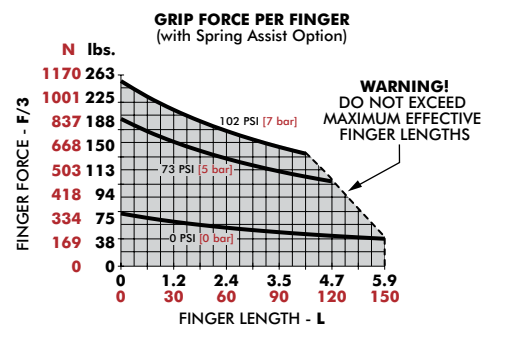
Model	A	B	C
11003P	10.5 [0.41]	15 [0.59]	10 [0.39]
11003P-C	15.5 [0.61]	20 [0.79]	15 [0.59]

Dimensions in mm [in]

Protective Boots	11003P
PVC Protective Boot, Brown or Black	ER113P
Fireproof KEVLAR Protective Boot, Red	E3R113P

Seal Repair Kits	11003P
Buna-N Seal Repair Kit	S110
Viton® Seal Repair Kit	S110V
Hydraulic Seal Repair Kit	S110H

Loading Information



11003P	Static	Dynamic
Maximum Tensile T	1560 N [351 lbs]	695 N [156 lbs]
Maximum Compressive C	2652 N [596 lbs]	695 N [156 lbs]
Maximum Moment M_x	60 Nm [531 in-lbs]	31 Nm [274 in-lbs]
Maximum Moment M_y	80 Nm [708 in-lbs]	41 Nm [363 in-lbs]
Maximum Moment M_z	90 Nm [797 in-lbs]	41 Nm [363 in-lbs]

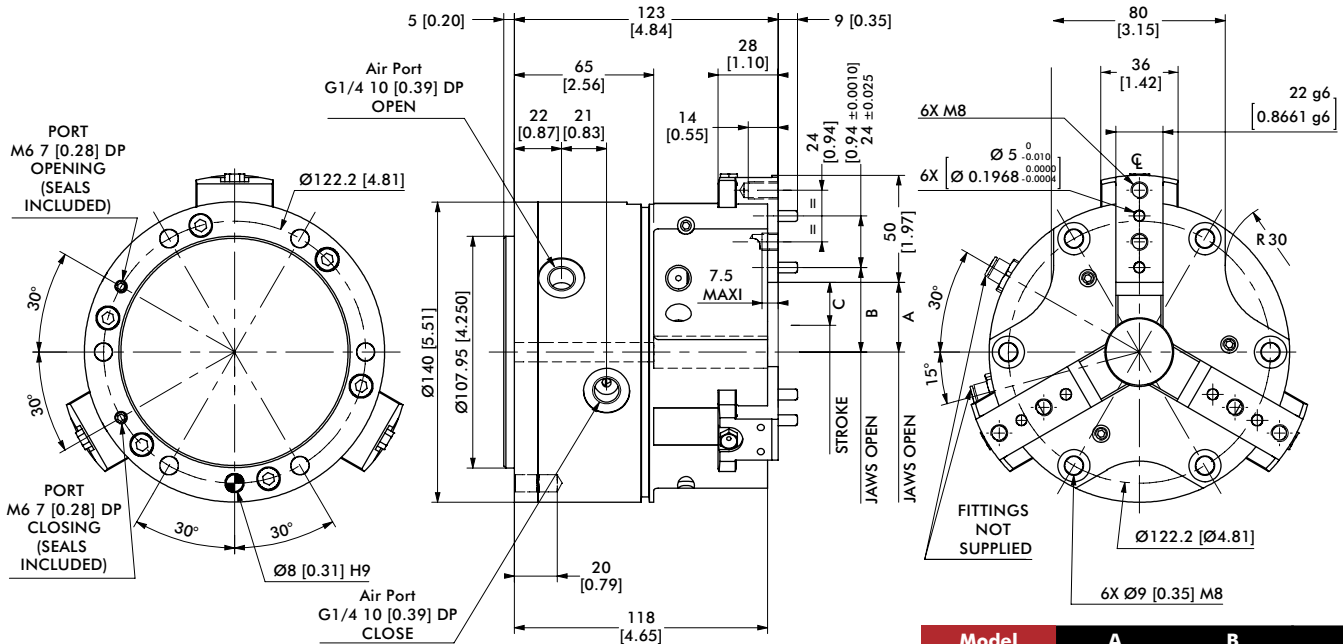
11003P-C	Static	Dynamic
Maximum Tensile T	1418 N [319 lbs]	463 N [104 lbs]
Maximum Compressive C	2411 N [542 lbs]	463 N [104 lbs]
Maximum Moment M_x	50 Nm [443 in-lbs]	22 Nm [195 in-lbs]
Maximum Moment M_y	66 Nm [584 in-lbs]	30 Nm [266 in-lbs]
Maximum Moment M_z	84 Nm [743 in-lbs]	30 Nm [266 in-lbs]

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14003P, 14003P-C

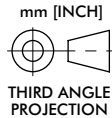
3-Jaw Parallel Grippers | Dimensions and Technical Specifications



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GRIPPERS TOP AIR PORT

Ø5 [Ø0.2]
Ø9 [Ø0.35]
1.2 [0.05]
O-RING Ø1.5 X Ø6



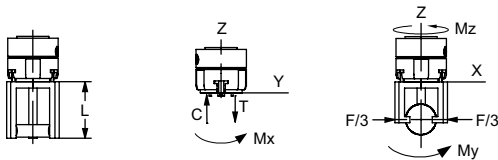
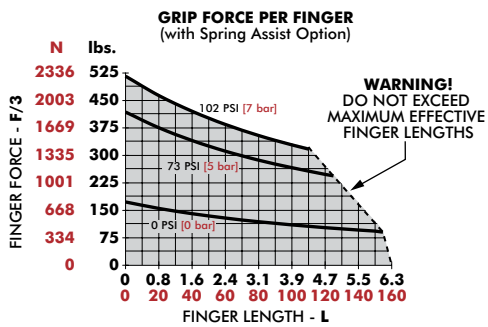
Model	A	B	C
14003P	25.5 [1.00]	32.5 [1.28]	13 [0.51]
14003P-C	32.5 [1.28]	39.5 [1.56]	20 [0.79]

Dimensions in mm [in]

Protective Boots	14003P
PVC Protective Boot, Brown or Black	KP-317
Fireproof KEVLAR Protective Boot, Red	KP-319

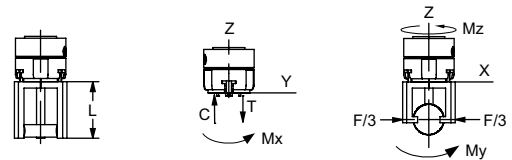
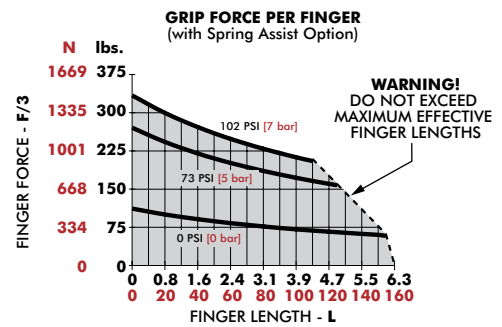
Seal Repair Kits	14003P
Buna-N Seal Repair Kit	SLKT-333
Viton® Seal Repair Kit	SLKT-333V
Hydraulic Seal Repair Kit	SLKT-334

Loading Information



14003P	Static	Dynamic
Maximum Tensile T	2390 N [537 lbs]	850 N [191 lbs]
Maximum Compressive C	2700 N [607 lbs]	850 N [191 lbs]
Maximum Moment M_x	85 Nm [752 in-lbs]	25 Nm [221 in-lbs]
Maximum Moment M_y	130 Nm [1151 in-lbs]	40 Nm [354 in-lbs]
Maximum Moment M_z	100 Nm [885 in-lbs]	40 Nm [354 in-lbs]

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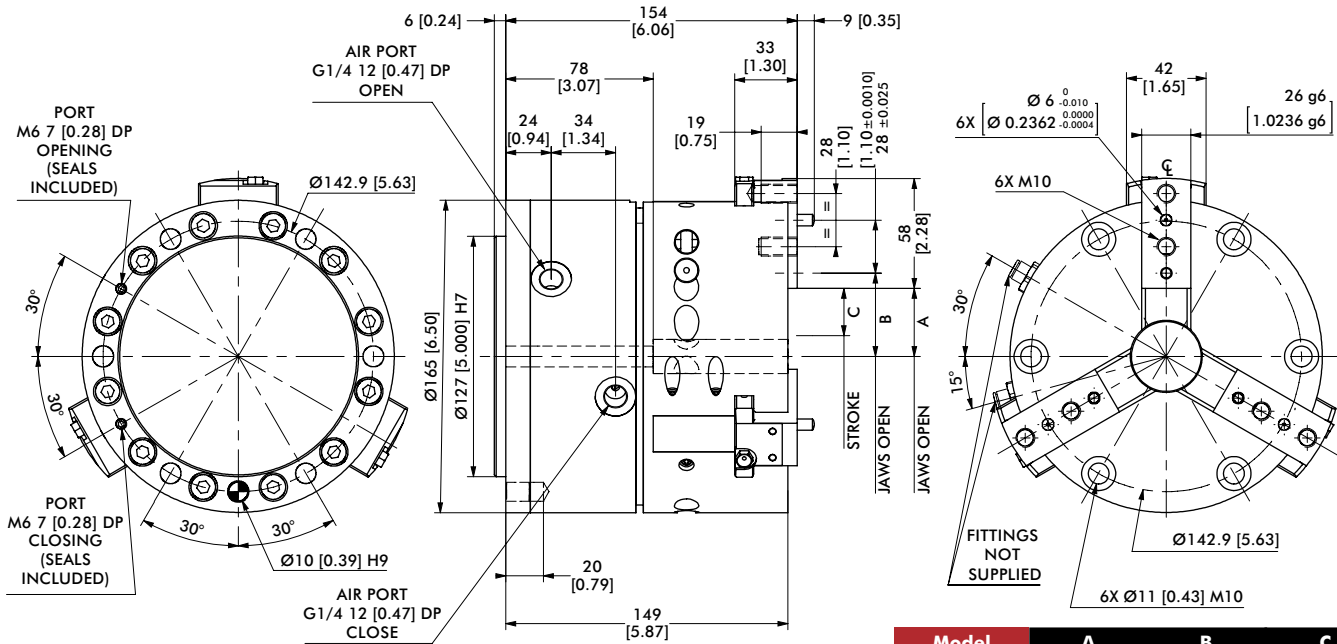


14003P-C	Static	Dynamic
Maximum Tensile T	2180 N [490 lbs]	590 N [133 lbs]
Maximum Compressive C	2500 N [562 lbs]	590 N [133 lbs]
Maximum Moment M_x	75 Nm [664 in-lbs]	20 Nm [177 in-lbs]
Maximum Moment M_y	110 Nm [974 in-lbs]	32 Nm [283 in-lbs]
Maximum Moment M_z	90 Nm [797 in-lbs]	32 Nm [283 in-lbs]

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16503P, 16503P-C

3-Jaw Parallel Grippers | Dimensions and Technical Specifications



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mm [INCH]
THIRD ANGLE PROJECTION

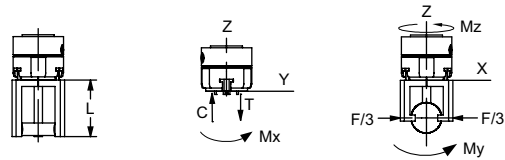
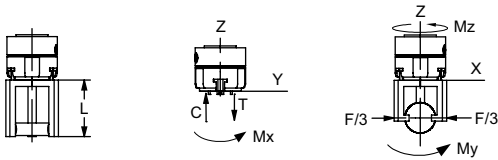
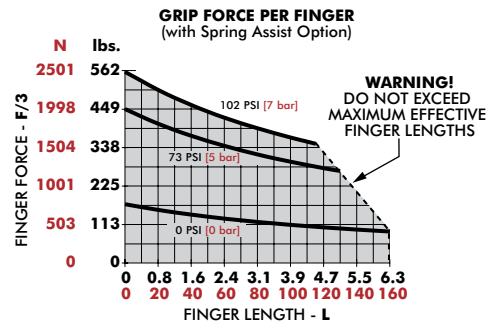
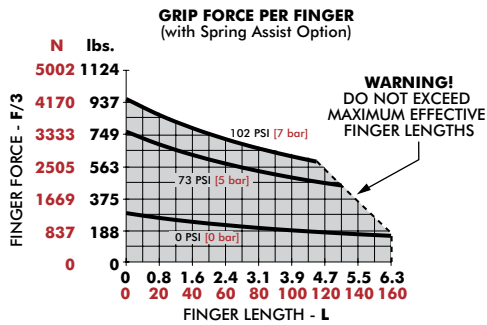
Model	A	B	C
16503P	31 [1.22]	39 [1.54]	15 [0.59]
16503P-C	36 [1.42]	44 [1.73]	25 [0.98]

Dimensions in mm [in]

Protective Boots	16503P
PVC Protective Boot, Brown or Black	KP-320
Fireproof KEVLAR Protective Boot, Red	KP-322

Seal Repair Kits	16503P
Buna-N Seal Repair Kit	SLKT-335
Viton® Seal Repair Kit	SLKT-335V
Hydraulic Seal Repair Kit	SLKT-336

Loading Information



16503P	Static	Dynamic
Maximum Tensile T	2580 N [580 lbs]	980 N [220 lbs]
Maximum Compressive C	3200 N [719 lbs]	980 N [220 lbs]
Maximum Moment M_x	100 Nm [885 in-lbs]	32 Nm [283 in-lbs]
Maximum Moment M_y	150 Nm [1328 in-lbs]	50 Nm [443 in-lbs]
Maximum Moment M_z	140 Nm [1239 in-lbs]	50 Nm [443 in-lbs]

16503P-C	Static	Dynamic
Maximum Tensile T	2250 N [506 lbs]	810 N [182 lbs]
Maximum Compressive C	2800 N [629 lbs]	810 N [182 lbs]
Maximum Moment M_x	90 Nm [797 in-lbs]	28 Nm [248 in-lbs]
Maximum Moment M_y	140 Nm [1239 in-lbs]	40 Nm [354 in-lbs]
Maximum Moment M_z	130 Nm [1151 in-lbs]	40 Nm [354 in-lbs]

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SUPPLY: (P) Pneumatic (H) (H80) Hydraulic

As standard, the clamp is supplied with air to a pressure of 7 bar. On request (contact us) the gripper can be supplied with hydraulic fluid. The clamp is fitted with seals Viton Quad-Ring.

- Choice (H) allows a hydraulic power to a pressure of 20 bar max. In this case the overall dimensions do not change. For better security the gripper must be fixed on their support before being fired.

CAUTION: Hydraulic cycle times are longer.

The hydraulic power is incompatible with the option tandem (M).

Option (RE) or (RI): Spring Assist

The internal springs of the gripper ensures grip force is maintained by retaining the component during pressure loss, to increase the gripforce, or allows the usage of the gripper in single acting operation.

Option (RE) for external gripping. Option (RI) for internal gripping.

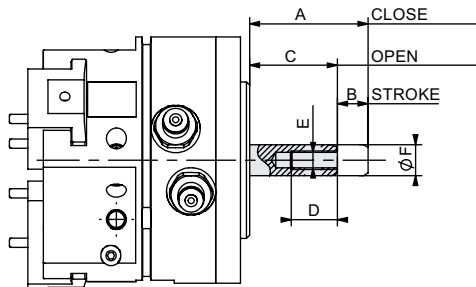
The (RE) is incompatible with the option (RI).

Option (T): Sensor Rod

Option (T) is a steel rod which comes out on the rear side of the gripper. The rod is fixed with the piston and has the same stroke movement. The open end of the rod allows for mounting a cam which allows to control the position of the jaws by using inductive sensors, micro switches, etc

WARNING: when screwing on cam rod, make sure the sensor rod does not rotate to prevent twisting of the springs of options (RE) or (RI).

Option (T) is incompatible with option (K).

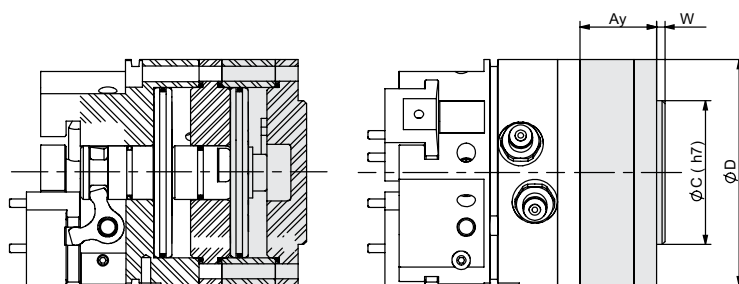


Model	A	B	C	D	E	F
6003P & 6003P-C	35	5	30	15	M6	10
8003P & 8003P-C	35	6.5	28.5	15	M6	10
11003P & 11003P-C	35	10	25	15	M6	15
14003P & 14003P-C	55	13	42	20	M8	15
16503P & 16503P-C	53	23	30	20	M8	15

Option (M): Tandem Cylinder

The (M) is a cylinder light-alloy that fits behind the bottom plate. This actuator's integral action allows to double the gripforce by using the same pressure. The combination of tandem option tandem (M) and Option (RE) or (RI) can double the clamping forces of the spring assist option. For cycle times of the tandem option, apply a factor of 3 to the actuation time.

The (M) is incompatible with the option (H).



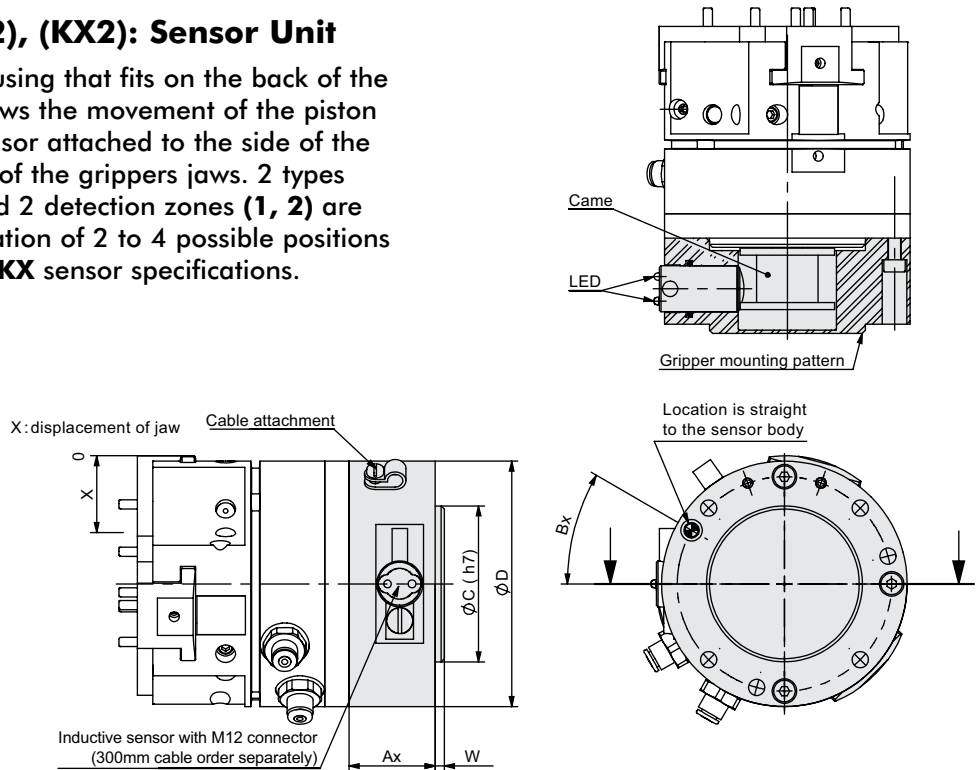
Model	Ay	ØC	ØD	W	Weight (kg)
6003P & 6003P-C	28.5	38.1	60	3	0.200
8003P & 8003P-C	27	50.8	80	3	0.300
11003P & 11003P-C	34	76.2	110	3	0.750
14003P & 14003P-C	49	107.95	140	5	2.100
16503P & 16503P-C	65	127	165	6	3.600

3P OPTIONS & ACCESSORIES

3-Jaw Parallel Grippers | Dimensions and Technical Specifications

Option (KT1), (KX1), (KT2), (KX2): Sensor Unit

The (K) is a lightweight alloy housing that fits on the back of the gripper. An integrated shaft follows the movement of the piston to provide information to the sensor attached to the side of the unit. It can control two positions of the grippers jaws. 2 types of inductive sensors (KT, KX) and 2 detection zones (1, 2) are possible to allow for the combination of 2 to 4 possible positions (KT1, KX1, KT2, KX2). For KT, KX sensor specifications.



Model	Ax	Bx	ØC	ØD	W	Weight (k(g))	No. of Sensing Positions (please specify when ordering)	Information area from the open grip position (green LED) X (mm)	Area information relative to the closed grip position X (mm)
6003P	23	30°	38.1	60	3	0.180	1	0 or 1 ^{+0,5} ₋₀	4 ^{+0,5} ₋₀ or 5
							2	0 or 2 ^{+0,5} ₋₀	3 ^{+0,5} ₋₀ or 5
6003P-C	23	30°	38.1	60	3	0.180	1	0 or 1.6 ^{+0,8} ₋₀	7 ^{+0,8} ₋₀ or 8
							2	0 or 3.2 ^{+0,8} ₋₀	4.8 ^{+0,8} ₋₀ or 8
8003P	28	30°	50.8	80	3	0.400	1	0 or 1 ^{+0,5} ₋₀	5.5 ^{+0,5} ₋₀ or 6,5
							2	0 or 2 ^{+0,5} ₋₀	4.5 ^{+0,5} ₋₀ or 6,5
8003P-C	28	30°	50.8	80	3	0.400	1	0 or 1.5 ^{+0,8} ₋₀	8.5 ^{+0,8} ₋₀ or 10
							2	0 or 3.1 ^{+0,8} ₋₀	6.9 ^{+0,8} ₋₀ or 10
11003P	36	30°	76.2	110	3	0.900	1	0 or 1 ^{+0,5} ₋₀	9 ^{+0,5} ₋₀ or 10
							2	0 or 3 ^{+0,5} ₋₀	7 ^{+0,5} ₋₀ or 10
11003P-C	36	30°	76.2	110	3	0.900	1	0 or 1.5 ^{+0,8} ₋₀	13.5 ^{+0,8} ₋₀ or 15
							2	0 or 4.5 ^{+0,8} ₋₀	10.5 ^{+0,8} ₋₀ or 15
14003P	45.5	165°	107.95	140	5	1.670	1	0 or 2 ^{+0,5} ₋₀	11 ^{+0,5} ₋₀ or 13
							2	0 or 4 ^{+0,5} ₋₀	9 ^{+0,5} ₋₀ or 13
14003P-C	45.5	165°	107.95	140	5	1.670	1	0 or 3 ^{+0,8} ₋₀	17 ^{+0,8} ₋₀ or 20
							2	0 or 6.2 ^{+0,8} ₋₀	13.8 ^{+0,8} ₋₀ or 20
16003P	65.5	165°	127	165	6	2.670	1	0 or 2 ^{+0,5} ₋₀	13 ^{+0,5} ₋₀ or 15
							2	0 or 4 ^{+0,5} ₋₀	11 ^{+0,5} ₋₀ or 15
16003P-C	65.5	165°	127	165	6	2.670	1	0 or 3.3 ^{+0,8} ₋₀	21.7 ^{+0,8} ₋₀ or 25
							2	0 or 7 ^{+0,8} ₋₀	18 ^{+0,8} ₋₀ or 25

3P OPTIONS & ACCESSORIES

3-Jaw Parallel Grippers | Dimensions and Technical Specifications

Option (V): Viton® Seals

Gripper with Viton® seals allows for use in high temperature environments [-30 ° C or 150 ° C].

Accessory (E): Protective Boot

The accessory (E) is a protective boot that fits over the gripper. It protects the mechanism and thus improves the life of the gripper in hostile environments. The accessory (E) causes a different location of the fingers on the jaws as compared to the standard installation. Before attaching the boot, perform the following steps:

1. Mount gripper to machine.
2. Slip boot over gripper and secure in place.
3. Attached fingers to jaws using finger adapter.

Depending on the environment 2 types of envelopes are available:

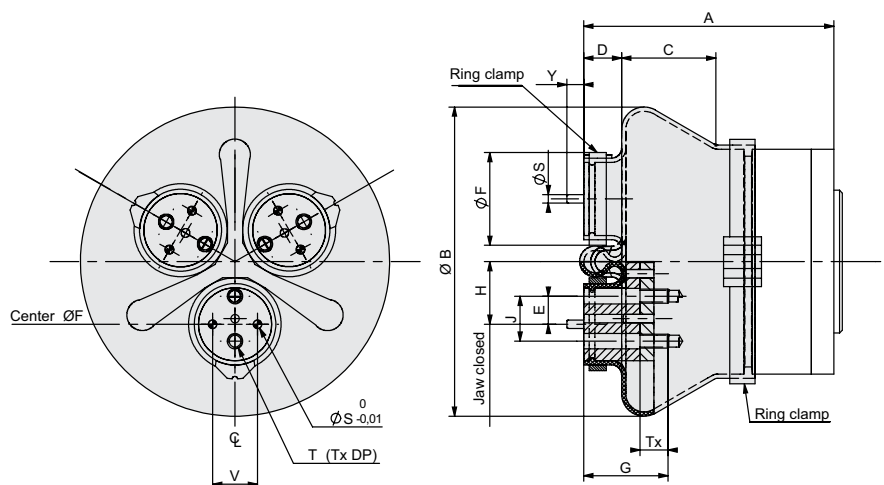
(E) Envelope of black or brown PVC for environmental grinding with emery presence.

(E3) red envelope containing KEVLAR fireproof silicone environment for hot chips and weld spatter.

The accessory (E) is incompatible with the accessory (SD)

Model Code	Order #	Model	A	B	C	D	E	F	G	H	J	K	S	T	TX	V	Y
E	ER62P	6003P & 6003P-C	88	98	35	13.5	8	29	29	17.5	13	-	3	M4	9	13	6
E3	E3R62P																
E	ER82P	8003P & 8003P-C	89	110	34	13.5	10	33	30	22.3	16	-	3	M5	10	16	6
E3	E3R82P																
E	ER112P	11003P & 11003P-C	See Drawing														
E3	E3R112P																
E	KP-311	14003P & 14003P-C	143	185	50	18	12	55	34	19.5	24	18	5	M8	14	-	8
E3	KP-313																
E	KP-314	16003P & 16003P-C	172	220	70	16	14	67	37	24 19	28	23	6	M10	19	-	8
E3	KP-316																

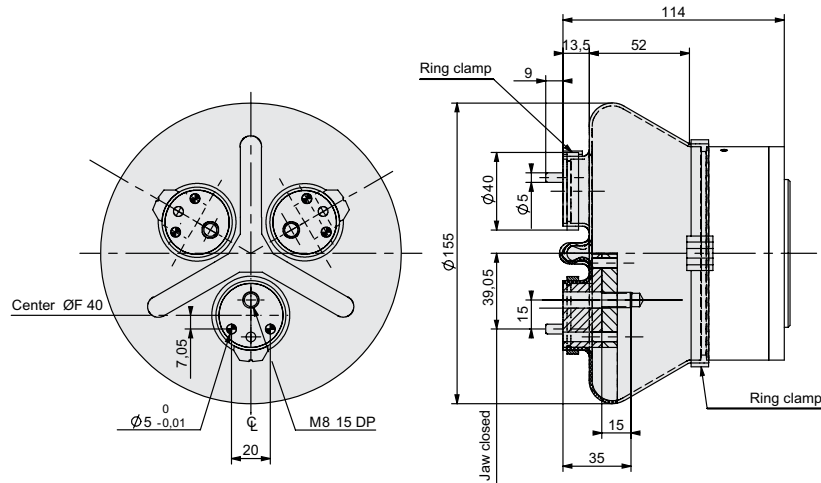
6003P & 8003P



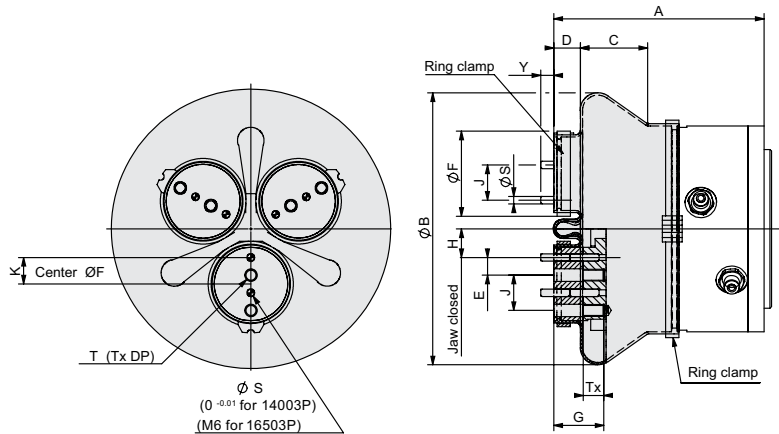
3P OPTIONS & ACCESSORIES

3-Jaw Parallel Grippers | Dimensions and Technical Specifications

11003P



14003P & 16503P

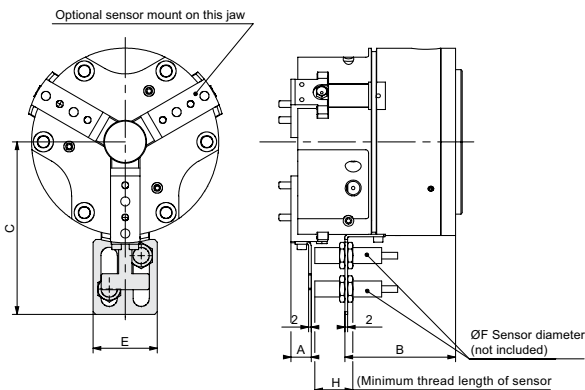


Accessory (SD): Inductive Sensor Mounting Kit

Allows for sensing of two positions: open and closed jaw. The accessory kit (SD) includes: 1 sensor bracket, 1 flag and screws. **Sensors are not provided.**

NOTES: To be usable, the cylindrical inductive sensors selected by the customer must have tapped their bodies to a minimum depth H (see table below).

Depending on their length, the cylindrical inductive sensors can extend below the clamp, requiring provision of suitable housing in the surrounding parts. It is possible to control more than 2 positions using a second attachment (SD).



Order #	Model	A	B	C	E	F	H
SD60-80P	6003P & 6003P-C	20	35	67	32	8	35
SD60-80P	8003P & 8003P-C	19	34	77	32	8	35
SD110P	11003P & 11003P-C	19.5	45	97	32	8	35
OSMK-114	14003P & 14003P-C	15	83	129	48	12	28.5
OSMK-115	16503P & 16503P-C	29	96	147	48	12	33