

3P Parallel Gripper- 3-Jaw Precision Series

Precision Gripper

The 3 concentric jaws and very good repeatability [0.02mm] allows loading and unloading accurate cylindrical parts.

Harsh Environments

Shielded design (-E) repels chips and other particulate from internal drive mechanism depending on the chosen material of the shield.

Compact and Powerful

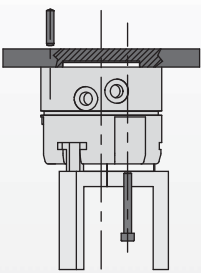
This gripper is designed for use in confined spaces, combining long strokes with a high grip force. Optional safety springs retain the components, should the air supply fail or to increase grip force.

Multipurpose Gripper

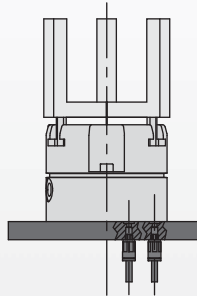
A wide range of options and accessories (extended stroke, hydraulic power, safety springs for internal or external gripping, inductive sensors, tandem cylinder, Viton® seals, and protective boot) allow these grippers to be used in a number of applications.

Mounting Information:

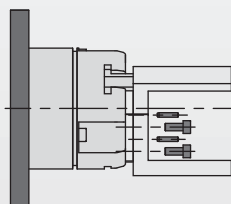
Gripper can be mounted and operated in any orientation



Gripper is located using pilot boss and a dowel pin and assembled with 4 or 6 through body screws.



Gripper can be operated utilizing top manifold air ports.



Fingers are located on jaw with 2 dowel pins and assembled with 1 or 2 screws.

Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	30-100 psi	2-7 bar
Cylinder Type	Double or double acting spring-assisted or single acting with spring Buna-N	
Dynamic Seals	Buna-N	
Valve Required to Operate:		
Double Acting	4-way, 2-position	
Single acting (Option RE or RI)	3-way, 2-position	
Air Quality Requirements		
Filtration	40 Micron or Better	
Lubrication	Not Necessary*	
Temperature Operating Range		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C
Application Restrictions		
Expected Life		
Normal Application	5 million cycles	
w/ Preventative Maintenance	10+ million cycles*	
Field Repairable	Yes	
Seal Repair Kits Available	Yes	

*Addition of lubrication will greatly increase service life

Product Features

Quality Components

Body made from aluminum alloy with Teflon™ impregnated hardcoat anodize. Other essential parts of the gripper are made of hardened and precision ground steel

Standard and Extended Stroke (-C)

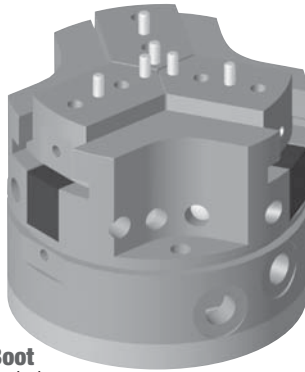
Each model of gripper is available in two stroke lengths

Versatile Finger Mounting

2 finger mounting surfaces on each jaw

Viton® Seals

Optional Viton® seals for high temperatures



Protective Gripper Boot

Optional Gripper Boot (-E) to protect the mechanism of the clamp are liquid and large external impurities.

Spring Assist

Spring assist retains the component should the air supply fail, to assist the gripper for internal (-RE) or external (-RI) gripping, or in single acting mode

Sensor Target

Option (-T) to control the jaw position at the rear of the clamp

Sensor Unit

Option (-K) to benefit from integrated detection

Pneumatic Power

Side or top ports (sealing face / face)

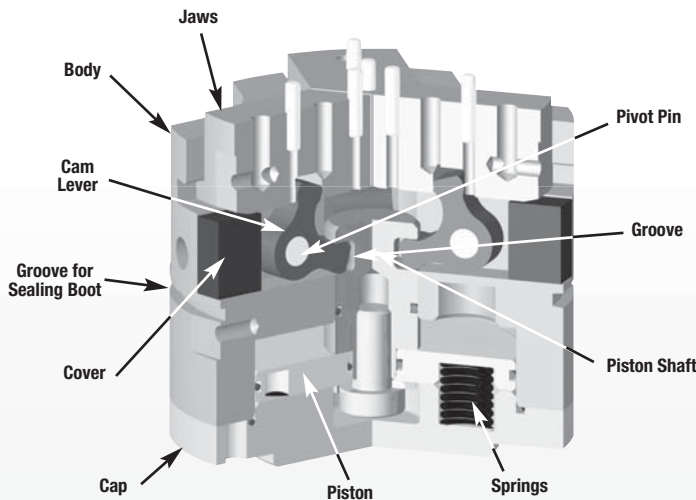
Hydraulic Power

Option (-H) up to 20 bar max, (-H80) up to 80 bar max.

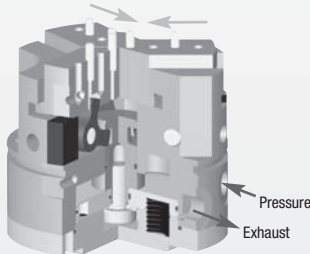
Tandem Cylinder

Option (-M) doubles the grip force

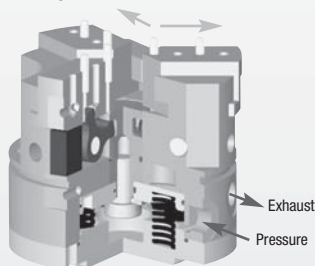
Operating Principle



Closed Stroke Position

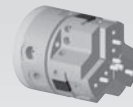


Open Stroke Position



- A large double-acting piston is connected to the piston shaft at its end with a driving groove.
- Levers pivot in the body about an axis of articulation. Their two heads agree precisely on one side in the groove of the small piston, the other in a groove cut in each jaw holder.
- The rotation of the levers converts the vertical movement of the piston in a horizontal motion and synchronized two-bit gates, which are guided in grooves in «T» fitting body.
- This gripper is suitable for internal or external gripping and can be mounted in any orientation
- Optional failsafe spring can be used to maintain gripping force if gripper loses air pressure or as a single acting return gripper.

Style: 3P Precision Parallel Gripper



	6003P	6003P-C
Total Stroke:	10 mm	16 mm
Force at 6bar: ¹	678 N	422 N
Force w/o air: ²	172 N	107 N
Weight:	0.60 kg	0.60 kg

See Page **1.252 & 1.253**

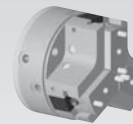
Style: 3P Precision Parallel Gripper



	8003P	8003P-C
Total Stroke:	13 mm	20 mm
Force at 6bar: ¹	1888 N	1219 N
Force w/o air: ²	617 N	398 N
Weight:	0.97 kg	0.97 kg

See Page **1.254 & 1.255**

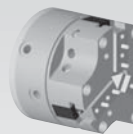
Style: 3P Precision Parallel Gripper



	11003P	11003P-C
Total Stroke:	20 mm	30 mm
Force at 6bar: ¹	2967 N	1979 N
Force w/o air: ²	941 N	628 N
Weight:	2.35 kg	2.35 kg

See Page **1.256 & 1.257**

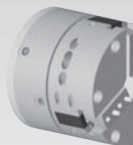
Style: 3P Precision Parallel Gripper



	14003P	14003P-C
Total Stroke:	26 mm	40 mm
Force at 6bar: ¹	6077 N	3930 N
Force w/o air: ²	2248 N	1453 N
Weight:	4.70 kg	4.70 kg

See Page **1.258 & 1.259**

Style: 3P Precision Parallel Gripper



	16503P	16503P-C
Total Stroke:	30 mm	50 mm
Force at 6bar: ¹	11190 N	6707 N
Force w/o air: ²	3730 N	2235 N
Weight:	9.04 kg	9.04 kg

See Page **1.260 & 1.261**

OPTIONS & ACCESSORIES

See Page **1.264 & 1.267**

1. Force with spring and air at 6bar
2. Force with spring without air

PARALLEL GRIPPER 6003P PRECISION 3P GRIPPER SERIES

PRECISION 3P

1.254

Specifications

Grip Force (F6+R) ¹ , 6 bars, Springs Mid-Way, L=0	678 N
Grip Force (F0+R) ² , 0 bars, Springs Mid-Way, L=0	172 N
Total Stroke	10 mm
Weight	0.60 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	3 - 7 bar
Ø Cylinder Bore	40 mm
Displacement	12 cm ³
Actuation (open / close)	0.07 s / 0.07 s
Repeatability	± 0.02 mm

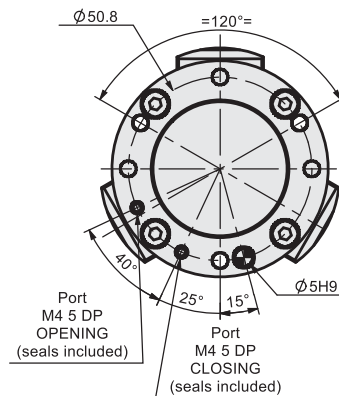
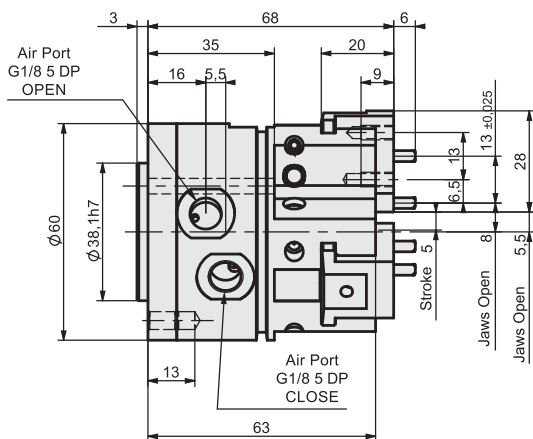
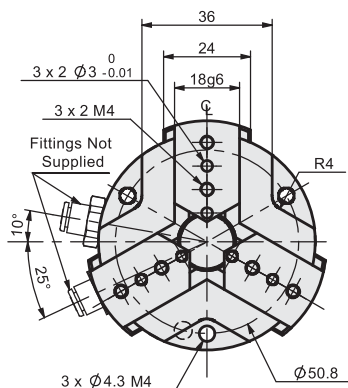
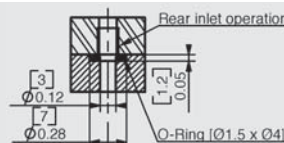
1. Force with spring and air at 6bar
2. Force with spring without air

6003P

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

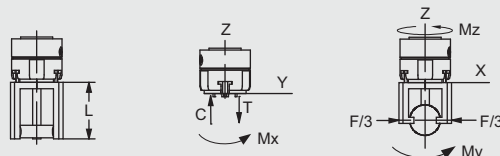
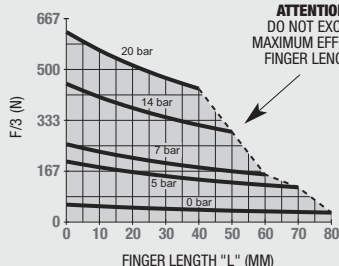
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.005" or [±.013mm]	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	---	-----------------------------	--	---

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



Loading Information:

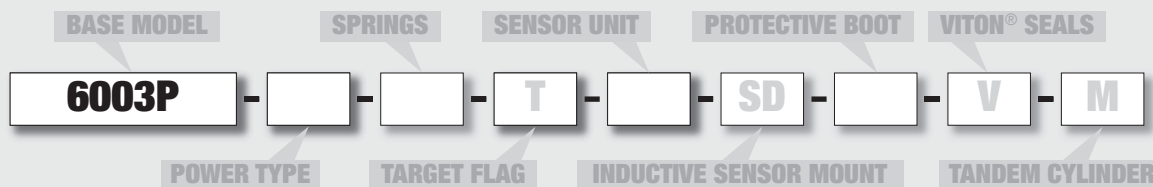
Force transmitted by the jaws on the workpiece
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile T	819 N	175 N
Maximum Compressive C	1556 N	175 N
Maximum Moment Mx	42 Nm	5 Nm
Maximum Moment My	49 Nm	6 Nm
Maximum Moment Mz	54 Nm	6 Nm

* The Capacities are per set of jaws and are not simultaneous.

How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

PROTECTIVE BOOT ACCESSORIES

	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	E	ER63P	1
Fireproof KEVLAR Protective Boot, Red	E3	E3R63P	1

SENSOR ACCESSORIES

	Model Code	Order #	Qty/Unit
Inductive Sensor Kit (1 holder, 1 flag)	SD	SD60-80P	1 or 2
M8 Inductive Sensor PNP with M8 connector		OISP-011-C	1 or 4
M8 Inductive Sensor NPN with M8 connector		OISN-011-C	1 or 4
Cable (2 meters) with M8 screw right gold		CABL-010	1 or 4

PNEUMATIC ACCESSORIES

Standard Seal Repair Kit		SLKT-156	1
Viton® Seal Repair Kit		SLKT-156V	1
Hydraulic Seal Repair Kit		SLKT-330	1

Options and Accessories:
See Page 1.264-1.267

Specifications

Grip Force (F6+R) ¹ , 6 bars, Springs Mid-Way, L=0	422 N
Grip Force (F0+R) ² , 0 bars, Springs Mid-Way, L=0	107 N
Total Stroke	16 mm
Weight	0.60 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	3 - 7 bar
Ø Cylinder Bore	40 mm
Displacement	12 cm ³
Actuation (open / close)	0.07 s / 0.07 s
Repeatability	± 0.02 mm

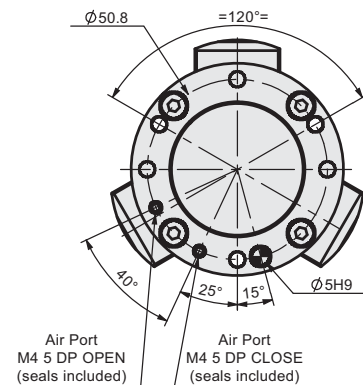
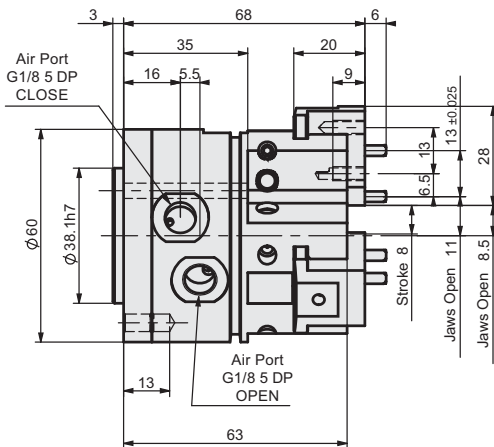
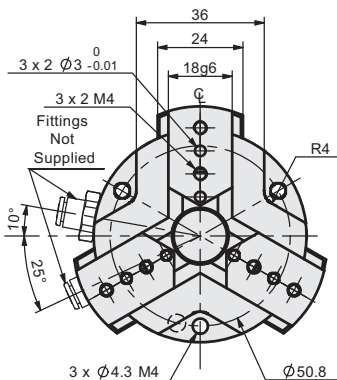
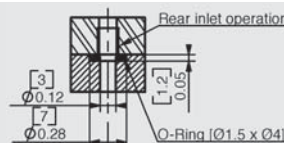
1. Force with spring and air at 6bar
2. Force with spring without air

6003P-C

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

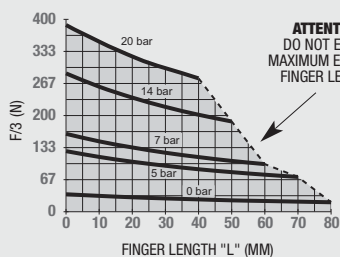
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.005" or [±.013mm]	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	--	--------------------------------	--	---

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.

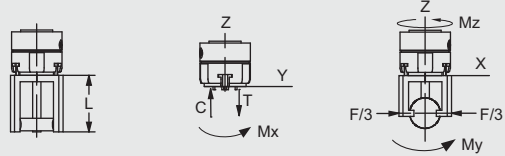


Loading Information:

Force transmitted by the jaws on the workpiece
(Springs compressed at 50% stroke)



ATTENTION :
DO NOT EXCEED
MAXIMUM EFFECTIVE
FINGER LENGTHS

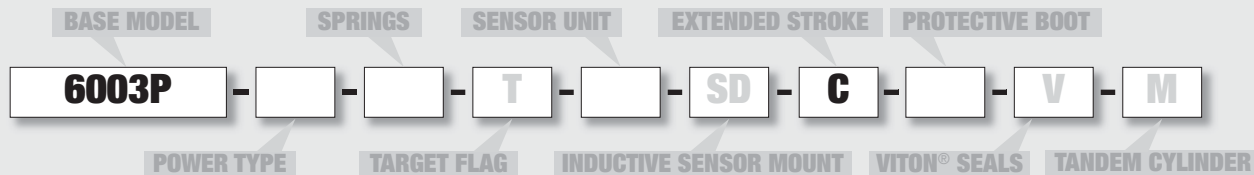


Loading Capacity*

	Static	Dynamic
Maximum Tensile T	745 N	108 N
Maximum Compressive C	1415 N	108 N
Maximum Moment Mx	34 Nm	3 Nm
Maximum Moment My	39 Nm	4 Nm
Maximum Moment Mz	49 Nm	4 Nm

* The Capacities are per set of jaws and are not simultaneous.

How To Order:



POWER TYPE

- P Pneumatic
 - H Hydraulic (page 1.264)
- (One of two options is mandatory **P** or **H**)

SPRINGS

- RE External Gripping
- RI Internal Gripping

SENSOR UNIT

- KT1 • KT2 • KX1 • KX2

PROTECTIVE BOOT

- E • E3

PROTECTIVE BOOT ACCESSORIES

	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	E	ER63P	1
Fireproof KEVLAR Protective Boot, Red	E3	E3R63P	1

SENSOR ACCESSORIES

	Model Code	Order #	Qty/Unit
Inductive Sensor Kit (1 holder, 1 flag)	SD	SD60-80P	1 or 2
M8 Inductive Sensor PNP with M8 connector		OISP-011-C	1 or 4
M8 Inductive Sensor NPN with M8 connector		OISN-011-C	1 or 4
Cable (2 meters) with M8 screw right gold		CABL-010	1 or 4

PNEUMATIC ACCESSORIES

Standard Seal Repair Kit		SLKT-156	1
Viton® Seal Repair Kit		SLKT-156V	1
Hydraulic Seal Repair Kit		SLKT-330	1

Options and Accessories:
See Page 1.264-1.267

PARALLEL GRIPPER 8003P PRECISION 3P GRIPPER SERIES

Specifications

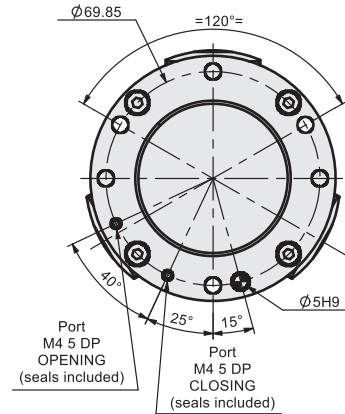
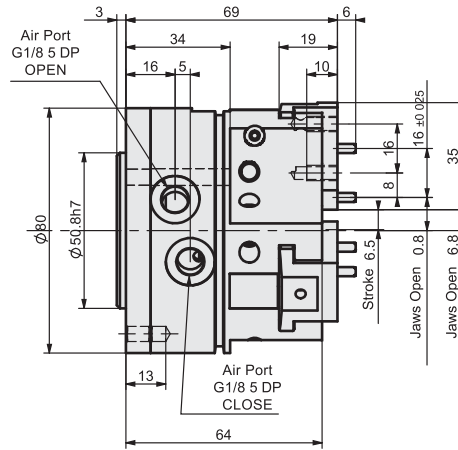
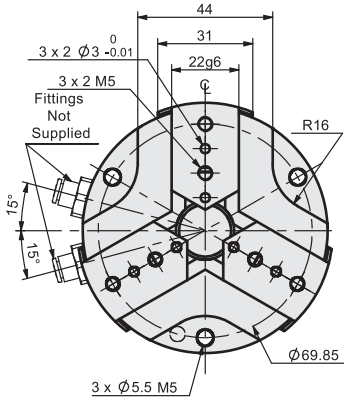
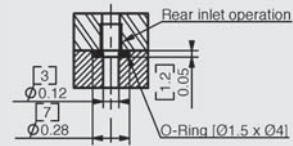
Grip Force (F6+R) ¹ , 6 bars, Springs Mid-Way, L=0	8003P 1888 N
Grip Force (F0+R) ² , 0 bars, Springs Mid-Way, L=0	617 N
Total Stroke	13 mm
Weight	0.97 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	3 - 7 bar
Ø Cylinder Bore	60 mm
Displacement	35 cm ³
Actuation (open / close)	0.08 s / 0.08 s
Repeatability	± 0.02 mm

1. Force with spring and air at 6bar
2. Force with spring without air

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

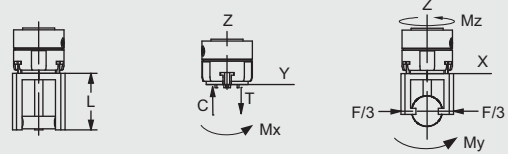
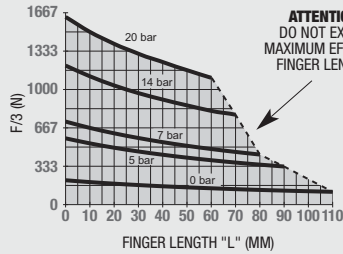
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.005" or [±.013mm]	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	---	-----------------------------	--	---

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



Loading Information:

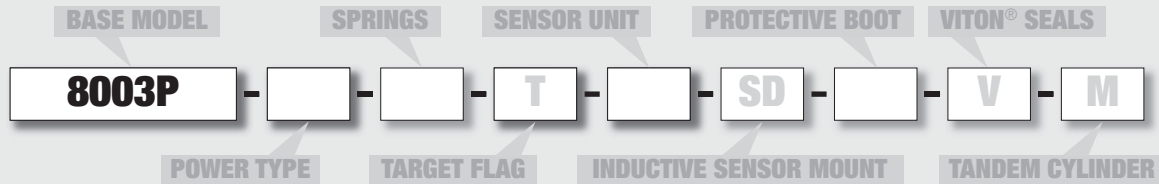
Force transmitted by the jaw on the workpiece
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile T	1229 N	436 N
Maximum Compressive C	2075 N	436 N
Maximum Moment Mx	60 Nm	16 Nm
Maximum Moment My	68 Nm	19 Nm
Maximum Moment Mz	37 Nm	19 Nm

* The Capacities are per set of jaws and are not simultaneous.

How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

PROTECTIVE BOOT ACCESSORIES

	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	E	ER83P	1
Fireproof KEVLAR Protective Boot, Red	E3	E3R83P	1

SENSOR ACCESSORIES

	Model Code	Order #	Qty/Unit
Inductive Sensor Kit (1 holder, 1 flag)	SD	SD60-80P	1 or 2
M8 Inductive Sensor PNP with M8 connector		OISP-011-C	1 or 4
M8 Inductive Sensor NPN with M8 connector		OISN-011-C	1 or 4
Cable (2 meters) with M8 screw right gold		CABL-010	1 or 4

PNEUMATIC ACCESSORIES

Standard Seal Repair Kit		S80	1
Viton® Seal Repair Kit		S80V	1
Hydraulic Seal Repair Kit		S80H	1

Options and Accessories:
See Page 1.264-1.267

Specifications

Grip Force (F6+R) ¹ , 6 bars, Springs Mid-Way, L=0	1979 N
Grip Force (F0+R) ² , 0 bars, Springs Mid-Way, L=0	628 N
Total Stroke	30 mm
Weight	2.35 kg
Pressure Range	2 -7 bar
Pressure Range with Springs	4 -7 bar
Ø Cylinder Bore	76 mm
Displacement	87 cm ³
Actuation (open / close)	0.10 s / 0.10 s
Repeatability	± 0.02 mm

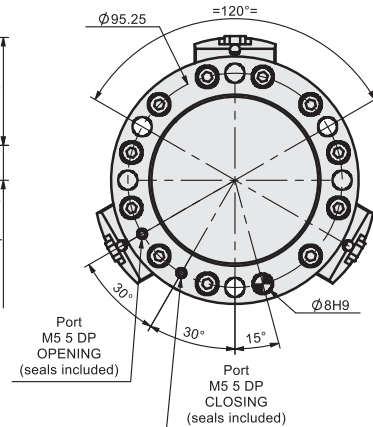
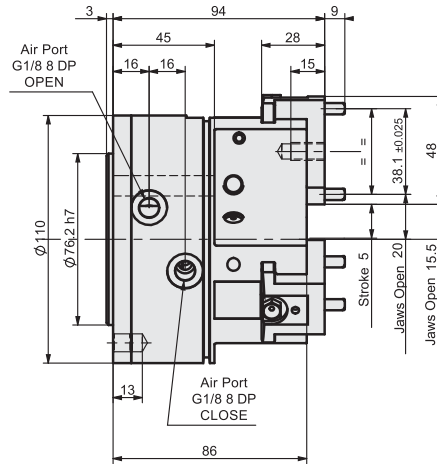
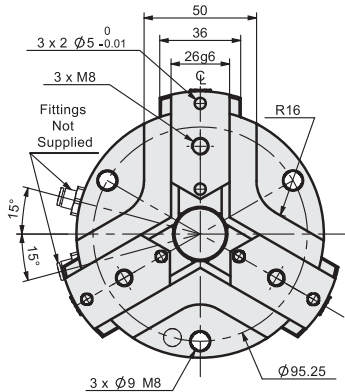
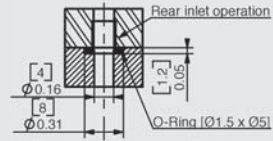
1. Force with spring and air at 6bar
2. Force with spring without air

11003P-C

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

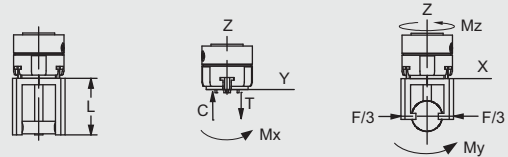
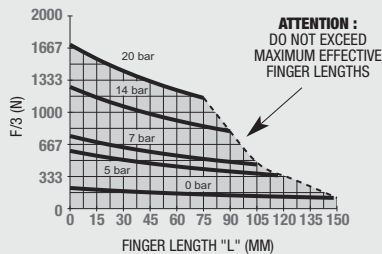
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.005" or (±.013mm)	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	--	--------------------------------	--	---

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



Loading Information:

Force transmitted by the jaw on the workpiece
(Springs compressed at 50% stroke)

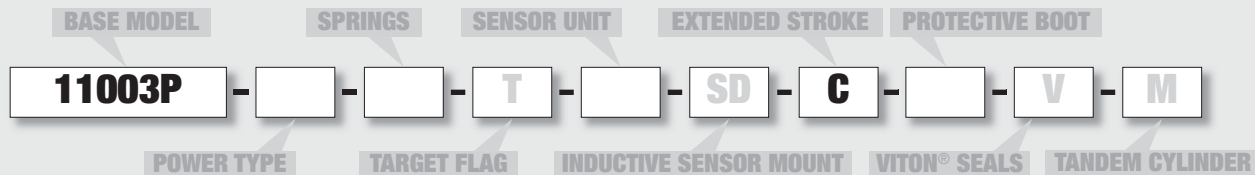


Loading Capacity*

	Static	Dynamic
Maximum Tensile T	1418 N	463 N
Maximum Compressive C	2411 N	463 N
Maximum Moment Mx	50 Nm	22 Nm
Maximum Moment My	66 Nm	30 Nm
Maximum Moment Mz	84 Nm	30 Nm

* The Capacities are per set of jaws and are not simultaneous.

How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

PROTECTIVE BOOT ACCESSORIES

	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	E	ER113P	1
Fireproof KEVLAR Protective Boot, Red	E3	E3R113P	1

SENSOR ACCESSORIES

	Model Code	Order #	Qty/Unit
Inductive Sensor Kit (1 holder, 1 flag)	SD	SD110P	1 or 2
M8 Inductive Sensor PNP with M8 connector		OISP-011-C	1 or 4
M8 Inductive Sensor NPN with M8 connector		OISN-011-C	1 or 4
Cable (2 meters) with M8 screw right gold		CABL-010	1 or 4

PNEUMATIC ACCESSORIES

	Model Code	Order #	Qty/Unit
Standard Seal Repair Kit		S110	1
Viton® Seal Repair Kit		S110V	1
Hydraulic Seal Repair Kit		S110H	1

Options and Accessories:
See Page 1.264-1.267



PARALLEL GRIPPER 14003P PRECISION 3P GRIPPER SERIES

Specifications

Grip Force (F6+R) ¹ , 6 bars, Springs Mid-Way, L=0	6077 N
Grip Force (F0+R) ² , 0 bars, Springs Mid-Way, L=0	2248 N
Total Stroke	26 mm
Weight	4.70 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4.5 - 7 bar
Ø Cylinder Bore	105 mm
Displacement	220 cm ³
Actuation (open / close)	0.16 s / 0.16 s
Repeatability	± 0.02 mm

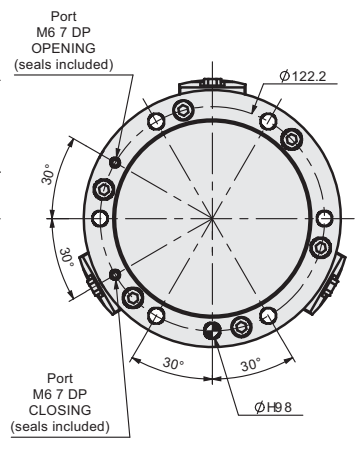
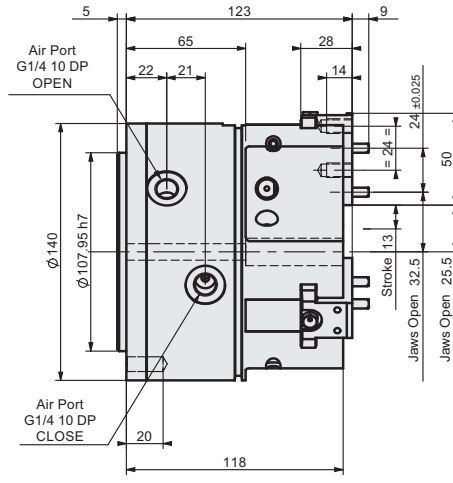
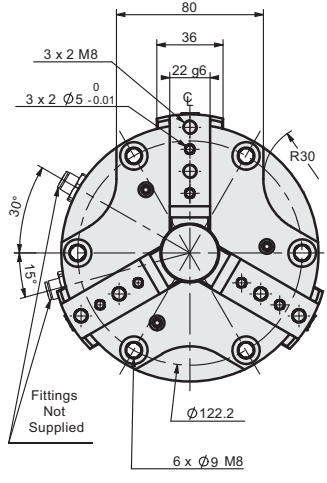
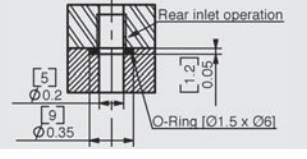
- Force with spring and air at 6bar
- Force with spring without air

14003P

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

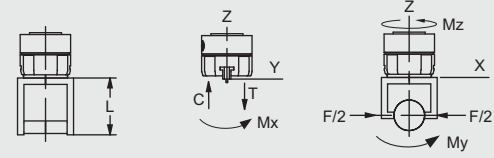
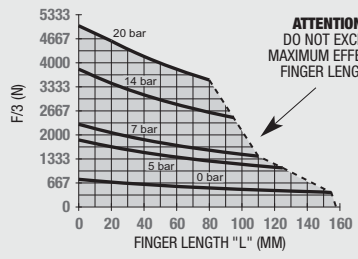
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.005" or [±.013mm]	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	--	--------------------------------	--	---

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



Loading Information:

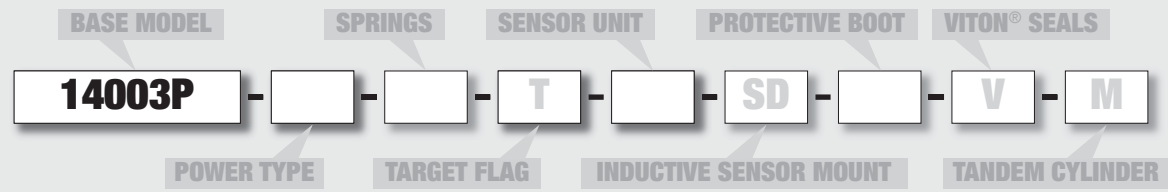
Force transmitted by the jaw on the workpiece
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile T	2390 N	850 N
Maximum Compressive C	2700 N	850 N
Maximum Moment Mx	85 Nm	25 Nm
Maximum Moment My	130 Nm	40 Nm
Maximum Moment Mz	100 Nm	40 Nm

* The Capacities are per set of jaws and are not simultaneous.

How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

PROTECTIVE BOOT ACCESSORIES

	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	E	KP-317	1
Fireproof KEVLAR Protective Boot, Red	E3	KP-319	1

SENSOR ACCESSORIES

	Model Code	Order #	Qty/Unit
Inductive Sensor Kit (1 holder, 1 flag)	SD	OSMK-114	1 or 2
M8 Inductive Sensor PNP with M12 connector		OISP-017-C	1 or 4
M8 Inductive Sensor NPN with M12 connector		OISN-017-C	1 or 4
Cable (2 meters) with M12 screw right gold		CABL-014	1 or 4

PNEUMATIC ACCESSORIES

	Model Code	Order #	Qty/Unit
Standard Seal Repair Kit		SLKT-333	1
Viton® Seal Repair Kit		SLKT-333V	1
Hydraulic Seal Repair Kit		SLKT-334	1

Options and Accessories:
See Page 1.264-1.267

Specifications

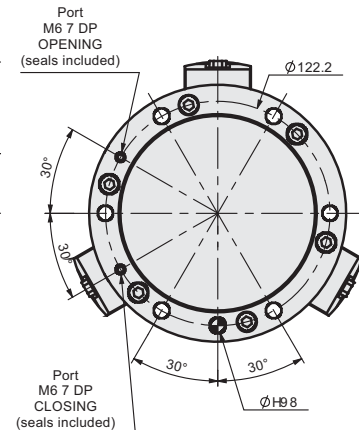
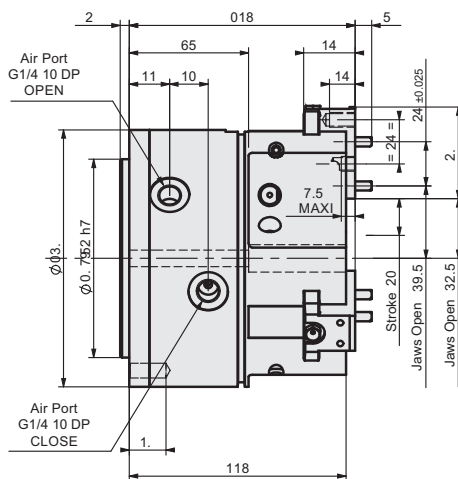
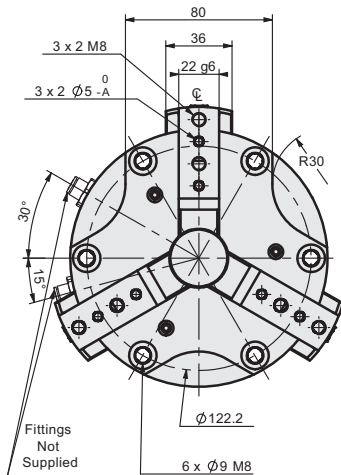
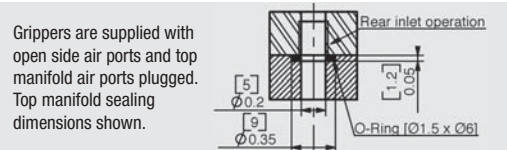
Grip Force (F6+R) ¹ , 6 bars, Springs Mid-Way, L=0	3930 N
Grip Force (F0+R) ² , 0 bars, Springs Mid-Way, L=0	1453 N
Total Stroke	40 mm
Weight	4.70 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4.5 - 7 bar
Ø Cylinder Bore	105 mm
Displacement	220 cm ³
Actuation (open / close)	0.16 s / 0.16 s
Repeatability	± 0.02 mm

1. Force with spring and air at 6bar
2. Force with spring without air

14003P-C

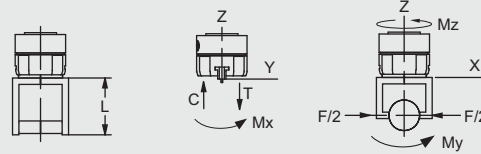
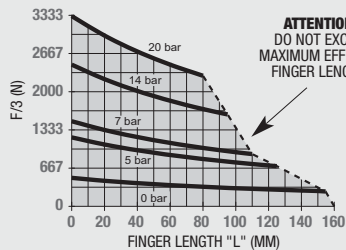
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.005" or [±.013mm]	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	--	--------------------------------	--	---



Loading Information:

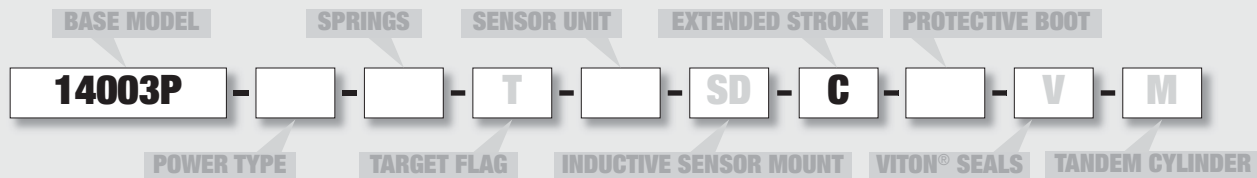
Force transmitted by the jaw on the workpiece
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile T	2180 N	590 N
Maximum Compressive C	2500 N	590 N
Maximum Moment Mx	75 Nm	20 Nm
Maximum Moment My	110 Nm	32 Nm
Maximum Moment Mz	90 Nm	32 Nm

* The Capacities are per set of jaws and are not simultaneous.

How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

PROTECTIVE BOOT ACCESSORIES	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	E	KP-317	1
Fireproof KEVLAR Protective Boot, Red	E3	KP-319	1
SENSOR ACCESSORIES			
Inductive Sensor Kit (1 holder, 1 flag)	SD	OSMK-114	1 or 2
M8 Inductive Sensor PNP with M12 connector		OISP-017-C	1 or 4
M8 Inductive Sensor NPN with M12 connector		OISN-017-C	1 or 4
Cable (2 meters) with M12 screw right gold		CABL-014	1 or 4
PNEUMATIC ACCESSORIES			
Standard Seal Repair Kit		SLKT-333	1
Viton® Seal Repair Kit		SLKT-333V	1
Hydraulic Seal Repair Kit		SLKT-334	1

Options and Accessories:
See Page 1.264-1.267

Specifications

Grip Force (F6+R) ¹ , 6 bars, Springs Mid-Way, L=0	6707 N
Grip Force (F0+R) ² , 0 bars, Springs Mid-Way, L=0	2235 N
Total Stroke	50 mm
Weight	9.04 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4.5 - 7 bar
Ø Cylinder Bore	120 mm
Displacement	494 cm ³
Actuation (open / close)	0.29 s / 0.29 s
Repeatability	± 0.02 mm

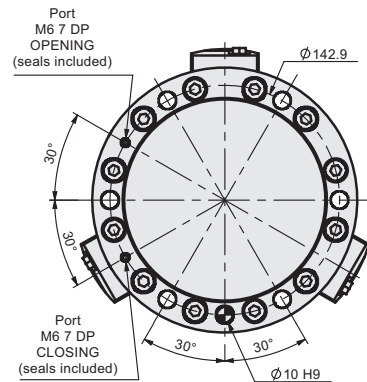
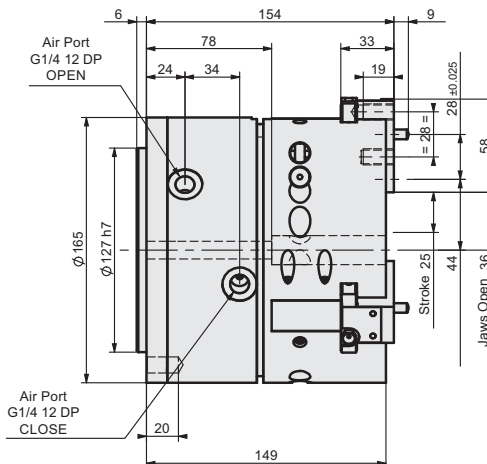
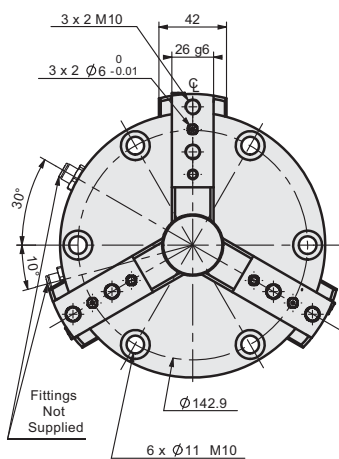
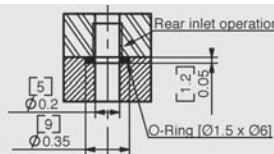
- Force with spring and air at 6bar
- Force with spring without air

16503P-C

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

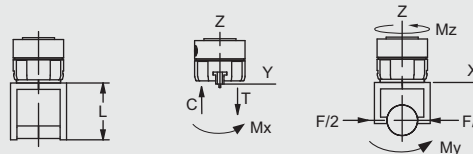
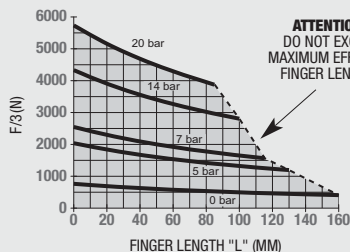
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.005" or [±.013mm]	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	--	--------------------------------	--	---

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



Loading Information:

Force transmitted by the jaw on the workpiece
(Springs compressed at 50% stroke)

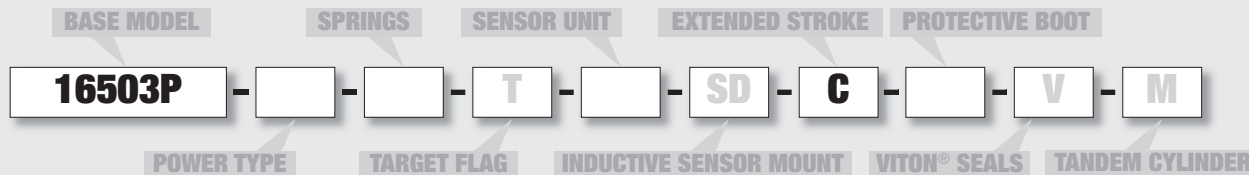


Loading Capacity*

	Static	Dynamic
Maximum Tensile T	2250 N	810 N
Maximum Compressive C	2800 N	810 N
Maximum Moment Mx	90 Nm	28 Nm
Maximum Moment My	140 Nm	40 Nm
Maximum Moment Mz	130 Nm	40 Nm

* The Capacities are per set of jaws and are not simultaneous.

How To Order:



POWER TYPE

- P Pneumatic
 - H Hydraulic (page 1.264)
- (One of two options is mandatory P or H)

SPRINGS

- RE External Gripping
- RI Internal Gripping

SENSOR UNIT

- KT1 • KT2 • KX1 • KX2

PROTECTIVE BOOT

- E • E3

PROTECTIVE BOOT ACCESSORIES

	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	E	KP-320	1
Fireproof KEVLAR Protective Boot, Red	E3	KP-322	1

SENSOR ACCESSORIES

	Model Code	Order #	Qty/Unit
Inductive Sensor Kit (1 holder, 1 flag)	SD	OSMK-115	1 or 2
M8 Inductive Sensor PNP with M8 connector		OISP-017-C	1 or 4
M8 Inductive Sensor NPN with M8 connector		OISN-017-C	1 or 4
Cable (2 meters) with M8 screw right gold		CABL-014	1 or 4

PNEUMATIC ACCESSORIES

	Model Code	Order #	Qty/Unit
Standard Seal Repair Kit		SLKT-335	1
Viton® Seal Repair Kit		SLKT-335V	1
Hydraulic Seal Repair Kit		SLKT-336	1

Options and Accessories:
See Page 1.264-1.267

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

As standard, the clamp is supplied with air to a pressure of 7 bar. The clamp is fitted with Viton O-ring seals for high temperatures.

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.**

– Choice **(H80)** allows a hydraulic power to a pressure of 80 bar max. In this case the total height of the gripper is increased (contact us).

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

Option (RE) or (RI): Spring Assist

The internal springs of the gripper ensures failsafe operation 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.

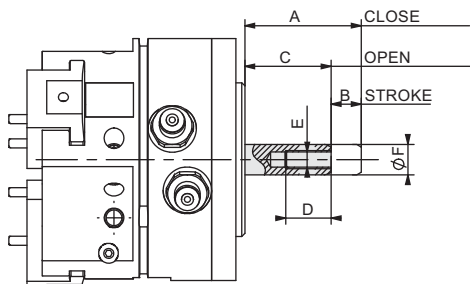
The (RE) is incompatible with the option (RI).

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

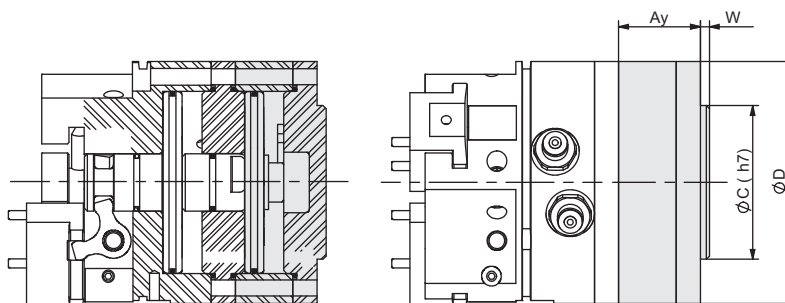
Option (M): Tandem Cylinder

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.

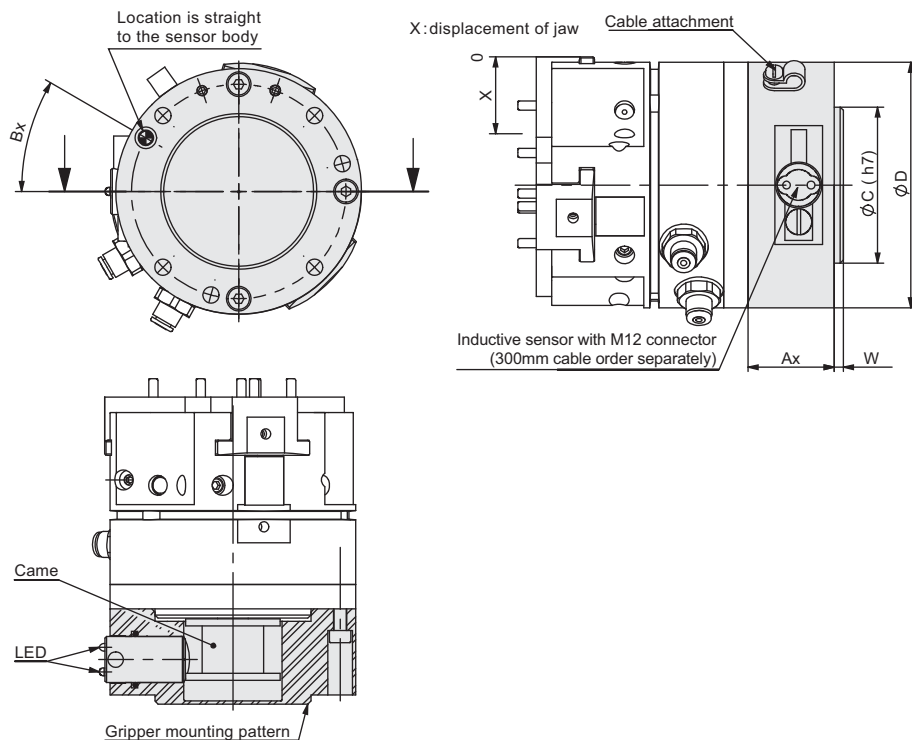
The (M) is incompatible with the option (H).

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



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 (kg)	No. of Sensing Postions (please specify when ordering)	Information area from the open grip position (green LED)	Area information relative to the closed grip position (yellow LED)
								X (mm)	X (mm)
6003P	23	30°	38.1	60	3	0.180	1	0 – 1 ^{+0,5} ₋₀	4 ⁺⁰ _{-0,5} to 5
							2	0 – 2 ^{+0,5} ₋₀	3 ⁺⁰ _{-0,5} to 5
6003P-C	23	30°	38.1	60	3	0.180	1	0 – 1.6 ^{+0,8} ₋₀	7 ⁺⁰ _{-0,8} to 8
							2	0 – 3.2 ^{+0,8} ₋₀	4.8 ⁺⁰ _{-0,8} to 8
8003P	28	30°	50.8	80	3	0.400	1	0 – 1 ^{+0,5} ₋₀	5.5 ⁺⁰ _{-0,5} to 6,5
							2	0 – 2 ^{+0,5} ₋₀	4.5 ⁺⁰ _{-0,5} to 6,5
8003P-C	28	30°	50.8	80	3	0.400	1	0 – 1.5 ^{+0,8} ₋₀	8.5 ⁺⁰ _{-0,8} to 10
							2	0 – 3.1 ^{+0,8} ₋₀	6.9 ⁺⁰ _{-0,8} to 10
11003P	36	30°	76.2	110	3	0.900	1	0 – 1 ^{+0,5} ₋₀	9 ⁺⁰ _{-0,5} to 10
							2	0 – 3 ^{+0,5} ₋₀	7 ⁺⁰ _{-0,5} to 10
11003P-C	36	30°	76.2	110	3	0.900	1	0 – 1.5 ^{+0,8} ₋₀	13.5 ⁺⁰ _{-0,8} to 15
							2	0 – 4.5 ^{+0,8} ₋₀	10.5 ⁺⁰ _{-0,8} to 15
14003P	45.5	165°	107.95	140	5	1.670	1	0 – 2 ^{+0,5} ₋₀	11 ⁺⁰ _{-0,5} to 13
							2	0 – 4 ^{+0,5} ₋₀	9 ⁺⁰ _{-0,5} to 13
14003P-C	45.5	165°	107.95	140	5	1.670	1	0 – 3 ^{+0,8} ₋₀	17 ⁺⁰ _{-0,8} to 20
							2	0 – 6.2 ^{+0,8} ₋₀	13.8 ⁺⁰ _{-0,8} to 20
16503P	65.5	165°	127	165	6	2.670	1	0 – 2 ^{+0,5} ₋₀	13 ⁺⁰ _{-0,5} to 15
							2	0 – 4 ^{+0,5} ₋₀	11 ⁺⁰ _{-0,5} to 15
16503P-C	65.5	165°	127	165	6	2.670	1	0 – 3.3 ^{+0,8} ₋₀	21.7 ⁺⁰ _{-0,8} to 25
							2	0 – 7 ^{+0,8} ₋₀	18 ⁺⁰ _{-0,8} to 25

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:

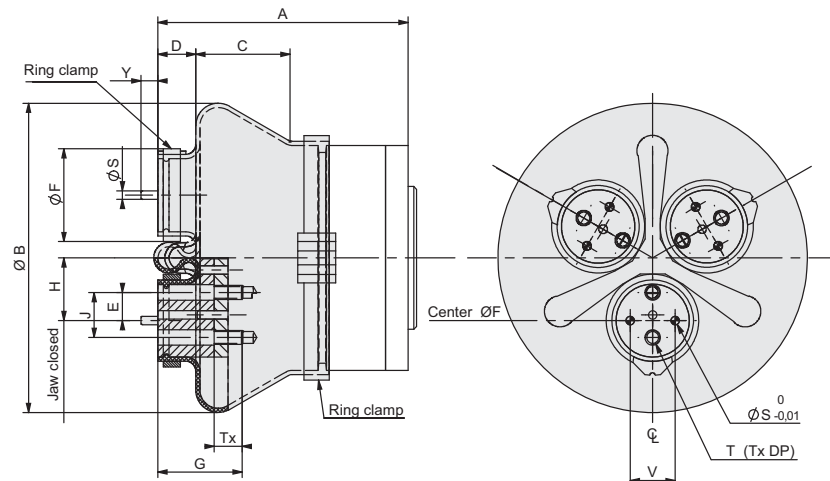
(E) Envelope of black or brown PVC for environmental grinding with emery presence.

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

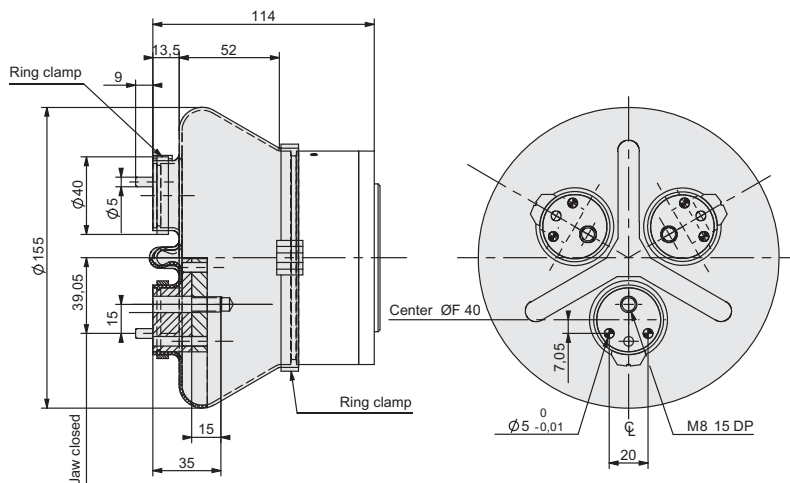
The accessory (E) is incompatible with the accessory (SD)

Model Code	Order #	Model	A	B	C	D	E	F	G	H	J	K	S	T	TX	V	Y
E	ER62P	6003P &	88	98	35	13.5	8	29	29	17.5	13	-	3	M4	9	13	6
E3	E3R62P	6003P-C															
E	ER82P	8003P &	89	110	34	13.5	10	33	30	22.3	16	-	3	M5	10	16	6
E3	E3R82P	8003P-C															
E	ER112P	11003P &	See drawing														
E3	E3R112P	11003P-C															
E	KP-311	14003P &	143	185	50	18	12	55	34	19.5	24	18	5	M8	14	-	8
E3	KP-313	14003P-C															
E	KP-314	16503P &	172	220	70	16	14	67	37	24 19	28	23	6	M10	19	-	8
E3	KP-316	16503P-C															

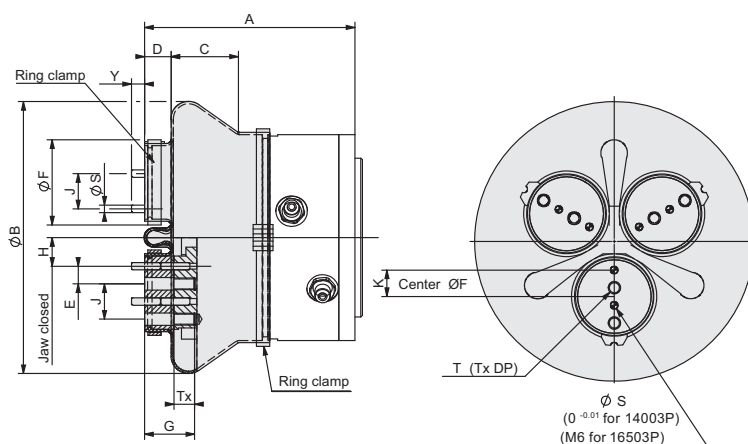
6003P
8003P



11003P



**14003P
16503P**

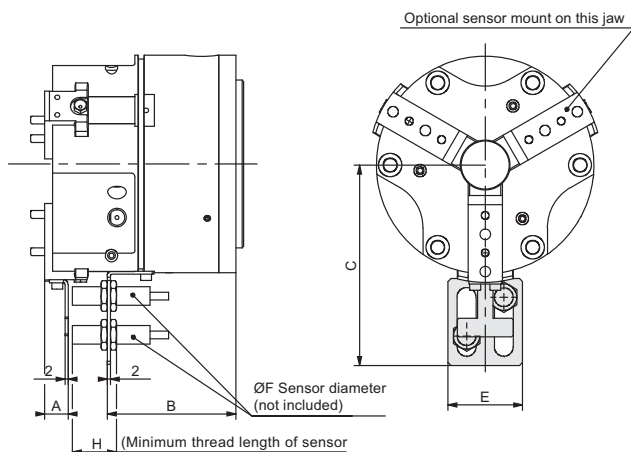


Accessory (SD): Inductive Sensor Mounting Kit

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