

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 ±.0005" 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]
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Specifications

VULCAN-142M

Total Rated Grip Force **L=2** in [50.8mm] @ 0°

100 psi, 6.9 bar, w/spring	1343 lbs.	5975 N
100 psi, 6.9 bar, w/o spring	917 lbs.	4079 N
Stroke	17.6° of stroke for each finger	
Weight	9.04 lbs.	4.1 kg
Pressure Range (without springs)	30-100 psi	2-7 bar
Pressure Range (with springs)	60-100 psi	4-7 bar
Cylinder Bore Ø	4.13 in.	105 mm
Displacement	13.1 in³	215 cm³
Temperature Range		
- Viton® Seals Standard	-20°~320° F	-30~160° C
- HT Dynamic Steel Ring	Up to 840°	Up to 450°
Actuation (open/close)	0.16 sec./0.16 sec.	
Accuracy	±0.003 in.	±0.8 mm
Repeatability	±0.0008 mm.	±0.02 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

Loading Capacity†

	Static	Dynamic
Maximum Tensile T	142 lbs. [630 N]	28 lbs. [126 N]
Maximum Compressive C	142 lbs. [630 N]	28 lbs. [126 N]
Maximum Moment M_x	460 in.-lbs. [52 Nm]	115 in.-lbs. [13 Nm]
Maximum Moment M_y	6160 in.-lbs. [696 Nm]	611 in.-lbs. [69 Nm]
Maximum Moment M_z	460 in.-lbs. [52 Nm]	115 in.-lbs. [13 Nm]

†Capacities are per set of jaws and are not simultaneous

How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SEALS SENSING

VULCAN-142M - HT - RI - T - ET

SPRING PROTECTION

SEALS	HT* Dynamic Steel Ring (Up to 450°C) Leave Blank. Viton Seals up to 160° (Standard)
SPRING	RE Closed RI Open Leave Blank. No Spring Option (Standard)
SENSING	T* Rear Output Shaft for Sensing Leave Blank. No Sensing Option (Standard)
PROTECTION	E3 Fire-proof Kevlar Sealed Jaw Boot (up to 275°C) E5 Fire-proof Kevlar Sealed Jaw Boot (up to 450°C) Stainless Steel Heat Shield Leave Blank. No Protection Option (Standard)

SEALED BOOT KITS

	ORDER #	QTY/UNIT
-E3 Fire Proof Kevlar Sealed jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)	SLKT-378	1
-E5 Kevlar Sealed Jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)	SLKT-456	1

SEAL REPAIR KIT

Viton® Seal Repair Kit	SLKT-333V	1
-HT Dynamic Steel Ring Repair Kit	SLKT-459	1

SAMPLE ORDER: VULCAN-142M-T-ET

Ex: Vulcan-142M Gripper, Rear Output Shaft for Sensing, Stainless Steel Heat Shield

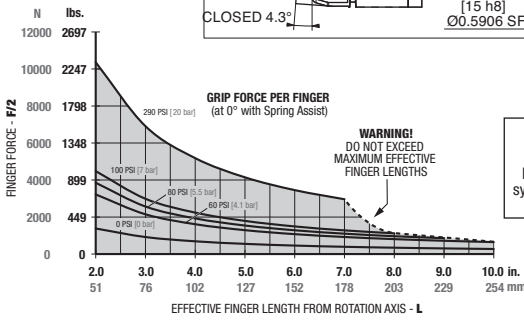
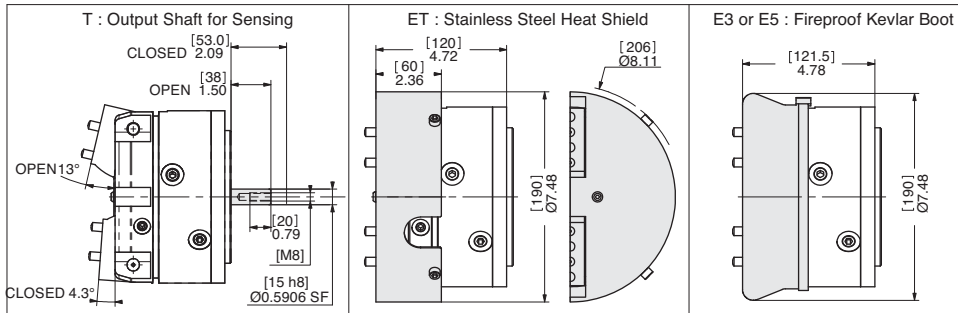
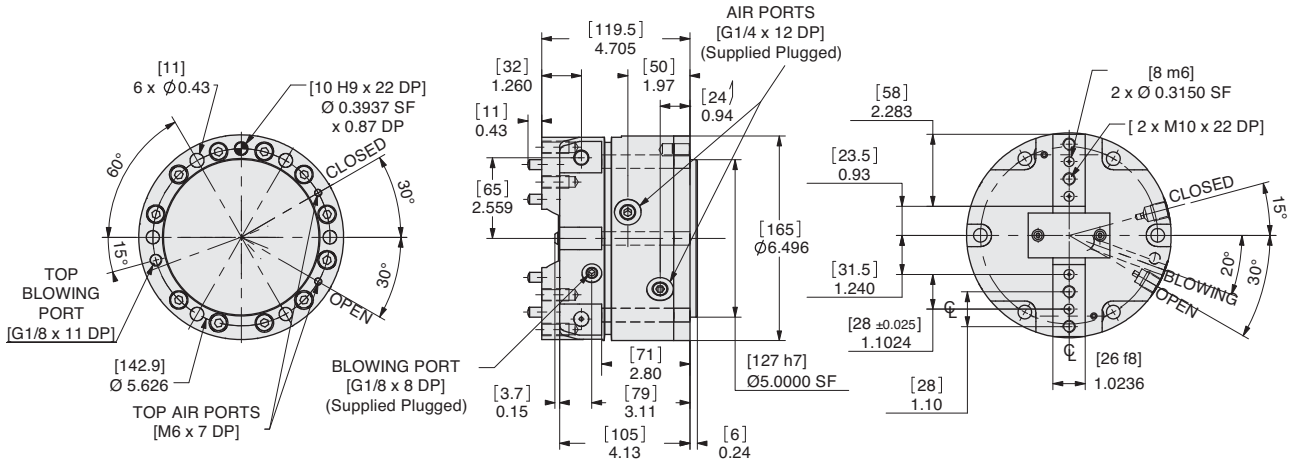
*HT and T Options are not compatible.

ANGULAR GRIPPER VULCAN-162M HIGH TEMPERATURE SERIES



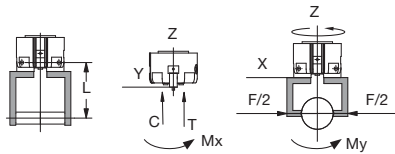
VULCAN SERIES

2.18



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 ±.0005" 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]
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Loading Capacity^{††}

	Static	Dynamic
Maximum Tensile T	189 lbs. [840 N]	38 lbs. [168 N]
Maximum Compressive C	189 lbs. [840 N]	38 lbs. [168 N]
Maximum Moment M_x	664 in.-lbs. [75 Nm]	166 in.-lbs. [18.8 Nm]
Maximum Moment M_y	9293 in.-lbs. [1050 Nm]	885 in.-lbs. [100 Nm]
Maximum Moment M_z	664 in.-lbs. [75 Nm]	166 in.-lbs. [18.8 Nm]

^{††}Capacities are per set of jaws and are not simultaneous

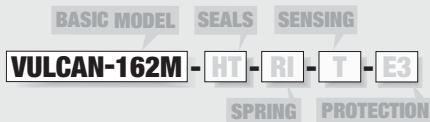
Specifications

VULCAN-162M

Total Rated Grip Force **L=2** in [50.8mm] @ 0°

100 psi, 6.9 bar, w/spring	2015 lbs.	8964 N
100 psi, 6.9 bar, w/o spring	1393 lbs.	6198 N
Stroke	17.3° of stroke for each finger	
Weight	14.77 lbs.	6.7 kg
Pressure Range (without springs)	30-100 psi	2-7 bar
Pressure Range (with springs)	60-100 psi	4-7 bar
Cylinder Bore Ø	4.72 in.	120 mm
Displacement	19.7 in ³	322 cm ³
Temperature Range		
- Viton® Seals Standard	-20°-320° F	-30°-160° C
- HT Dynamic Steel Ring	Up to 840°	Up to 450°
Actuation (open/close)	0.21 sec./0.21 sec.	
Accuracy	±0.003 in.	±0.8 mm
Repeatability	±0.0008 mm.	±0.02 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

How to Order: (Order Accessories separately from Basic Model)



SEALS	HT* Dynamic Steel Ring (Up to 450°C) Leave Blank. Viton Seals up to 160° (Standard)
SPRING	RE Closed RI Open Leave Blank. No Spring Option (Standard)
SENSING	T* Rear Output Shaft for Sensing Leave Blank. No Sensing Option (Standard)
PROTECTION	E3 Fire-proof Kevlar Sealed Jaw Boot (up to 275°C) E5 Fire-proof Kevlar Sealed Jaw Boot (up to 450°C) ET Stainless Steel Heat Shield Leave Blank. No Protection Option (Standard)

SEALED BOOT KITS

	ORDER #	QTY/UNIT
-E3 Fire Proof Kevlar Sealed jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)	SLKT-381	1
-E5 Kevlar Sealed Jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)	SLKT-457	1

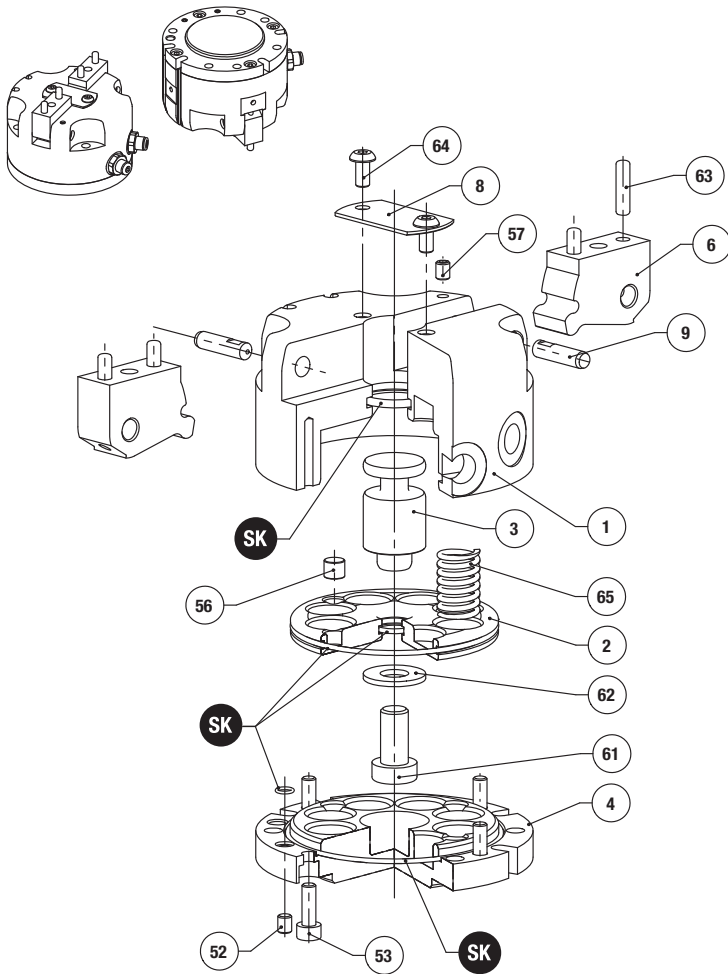
SEAL REPAIR KIT

Viton® Seal Repair Kit	SLKT-335V	1
-HT Dynamic Steel Ring Repair Kit	SLKT-460	1

SAMPLE ORDER: VULCAN-162M-RE-T-E3

Ex: Vulcan-162M Gripper, Spring Closed, Rear Output Shaft for Sensing, Fireproof Kevlar Sealed Jaw Boot up to 275°

*HT and T Options are not compatible.

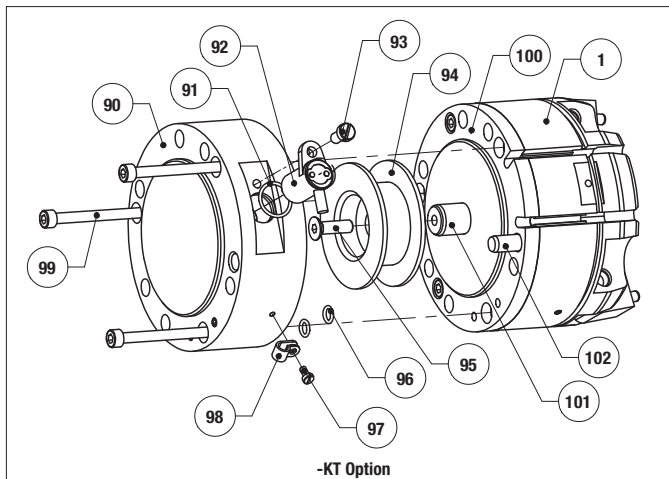


Item	Qty	Name
01	1	Body
02	1	Piston
03	1	Cam Driver
04	1	Cap
06	2	Jaw
08	1	Shielded case
09	2	Pivot Pin
52	2	SS Screw, Cap
53	4	SHC Screw, Cap
56	1	Magnet
57	2	SS Screw, Body
61	1	SHC Screw, Piston
62	1	Nut, Piston
63	4	Pin, Jaw
64	2	Screw, Shielded case
65	1	Springs
90	1	KT Body
91	1	KT Body, O-Ring
92	1	KT Sensor
93	1	KT Body, Screw
94	1	Target
95	1	Target, Screw
96	2	KT Body, O-Ring
97	1	KT Body, Screw
98	1	Wire Holder
99	3	KT Body, Screw
100	1	Cap for KT Shaft
101	1	Shaft
102	1	KT Body, Pin

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

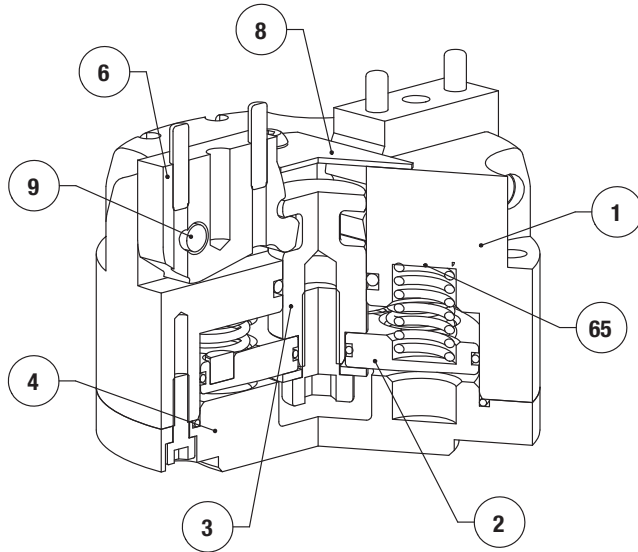
Assembly Procedure

- Lubricate and install the seals onto the cap (x3), the piston (x2) and the body (x1).
- If top airports are used, remove the plug screws from the cap (#4) and insert into side airports of the body (#1).
- Assemble the piston (#2) and the cam driver (#3) with the washer and the screw.
 - RE option : Place the counterbore holes of the piston on the cam driver side.
 - RI option : Place the counterbore holes of the piston on the screw side.
- Insert the piston into the body. Orientate the piston so that the magnets are placed in front of the body slots.
 - RE option : insert the springs (#65) between the body and the piston in the counterbore holes.
- Place and screw the cap onto the body. The dowel holes of the cap and of the body have to be aligned.
 - RI option : insert the springs (#65) between the cap and the piston in the counterbore holes.
- Lubricate the slots and the jaws (#6) and the groove of the cam driver.
- Place the jaws into the body slot and insert the pivot pin aligning with the jaw hole. The flat of the pivot pin has put in front of the rear side of the body. Screw SS screw into the body to prevent the pivot pin from moving.
- Attach the shielded case.



**SK Seal Repair Kit Order #'s
See Product Data Sheets**

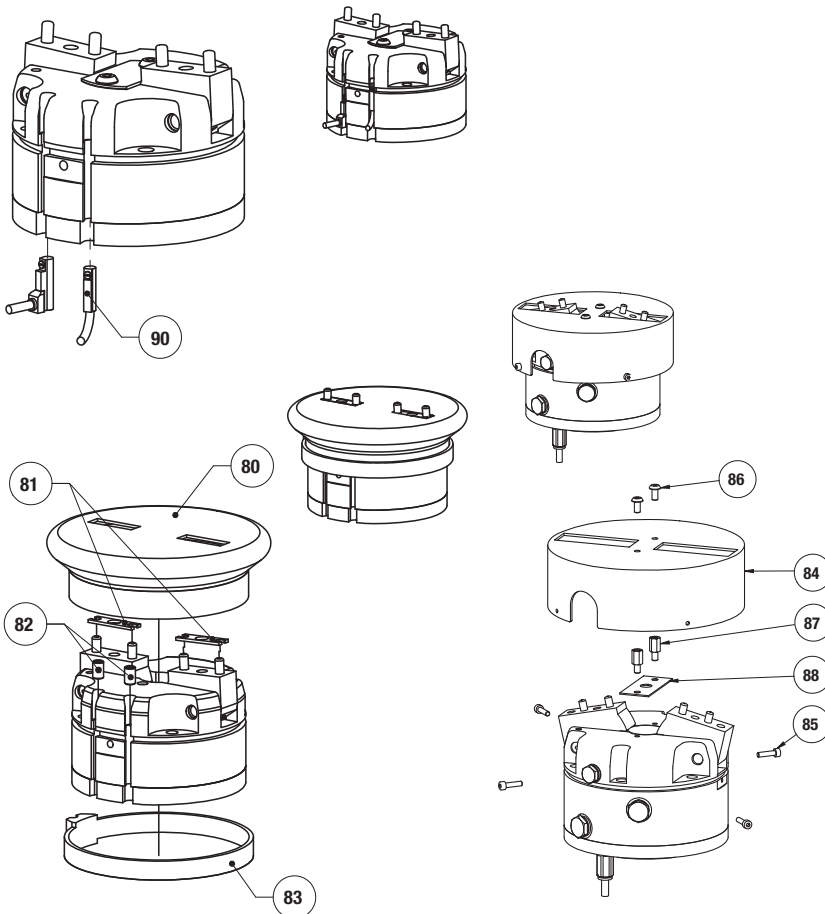
<p>Seal Kit Items</p>	<p>Thread Locker</p>	<p>Krytox™ Lubricant</p>	<p>Lightweight Machine Oil</p>	<p>Teflon™ Based Grease</p>	<p>Super Bonder</p>	<p>Third Angle Projection</p>
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Item	Qty	Name
01	1	Body
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03	1	Cam Driver
04	1	Cap
06	2	Jaw
08	1	Shielded case
09	2	Pivot Pin
52	2	SS Screw, Cap
53	4	SHC Screw, Cap
56	1	Magnet
57	2	SS Screw, Body
61	1	SHC Screw, Piston
62	1	Nut, Piston
63	4	Pin, Jaw
64	2	Screw, Shielded case
65	1	Springs

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

ACCESSORY INSTALLATION & ADJUSTMENT INSTRUCTIONS



Installation - MR Sensors

- 1) Insert sensors (#90) for either end of the profile slots
- 2) Set the sensors with the integrated screw

Installation - Boot

- 1) Mount the gripper onto the customer mounting plate
- 2) Insert the spacer (#81) into the pins of the jaws
- 3) Insert sensor slot plugs (#82) into sensor mounting groove. Install the boot (#80) on the gripper. The jaw opening of the boot has to fit with the spacer. Insert lip of boot seal into the groove of the gripper
- 4) Use the clamping ring (#83) to fasten the boot on the gripper
- 5) Attach fingers to the jaws (ensure that boot is sealed between the jaws and the finger)

Installation - Stainless Steel Shield

- 1) Mount the gripper onto the customer mounting plate
- 2) Insert the spacer plate (#88) using (2) fasteners (#87) to the center of the gripper
- 3) Install the stainless steel shield (#84) using the (2) fasteners (#86) on top of the stainless steel shield and the (4) fasteners (#85) on the side of the stainless steel shield
- 4) Install fingers to gripper as required

SK

Seal Kit
Items



Thread
Locker



Krytox™
Lubricant



Lightweight
Machine Oil



Teflon™ Based
Grease



Super
Bonder



Third Angle
Projection



DESIGN NOTES

RUA/VULCAN
SERIES

2.21

