

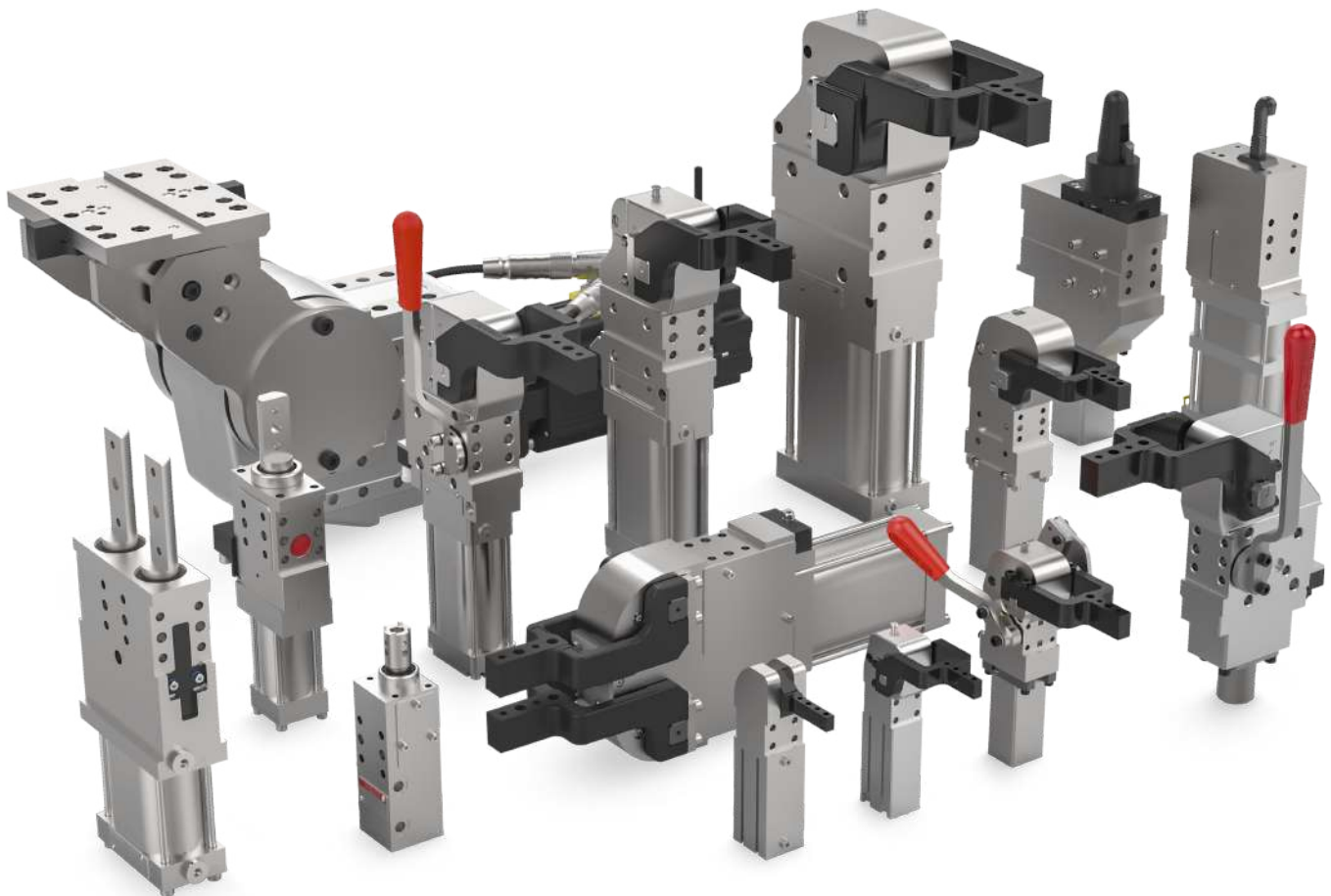
# Power Clamps

01/28/2025



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# Power Clamps

01/28/2025

This catalog is a custom document and the products included is based on your unique selection from portions of complete catalogs that already exist. Please refer to our full catalogs for more information on products not included in this customized document.

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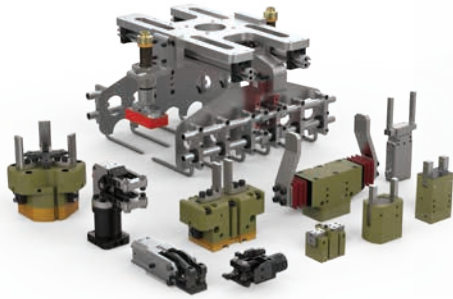
# Power Clamps

01/28/2025

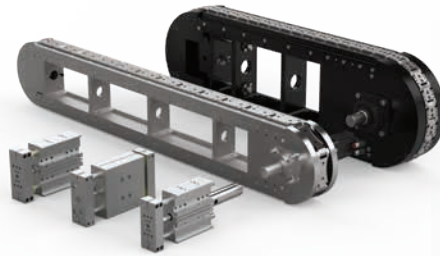
## Table of Contents (continued)

# ABOUT DESTACO

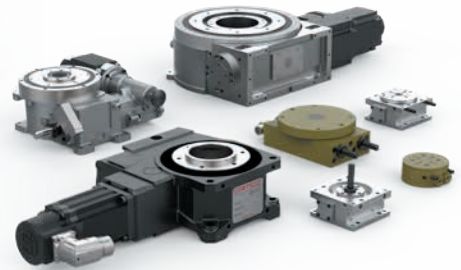
Built on a Strong Foundation



Gripping Solutions



Linear Positioning Solutions



Rotary Positioning Solutions



Clamping Solutions



CRL Remote Handling Solutions



Robotic Tooling Solutions

Destaco, a Dover company, is a global leader in the design and manufacture of high-performance automation, workholding and remote-handling solutions. The company serves customers in a variety of end-markets, including the automotive, life sciences, consumer packaged goods, aerospace, industrial and nuclear sectors.

Built on a legacy of more than 100 years, Destaco offers a comprehensive portfolio of products designed to engineer precise movement, placement and control solutions that drive productivity and uptime for manufacturers around the world. The Destaco family of products consists of industry-leading brands such as Destaco Manual Clamps, Power Clamps, and End Effectors; CAMCO™ and Ferguson™ Indexers; Robohand™ Grippers; and CRL™ Manipulators and Transfer Ports.

Destaco is based in Auburn Hills, Michigan, U.S.A. The company has more than 800 employees with 13 locations, in 9 countries, across the Americas, Europe and Asia.

Destaco is part of Dover Corporation, a diversified global manufacturer with annual revenues of \$7 billion. The company delivers innovative equipment and components, specialty systems and support services through four major operating segments: Energy, Engineered Systems, Fluids, and Refrigeration & Food Equipment. Headquartered in Downers Grove, IL, (NYSE: DOV)

More information is available at [destaco.com](http://destaco.com) and [dovercorporation.com](http://dovercorporation.com)

## Focusing all our Resources

### New Product Development

Destaco has dedicated resources to design and build the next generation of products and solutions

### Customer Service and Technical Support

Destaco has industry leading global support to address any product and application concerns you may have

### Design Tools

Destaco provides an extensive CAD library, sizing software, and online tools to support our global customers



## Our Insight Working for You

### Application Engineering

We utilize our expertise and complete portfolio of products to create solutions that fit our customers' needs and applications



## Pneumatic & Electric Power Clamps, Pin Clamps/Packages, and Pivot Units

### Clamp with Confidence

#### Markets



Transportation



Aerospace



Food & Packaging



Industrial



Consumer Goods

#### Applications



Assembly



Welding



Fixture and Testing



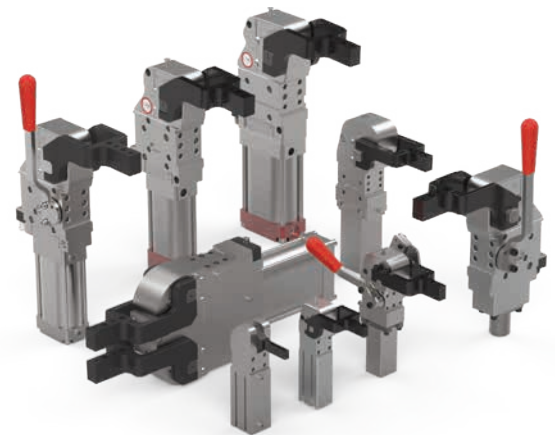
White Goods/  
Appliance



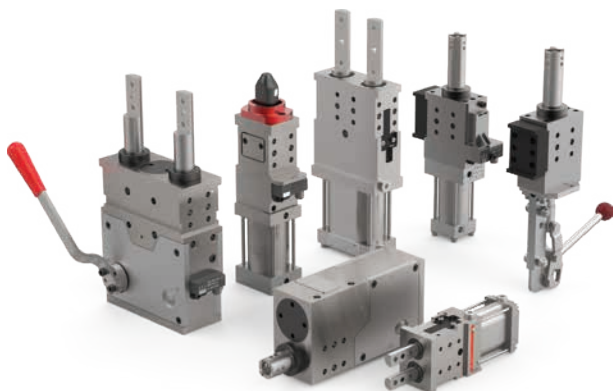
CNC/Machining



Electric Products



Pneumatic Power Clamps



Pneumatic Pin Clamps and Packages



Pneumatic Pivot Units



Body-in-White EcoSmart Solutions

# PNEUMATIC CLAMPING SOLUTIONS

## Table of Contents



EcoSmart Electric Products .....PC-ELC



Pneumatic Power Clamps ..... PC-PPC



Pin Clamps.....PC-HPC



Precision Guides..... PC-PGL



Pin Packages .....PC-PKG



Pivot Units.....PC-PVT

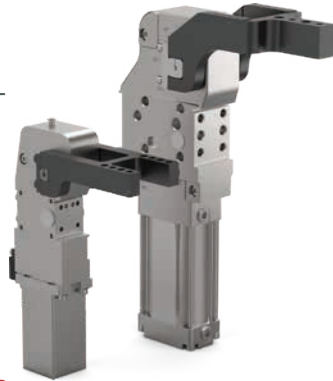
# FEATURED NEW PRODUCTS

## 82L-3E /82M-3E Power Clamps

Adjustable Light and Heavy-weight Enclosed Power Clamps

- Field adjustable arm opening angle
- Enclosed aluminum body
- Optional U-Arms and lateral arms available

See Pages PC-PPC-13 & 33



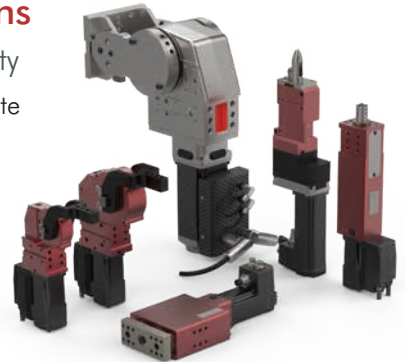
## Body-in-White EcoSmart Solutions

Evolution in Productivity

- Complete Body-in-White Product Portfolio
- Smart & Economy Line
- Plug & Play solution - fast start up
- Integrated position & hold down control

See Page PC-ELC-1

EcoSmart



## TCC Series

Tolerance Compensation Heavyweight Enclosed Power Clamps

- Tolerance compensation
- Field adjustable arm opening angle
- Enclosed aluminum body
- Optional U-Arms and lateral arms available

See Pages PC-PPC-29



## 84A40/50 Series

Dual-Arm Tolerance Compensation Clamps

- Tolerance compensation
- 90° clamp arm motion
- Multiple clamp arm options
- High clamping force, compact size
- Enclosed aluminum body

See Page PC-PPC-83



## 85P50-1800 Series

Tolerance Compensation Centering Pin Clamp

- Tolerance compensation
- Self-locking mechanism in clamping position
- Variety of pins and hook sizes
- Integrated sensing
- Enclosed aluminum body

See Pages PC-HPC-19



## 86P30-5 Series

Single Pin Packages

- Available with 20 mm or 40 mm strokes
- Compact design with lateral and front-face mounting areas
- Enclosed aluminum body

See Page PC-PKG-1



## RCM/RFM Series

Pneumatic Pivot Units

- Field adjustable opening angle
- Integrated (SBI) Lock System (RFM Series)
- Fixed inductive sensor
- Four cylinder bore sizes, one cylinder length
- Pneumo-hydraulic motion control

See Page PC-PVT-1



## 85D5-2 Series

Double Pin Package

- Optional hand lever for manual control
- Compact design with lateral and front-face mounting areas
- Sensors can be mounted on either side of unit
- Flexible hand lever mounting positions

See Pages PC-PKG-29



# PNEUMATIC & ELECTRIC POWER CLAMPS

## Sizing and Application Chart



Series	Page PC-ELC-#	Page PC-PC-#	Holding Torque at 5 bar Nm [ft-lb]						Clamping Torque at 5 bar Nm [ft-lb]						Piston Diameter mm [in]					
			0 to 100 [0 to 74]	100 to 500 [74 to 369]	500 to 1000 [369 to 738]	1000 to 2000 [738 to 1475]	2000 to 4000 [1475 to 2950]	0 to 100 [0 to 74]	100 to 500 [74 to 369]	500 to 1000 [369 to 738]	1000 to 2000 [738 to 1475]	2000 to 4000 [1475 to 2950]	Less than 25 [0.98]	25 [0.98]	32 [1.26]	40 [1.57]	50 [1.97]	63 [2.48]	80 [3.15]	
92W	1		●					●●												
81L	1		●					●			●									
82L-4	5		●					●			●●									
82L-3E	13		●●					●●			●●			●●						
TCC-2	29		●●					●●						●●		●●				
82M-3E	33		●		●●			●●						●●		●●		●●		
52H-3E	59				●															
870/871	71		●					●								●				
860/861	73			●				●								●				
890/891	73				●			●									●			
1000/1001	73				●				●								●●			
82D	75		●					●●						●		●				
84A	83		●●					●●						●●		●●				



# PNEUMATIC & ELECTRIC POWER CLAMPS

## Sizing and Application Chart

Material	Weight		Suitable Application Areas													Features				
	Kg	[lbs]	Welding	Assembly	Dirty Environment	End Effectors	Machining	Duty Cycle	Adjustable Opening Angle	Inductive Sensors Available	Dual Arms	Tolerance Compensating	Manual Version Available	Center Arm	Lateral Arms	Toggle Locking				
Aluminum			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Steel			⊗	○	○	○	○	○						✓	✓	✓				
Electric																				
Pneumatic																				
0 to 2 [0 to 4.41]			●																	
2 to 4 [4.41 to 8.82]			●	●																
4 to 6 [8.82 to 13.23]			●	●	●															
6 to 8 [13.23 to 17.64]			●	●	●	●														
More than 8 [17.64]																				
0 to 0,5 [0 to 31]			●																	
0,5 to 1,0 [31 to 61]			●	●																
1,0 to 2,0 [61 to 122]			●	●	●															
More than 2,0 [122]			●	●	●	●														
Welding			○	○	○	○	○	○	✓	✓										
Assembly			⊗	○	○	○	○	○						✓	✓	✓				
Dirty Environment			○	○	○	○	○	○	✓	✓				✓	✓	✓				
End Effectors			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Machining			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Duty Cycle			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Adjustable Opening Angle			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Inductive Sensors Available			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Dual Arms			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Tolerance Compensating			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Manual Version Available			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Center Arm			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Lateral Arms			○	○	○	○	○	○	✓	✓				✓	✓	✓				
Toggle Locking			○	○	○	○	○	○	✓	✓				✓	✓	✓				

○ Excellent/High   ○ Fair/Medium   ● Poor/Low   ⊗ Not Recommended



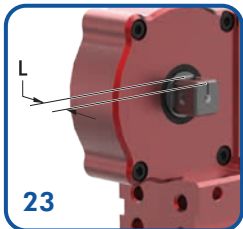
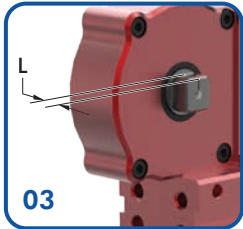


# 92W-1

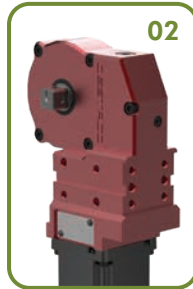
## Enclosed Electric Power Clamps | Smart Clamp | How to Order

92W-1    23    00    02    02

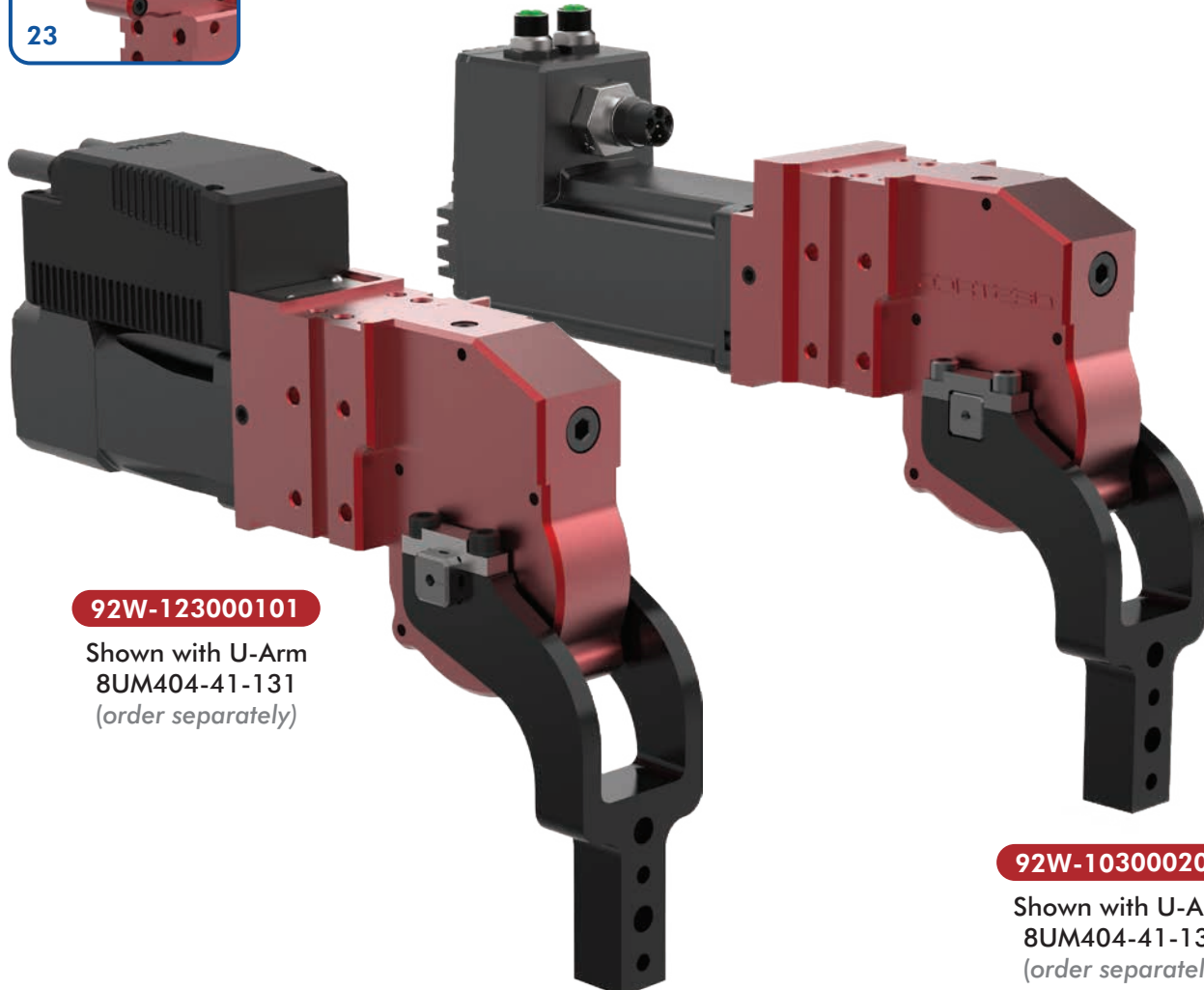
Clamp Arm Shaft	Shaft Length (L)
03	10 mm [0.39 in]
23	16 mm [0.63 in]



**Body Style**  
 for 400 V Motor Option 01 only  
 01 Compact Clamp Design  
 for 48 V Motor Option 02 only  
 02 Compact Clamp Design

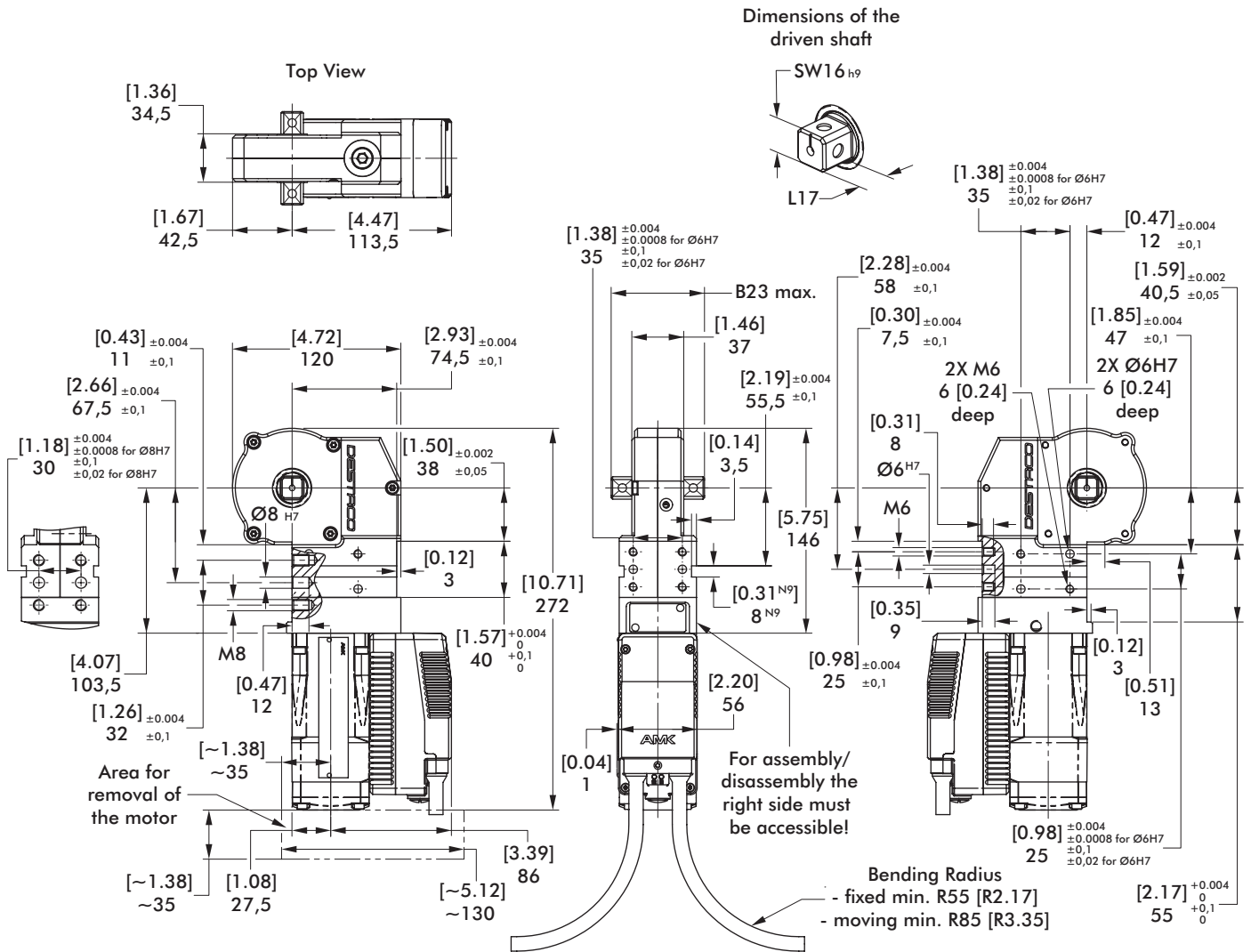


**Motor**  
 for Body Style Option 01 only  
 01 Servo Drive, Decentral 400 V  
 for Body Style Option 02 only  
 02 Servo Drive, Decentral 48 V



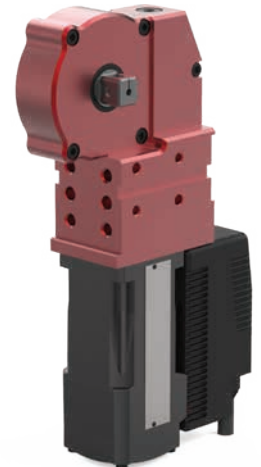
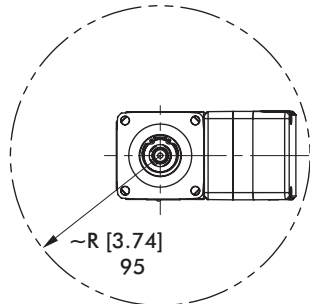
**92W-123000101**  
 Shown with U-Arm  
 8UM404-41-131  
 (order separately)

**92W-103000202**  
 Shown with U-Arm  
 8UM404-41-131  
 (order separately)



**Area of Interference:**  
Keep this area free for assembly/disassembly work!

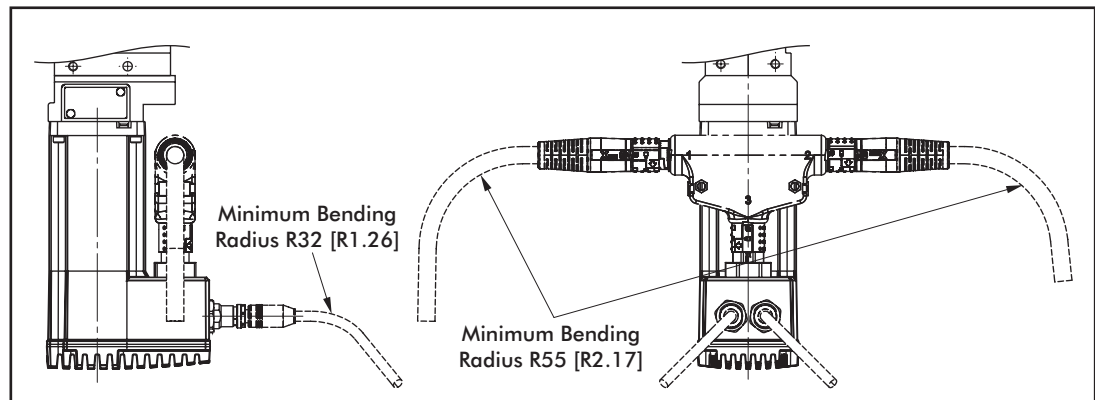
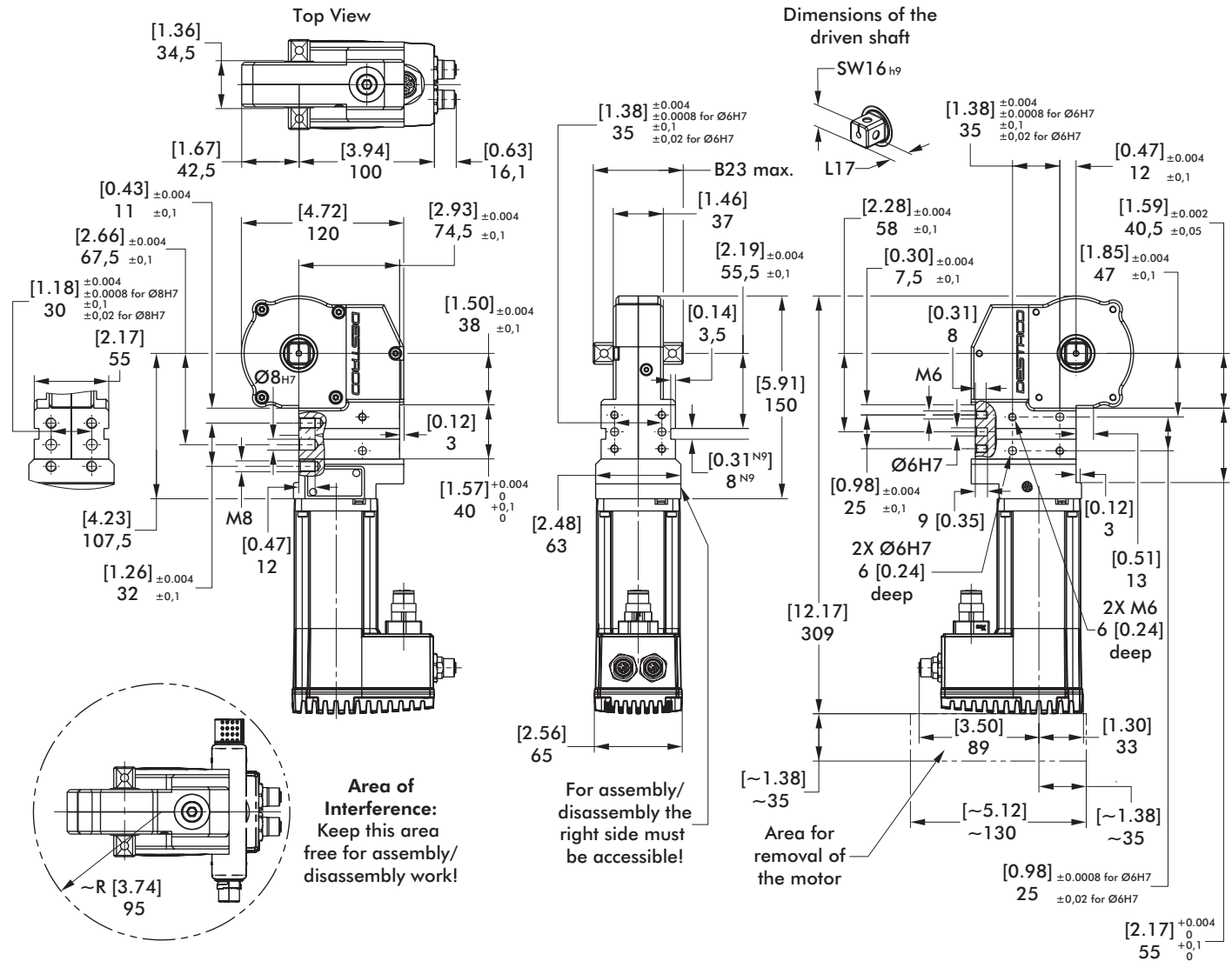
mm [INCH]  
THIRD ANGLE PROJECTION



Model	Max. Holding Torque Nm [ft-lb]	Max. Clamping Torque Nm [ft-lb]	Weight kg [lbs]	B23 Max.	L17
92W-103000101	[332]	[7.4-74]	[7.72]	54,5 [2.15]	10 [0.39]
92W-123000101	450	10-100	3,5	66,5 [2.62]	16 [0.63]

# 92W-1....0202

## Enclosed Electric Power Clamps | Smart Clamp | Dimensions | Technical Specifications

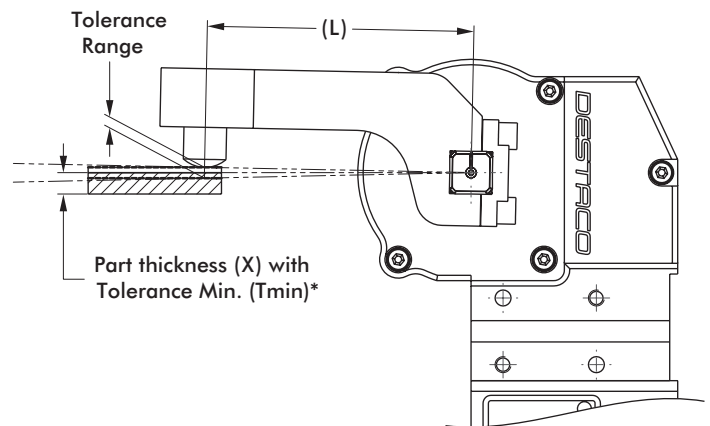


Model	Max. Holding Torque Nm [ft-lb]	Max. Clamping Torque Nm [ft-lb]	Weight kg [lbs]	B23 Max.	L17
92W-103000202	[332] 450	[7.4-89] 10-120	[7.93] 3,6	54,5 [2.15]	10 [0.39]
92W-123000202				66,5 [2.62]	16 [0.63]

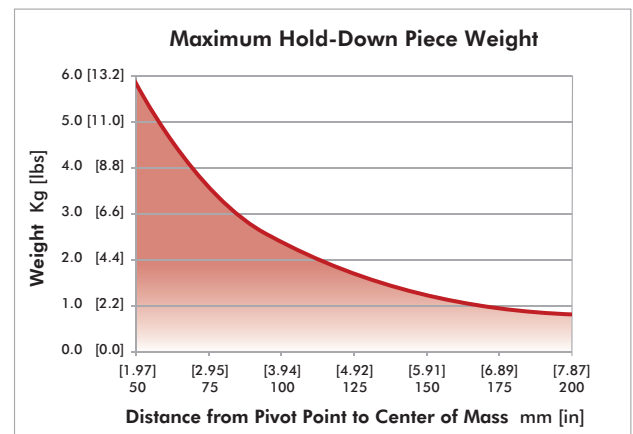
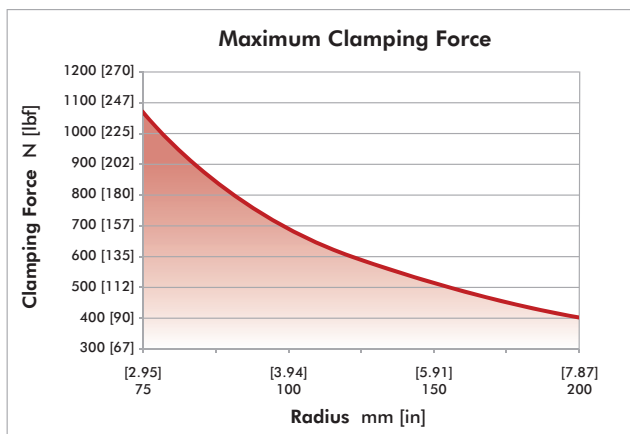
### Part Present Control and Tolerance Compensation

Distance (L) [in] mm	Part Thickness (X) Min. Tolerance (Tmin)* [in] mm	Tolerance Range [in] mm
[3.94 ±0.004] 100 ±0,1	[±0.0098] ±0,25	[0.019] 0,5
[5.91 ±0.004] 150 ±0,1	[±0.0138] ±0,35	[0.027] 0,7
[7.87 ±0.004] Max. 200 ±0,1 Max.	[±0.0177] ±0,45	[0.031] 0,9

\*Specification only as a guideline



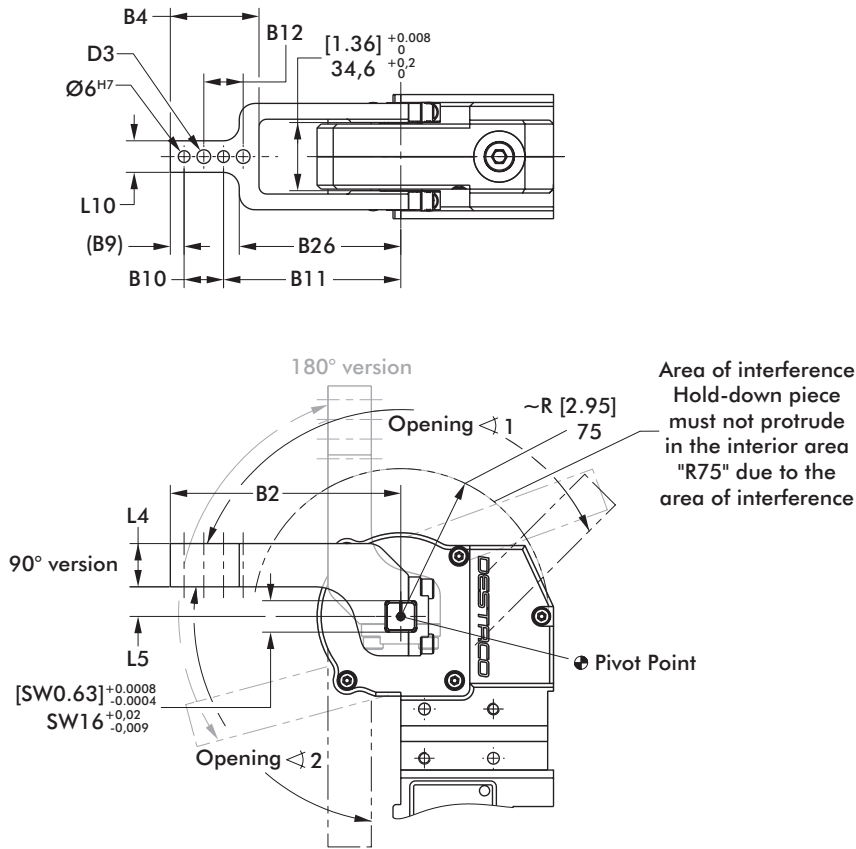
### Technical Specifications



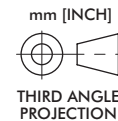
# 92W-1 U-ARMS CENTER (ALUMINUM)

Enclosed Electric Power Clamps | Dimensions | Technical Specifications

## U-Clamp Arm, Center



- 8UM404-00-117
- 8UM404E-15-117
- 8UM404E-15-144
- 8UM404E-25-117
- 8UM404E-45-107
- 8UM404-41-131



Arm Model No.	Max. Opening Angle for 90° Version		Max. Opening Angle for 180° Version		Weight kg [lbs]	B2	B4	B9	B10	B11	B12	B26	D3	L4	L5	L10
	$\sphericalangle 1$	$\sphericalangle 2$	$\sphericalangle 1$	$\sphericalangle 2$		$[\pm 0.0008]$ $\pm 0,02$	$[\pm 0.004]$ $\pm 0,1$	$[\pm 0.008]$ $\pm 0,2$						$[\pm 0.004]$ $\pm 0,1$		
8UM404-00-117	135°	85°	55°	140°	[0.49] 0,22	[4.61] 117	[1.77] 45	[0.28] 7	[0.79] 20	[3.54] 90	[0.79] 20		[0.28] 7	[0.87] 22	0	[0.63] 16
8UM404E-15-117		70°	105°	[0.51] 0,23	[5.67] 144	[2.83] 72	[0.35] 9	[1.18] 30	[4.13] 105	[1.18] 30	[3.23] 82	[0.35] 9	[1.10] 28	[0.59] 15	[0.79] 20	
8UM404E-15-144		90°	90°	100°	[0.73] 0,33	[4.61] 117	[1.77] 45	[0.28] 7	[0.79] 20	[3.54] 90	[0.79] 20		[0.28] 7		[0.98] 25	[0.63] 16
8UM404E-25-117		110°	95°	[0.53] 0,24	[4.21] 107	[1.77] 45	[0.28] 7	[0.79] 20	[3.15] 80	[0.79] 20	[2.83] 72	[0.28] 7	[0.87] 22	[1.77] 45	[0.63] 16	
8UM404E-45-107		105°	95°	[0.64] 0,29	[5.16] 131	[2.64] 67	[0.35] 9	[1.18] 30	[3.62] 92	[1.18] 30	[3.03] 77	[0.35] 9		[1.61] 41	[0.79] 20	
8UM404-41-131		135°	105°	95°	[0.64] 0,29	[5.16] 131	[2.64] 67	[0.35] 9	[1.18] 30	[3.62] 92	[1.18] 30	[3.03] 77	[0.35] 9		[1.61] 41	[0.79] 20

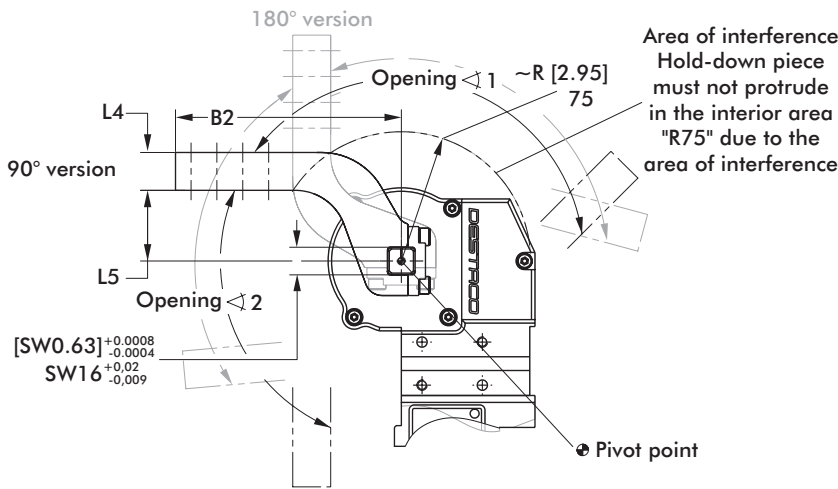
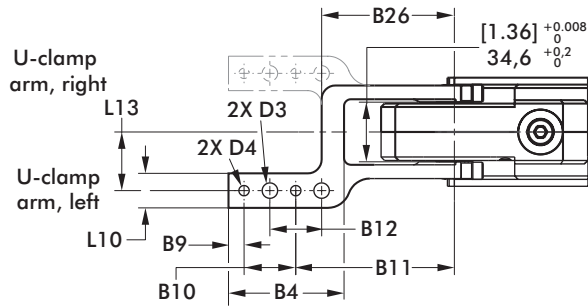
Dimensions = [in] mm



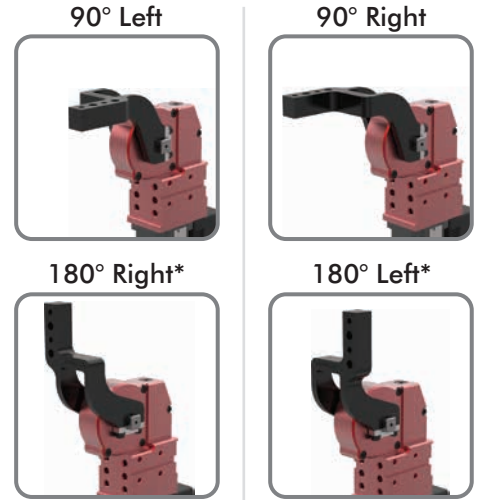
# 92W-1 U-ARMS OFFSET (ALUMINUM)

Enclosed Electric Power Clamps | Dimensions | Technical Specifications

## U-Clamp Arm, Offset



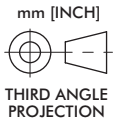
Area of interference  
Hold-down piece  
must not protrude  
in the interior area  
"R75" due to the  
area of interference



8UL404-00-117  
8UL404E-15-117  
8UL404E-25-117  
8UL404E-45-107  
8UL404E-15-144  
8UL404-41-131

8UR404-00-117  
8UR404E-15-117  
8UR404E-25-117  
8UR404E-45-107  
8UR404E-15-144  
8UR404-41-131

\*90° left/180° right uses same clamp arm.  
90° right/180° left uses same clamp arm.



Arm Model No. Left 90° / Right 180°	Arm Model No. Right 90° / Left 180°	Max. Opening Angle for 90° Version		Max. Opening Angle for 180° Version		Weight kg [lbs]
		$\sphericalangle 1$	$\sphericalangle 2$	$\sphericalangle 1$	$\sphericalangle 2$	
8UL404-00-117	8UR404-00-117	135°	85°	55°	140°	0,22 [0.49]
8UL404E-15-117	8UR404E-15-117		70°	105°	0,23 [0.51]	
8UL404E-25-117	8UR404E-25-117		90°	100°	0,24 [0.53]	
8UL404E-45-107	8UR404E-45-107		70°	105°	0,35 [0.77]	
8UL404E-15-144	8UR404E-15-144		105°	95°	0,30 [0.66]	
8UL404-41-131	8UR404-41-131		105°	95°		

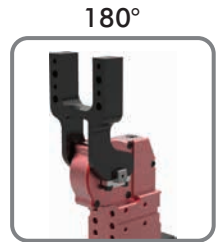
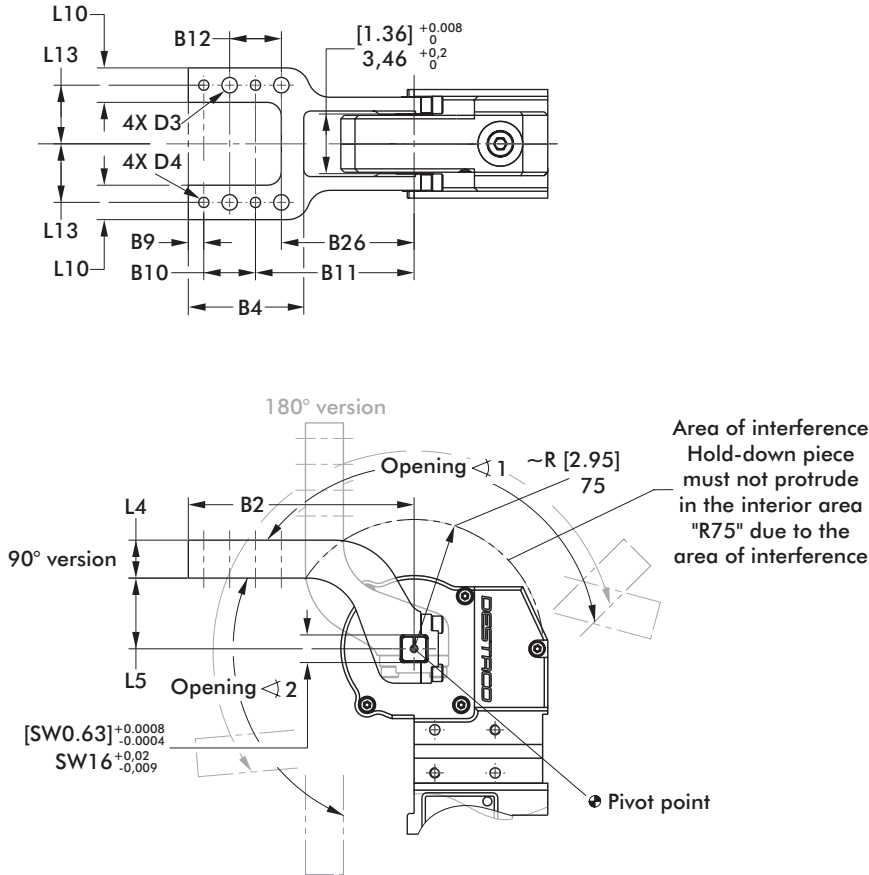
Arm Model No. Left 90° / Right 180°	Arm Model No. Right 90° / Left 180°	B2	B4	B9	B10	B11	B12	B26	L4	L5	$\varnothing$ D3	$\varnothing$ D4	L10	L13
8UL404-00-117	8UR404-00-117									0				
8UL404E-15-117	8UR404E-15-117	[4.61] 117	[1.77] 45	[0.28] 7	[0.79] 20	[3.54] 90	[0.79] 20	[3.23] 82	[0.87] 22	[0.59] 15	[0.28] 7		[0.63] 16	[0.91] 23
8UL404E-25-117	8UR404E-25-117									[0.98] 25				
8UL404E-45-107	8UR404E-45-107	[4.21] 107				[3.15] 80		[2.83] 72		[1.77] 45		[0.24] 6		
8UL404E-15-144	8UR404E-15-144	[5.67] 144	[2.83] 72			[4.13] 105		[3.23] 82	[1.10] 28	[0.59] 15			[0.79] 20	[1.46] 37
8UL404-41-131	8UR404-41-131	[5.16] 131	[2.64] 67	[0.35] 9	[1.18] 30	[3.62] 92	[1.18] 30	[3.03] 77	[0.87] 22	[1.61] 41	[0.35] 9			[1.34] 34

Dimensions = [in] mm

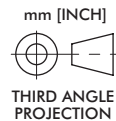
# 92W-1 H-ARMS (ALUMINUM)

Enclosed Electric Power Clamps | Dimensions | Technical Specifications

## H-Clamp Arms



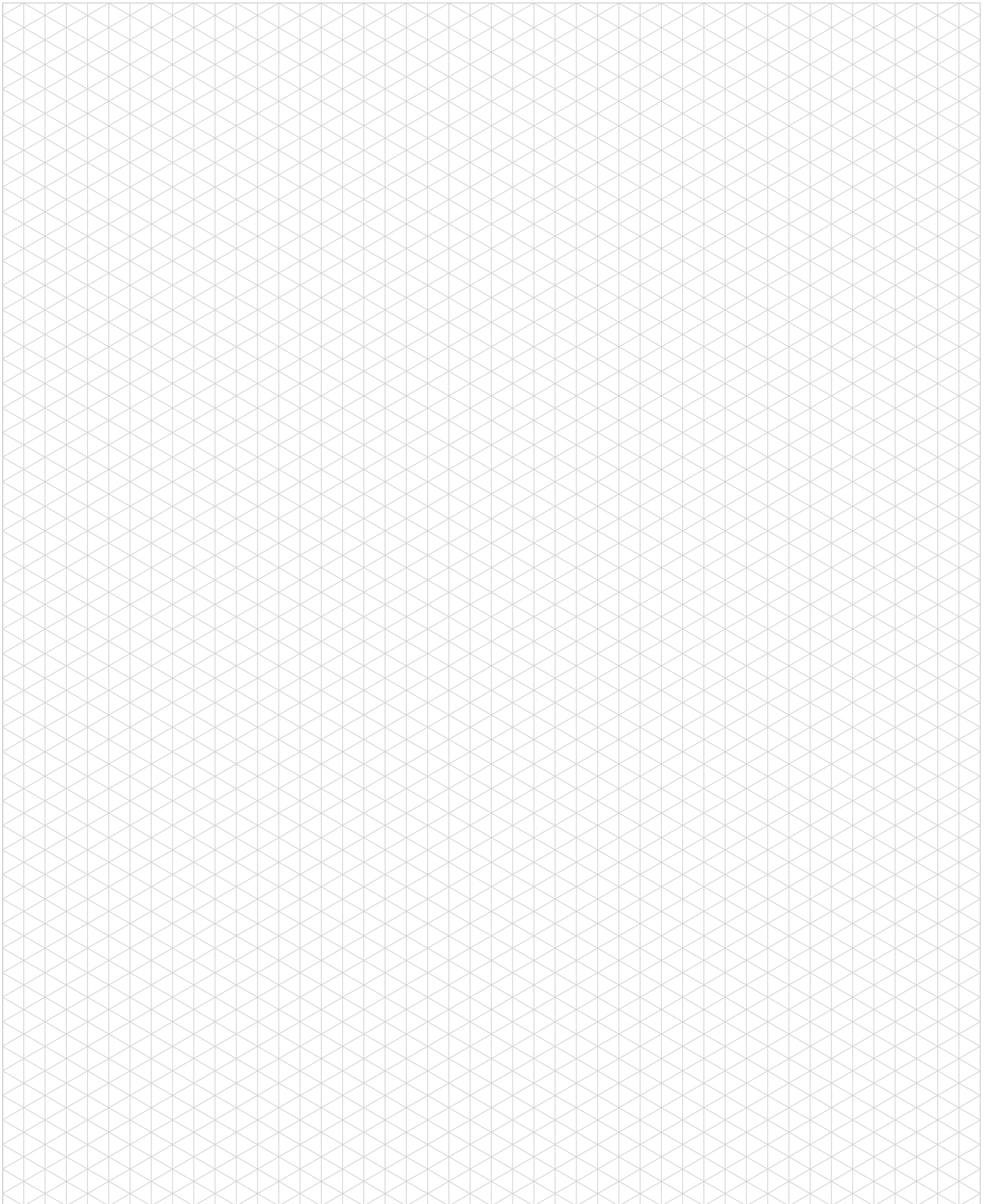
8UH404E-15-117  
8UH404E-15-144  
8UH404-41-131



Arm Model No.	Max. Opening Angle for 90° Version		Max. Opening Angle for 180° Version		Weight kg [lbs]
	∠ 1	∠ 2	∠ 1	∠ 2	
8UH404E-15-117			70°	105°	[0.57] 0,26
8UH404E-15-144	135°	90°			[1.01] 0,46
8UH404-41-131			105°	95°	[0.82] 0,37

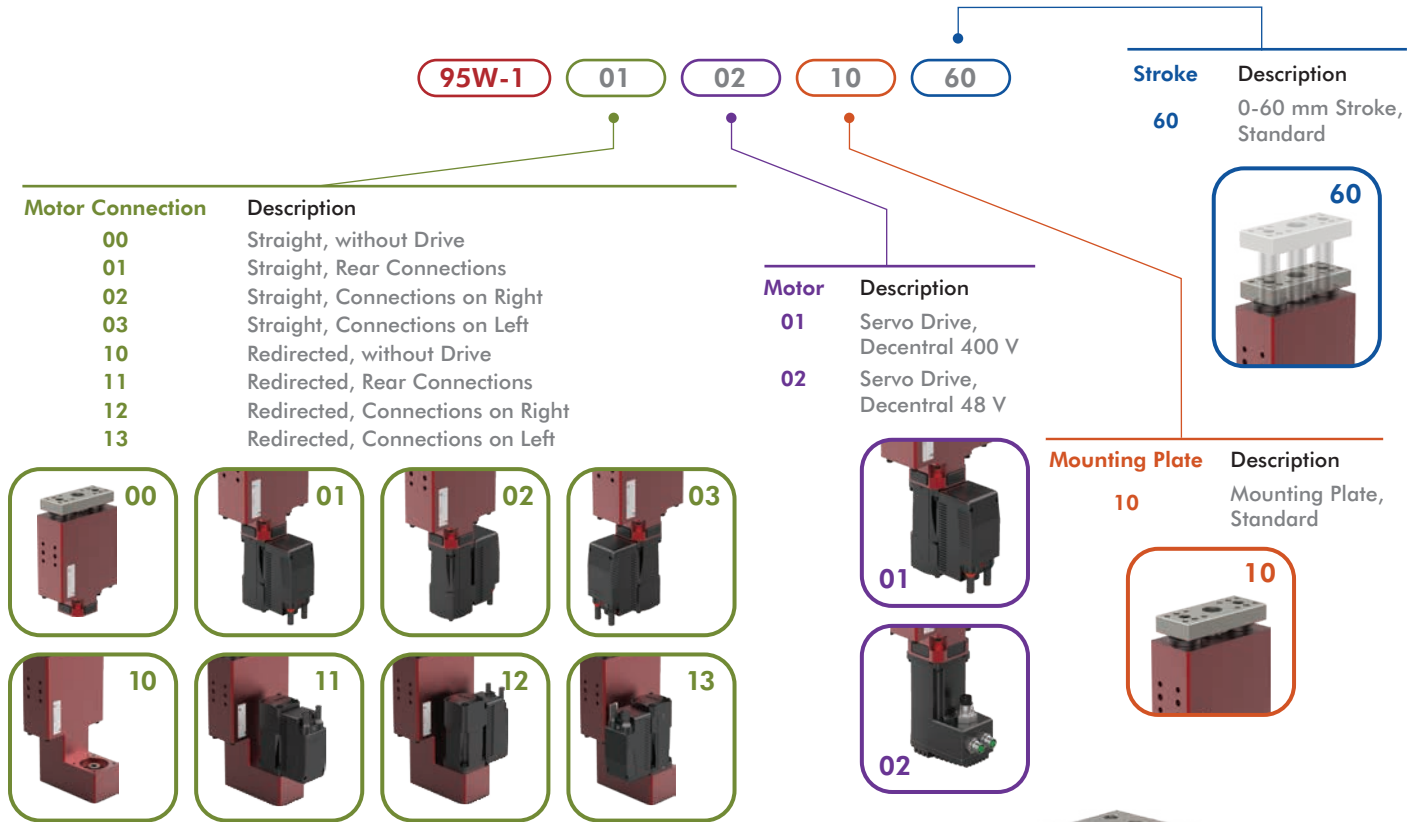
Arm Model No.	B2	B4	B9	B10 ±0.0008 ±0,02	B11 ±0.004 ±0,1	B12 ±0.008 ±0,2	B26	L4 ±0.004 ±0,1	L5	D3	D4 H7	L10	L13 ±0.004 ±0,1
8UH404E-15-117	[4.61] 117	[1.77] 45	[0.28] 7	[0.79] 20	[3.54] 90	[0.79] 20	[3.23] 82	[0.87] 22	[0.59] 15	[0.28] 7		[0.63] 16	[0.91] 23
8UH404E-15-144	[5.67] 144	[2.83] 72	[0.35] 9	[1.18] 30	[4.13] 105	[1.18] 30		[1.10] 28		[0.35] 9	[0.24] 6	[0.79] 20	[1.46] 37
8UH404-41-131	[5.16] 131	[2.64] 67			[3.62] 92		[3.03] 77	[0.87] 22	[1.61] 41				[1.34] 34

Dimensions = [in] mm



# 95W-1

## Electric Smart Guides/Lifters | How to Order

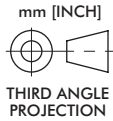


95W-111021060

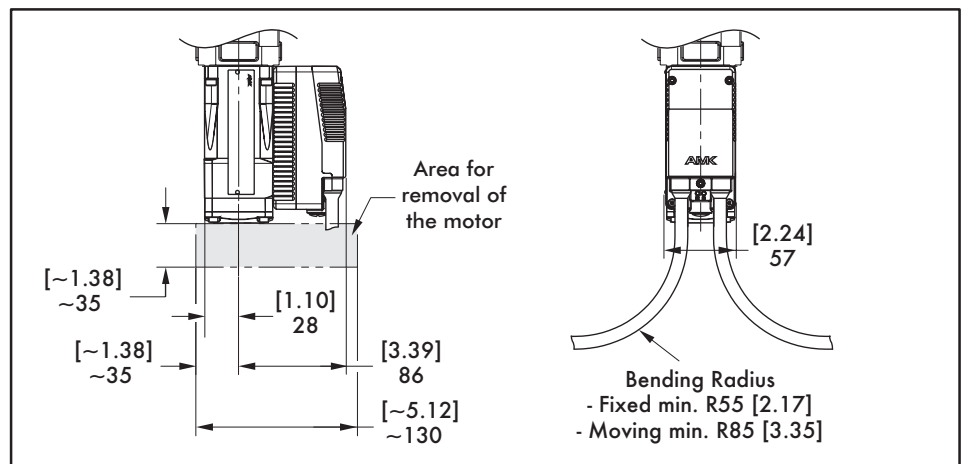
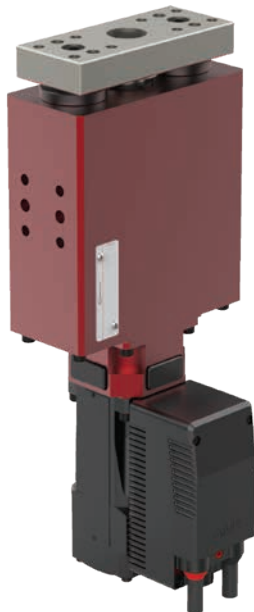
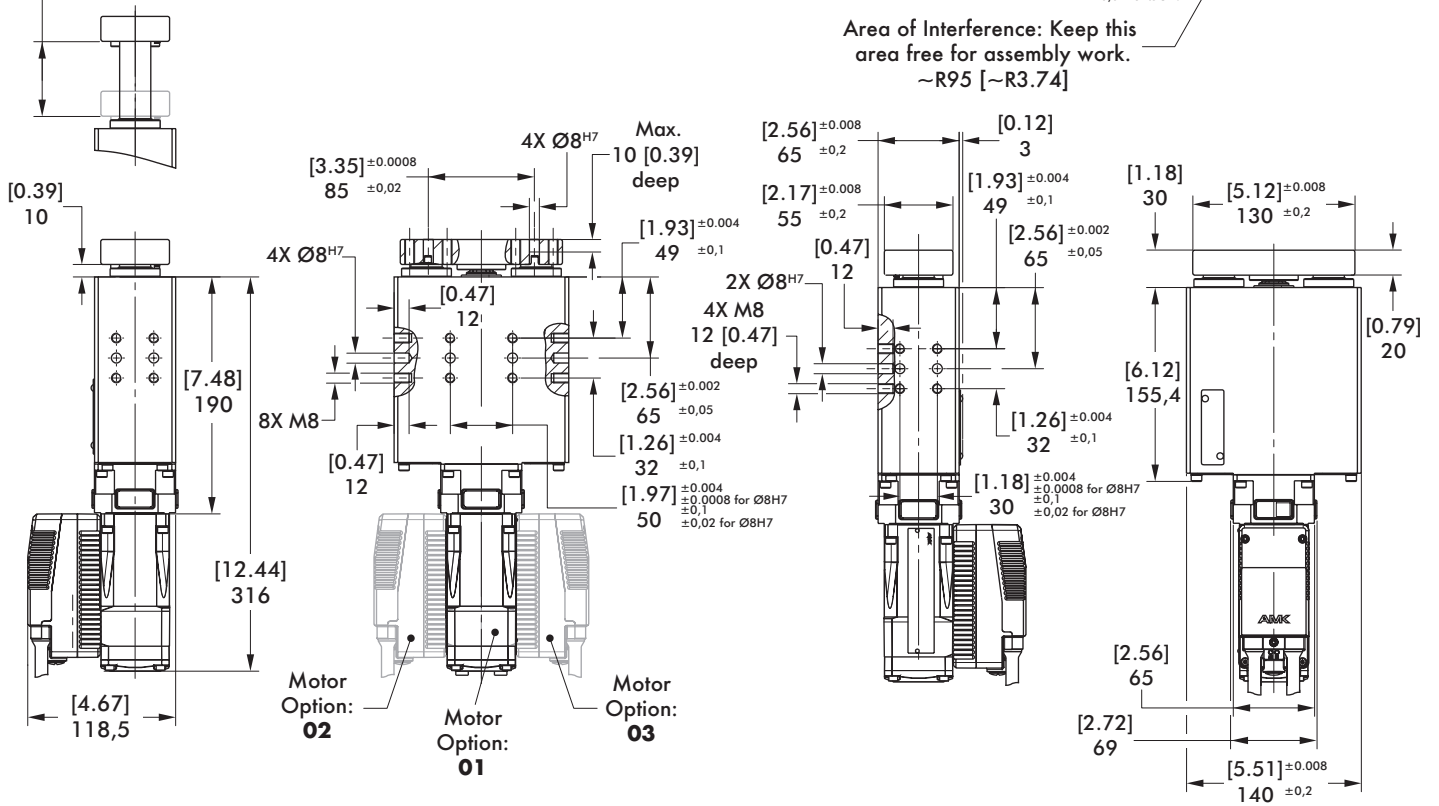
95W-101011060

# 95W-10.011060

## Electric Smart Guides/Lifters | Dimensions | Technical Specifications



mm [INCH]  
Max. Stroke  
= 60 [2.36]

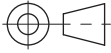


Base Model	Stroke mm [in]	Lifting Force N [lbf]	Holding Force N [lbf]	Speed Max. mm/s [in/s]	Weight Kg [lbs]
95W-10.011060	[0-2.36] 0-60	[225] 1000	[225] 1000	[2.36] 60	[16.31] 7,4

# 95W-10.021060

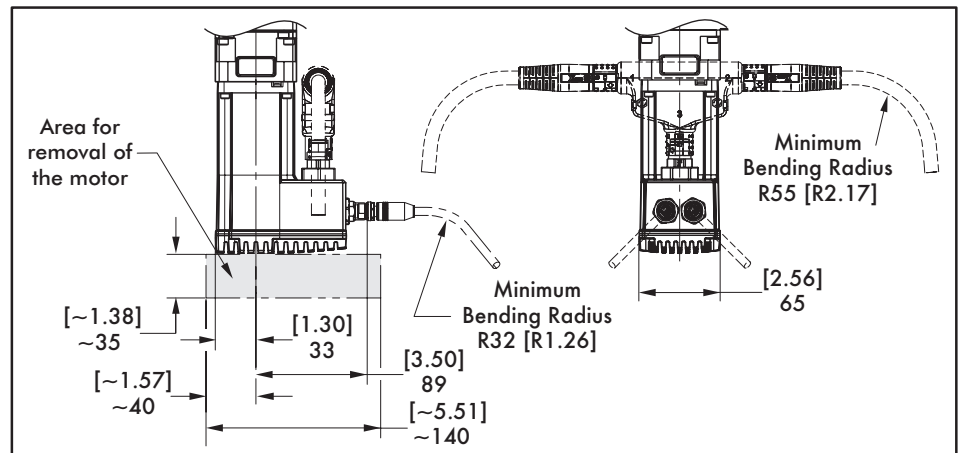
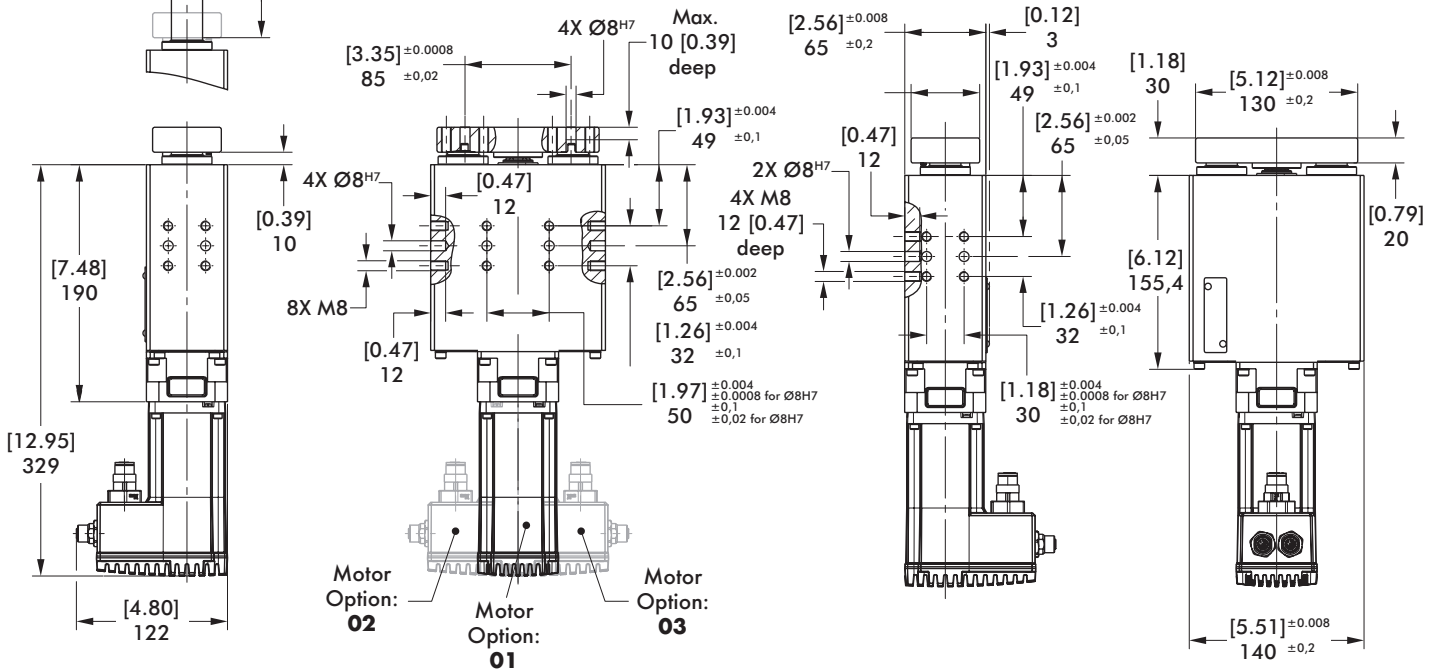
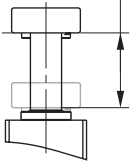
## Electric Smart Guides/Lifters | Dimensions | Technical Specifications

mm [INCH]



THIRD ANGLE PROJECTION

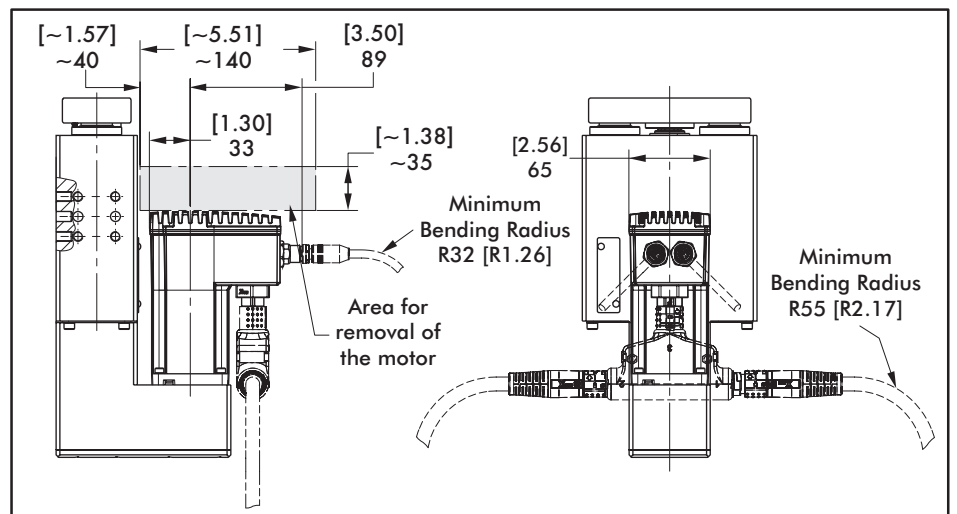
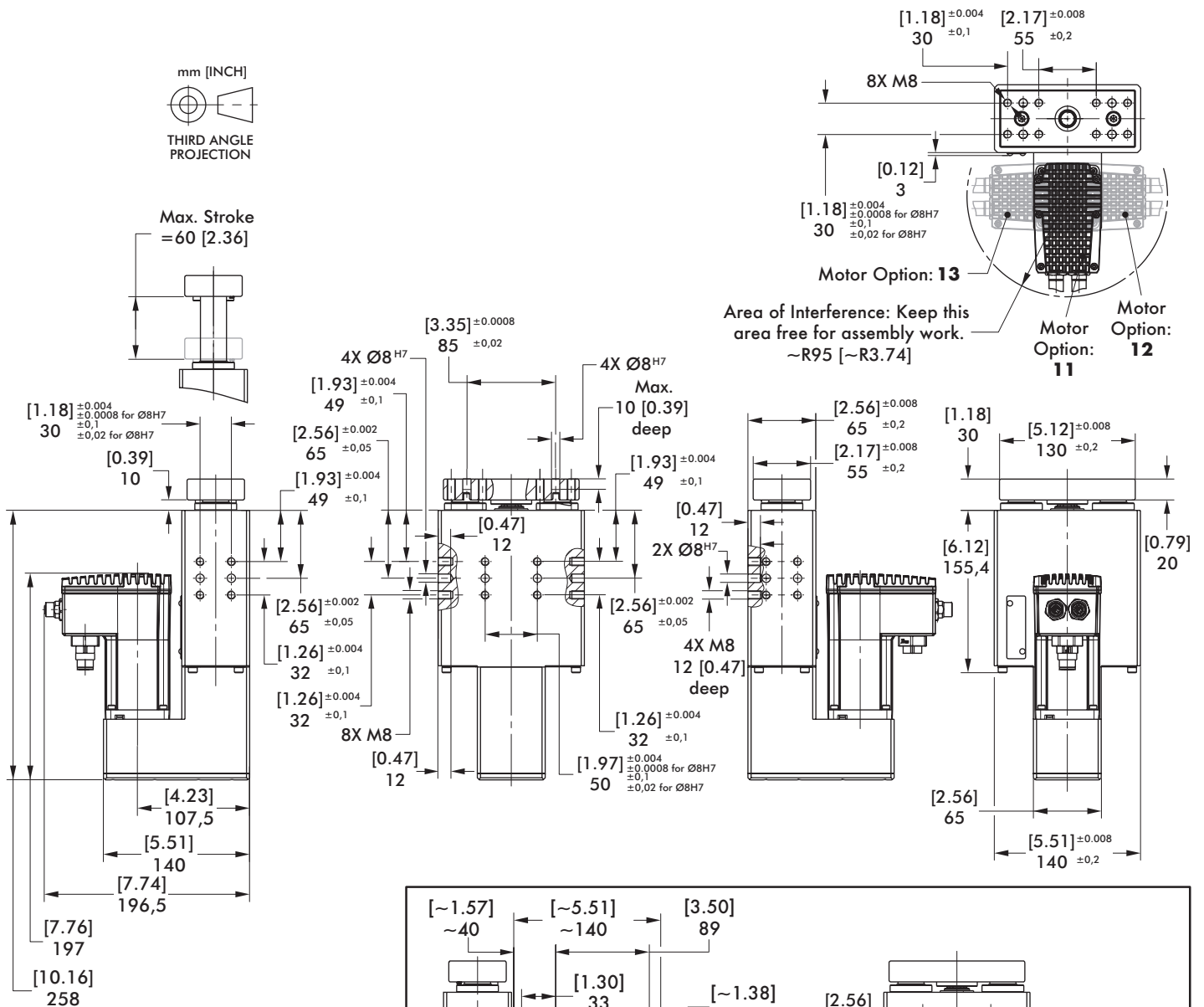
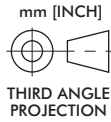
Max. Stroke  
=60 [2.36]



Base Model	Stroke mm [in]	Lifting Force N [lbf]	Holding Force N [lbf]	Speed Max. mm/s [in/s]	Weight Kg [lbs]
95W-10.021060	[0-2.36] 0-60	[225] 1000	[225] 1000	[2.36] 60	[16.09] 7,3

# 95W-11.021060

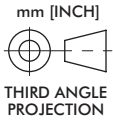
## Electric Smart Guides/Lifters | Dimensions | Technical Specifications



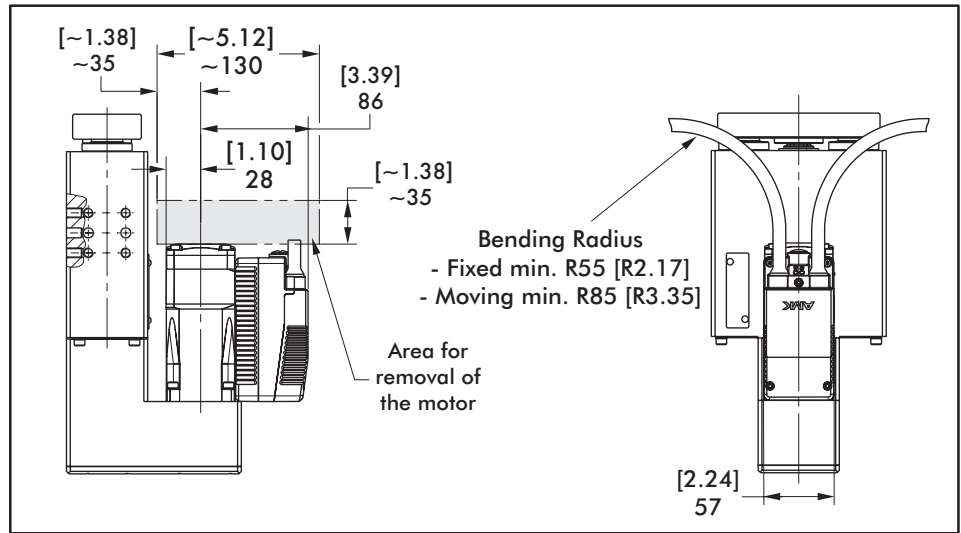
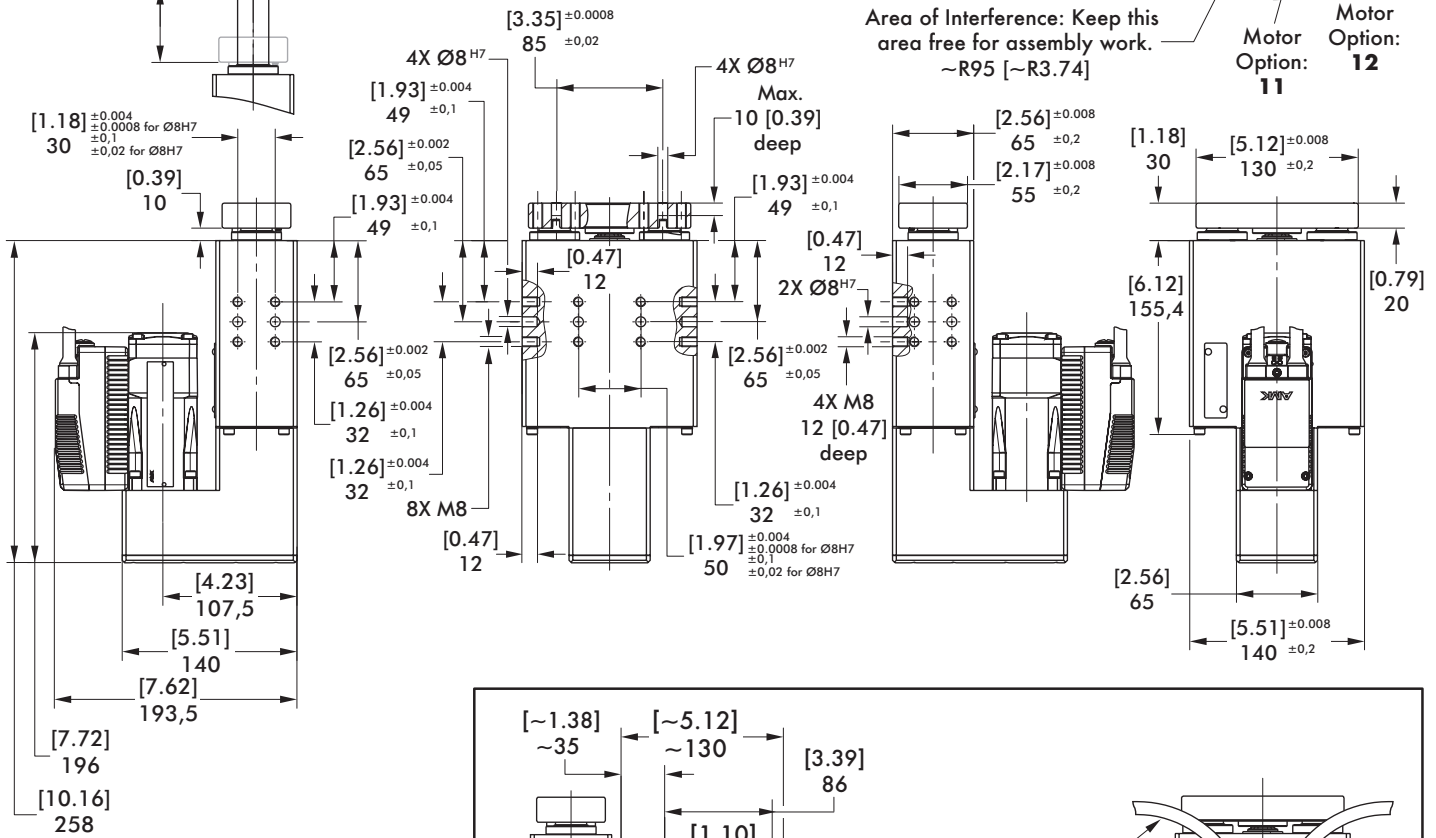
Base Model	Stroke mm [in]	Lifting Force N [lbf]	Holding Force N [lbf]	Speed Max. mm/s [in/s]	Weight Kg [lbs]
95W-11.021060	[0-2.36] 0-60	[225] 1000	[225] 1000	[2.36] 60	[19.62] 8,9

# 95W-11.011060

## Electric Smart Guides/Lifters | Dimensions | Technical Specifications



Max. Stroke  
= 60 [2.36]



Base Model	Stroke mm [in]	Lifting Force N [lbf]	Holding Force N [lbf]	Speed Max. mm/s [in/s]	Weight Kg [lbs]
95W-11.011060	[0-2.36] 0-60	[225] 1000	[225] 1000	[2.36] 60	[20.72] 9,4





# 96W-1

Electric Pin Package | Smart Pin Package | How to Order

96W-1 01 02 A4 60

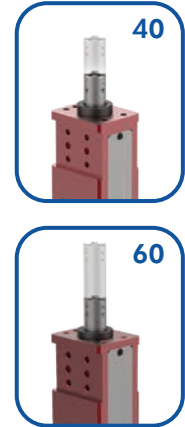
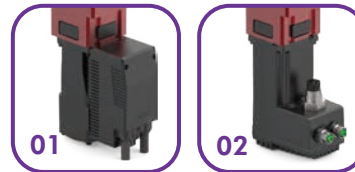
Stroke	Description
40*	0-40 mm Stroke
60	0-60 mm Stroke

\*Straight motor option only.

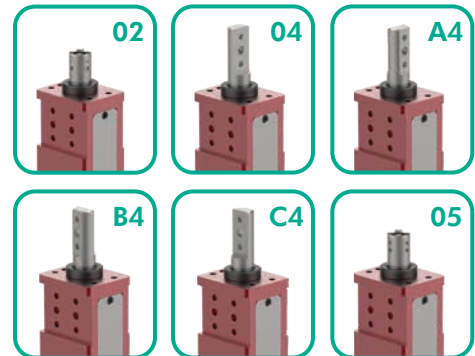
Motor Connection	Description
00	Straight, without Drive
01	Straight, Rear Connections
02	Straight, Connections on Right
03	Straight, Connections on Left
10	Redirected, without Drive
11	Redirected, Rear Connections
12	Redirected, Connections on Right
13	Redirected, Connections on Left



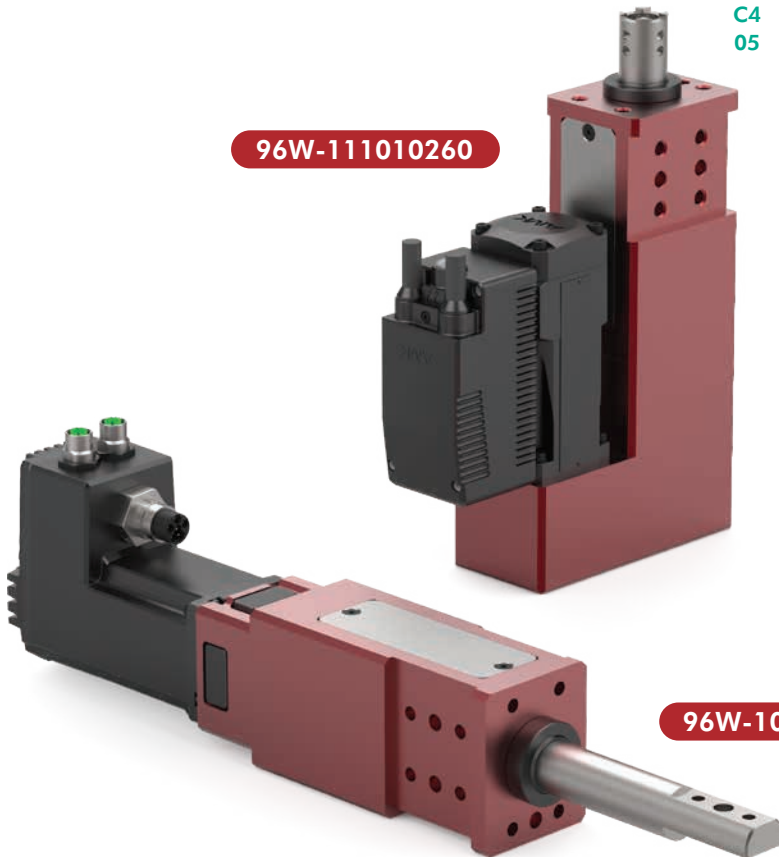
Motor	Description
01	Servo Drive, Decentral 400 V
02	Servo Drive, Decentral 48 V



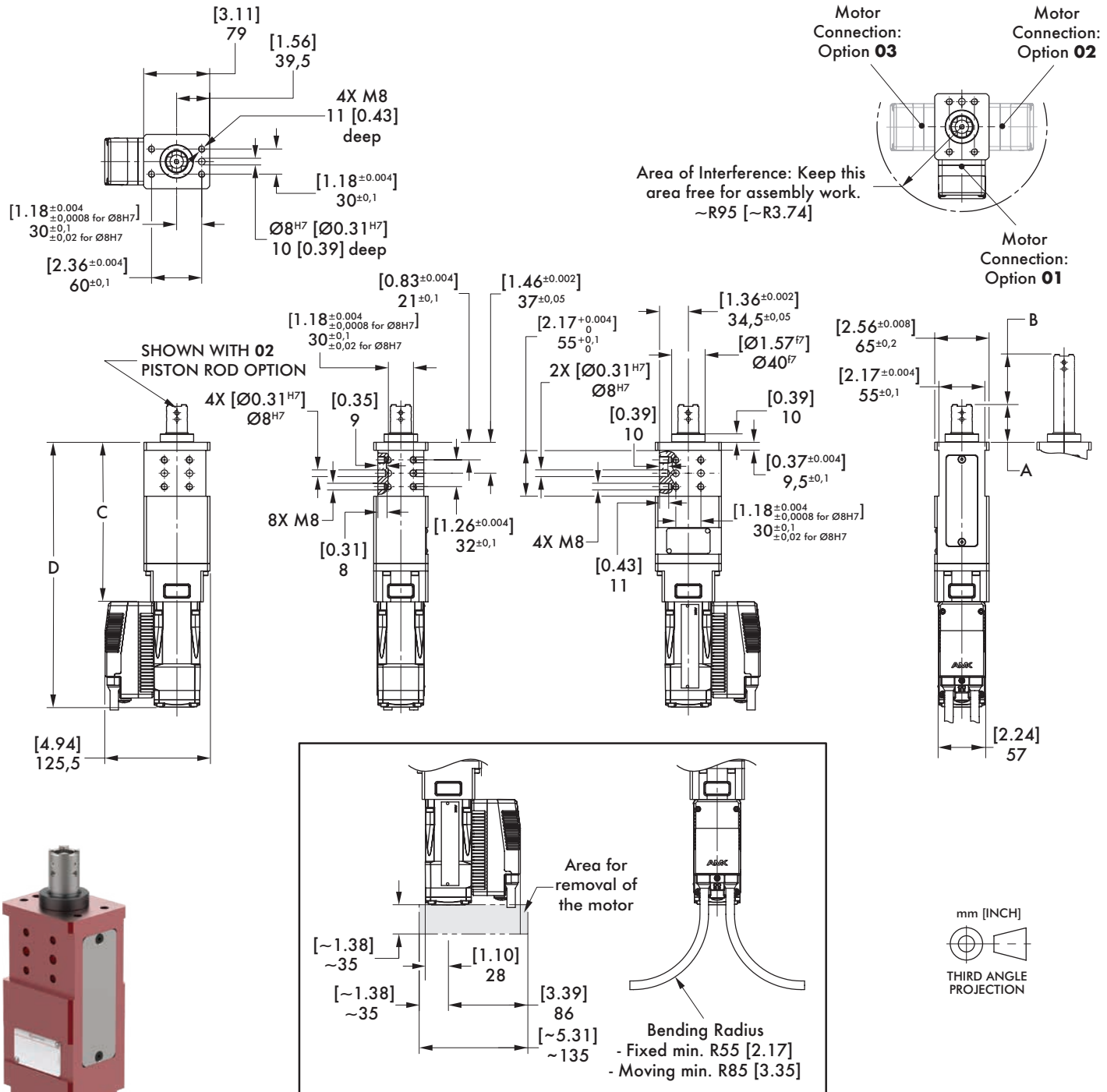
Piston Rod	Description
02*	Ø16 mm Cross Groove (*with M6 Threaded Inside Hole for Redirected Motor Connections 10, 11, 12, 13 see page 20)
04	NAAMS Standard
A4	NAAMS Standard Rotated 180°
B4	NAAMS Standard Rotated 90°
C4	NAAMS Standard Rotated 270°
05	Ø10 mm Inside Hole, Cross Groove



96W-111010260



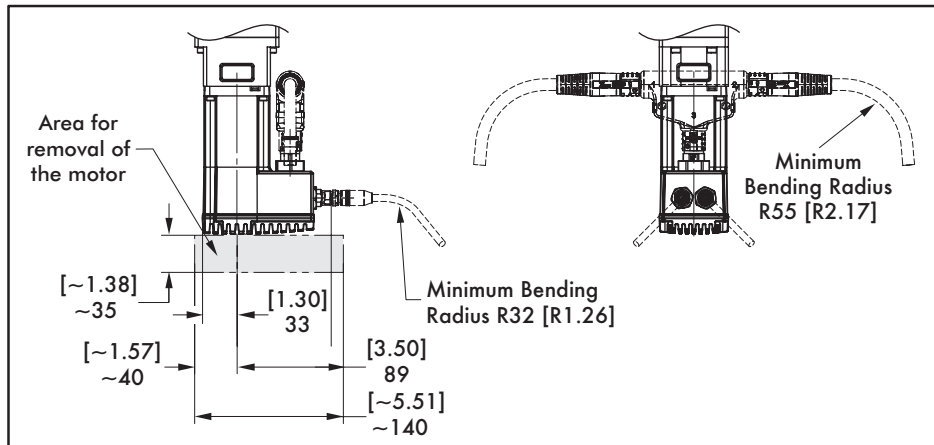
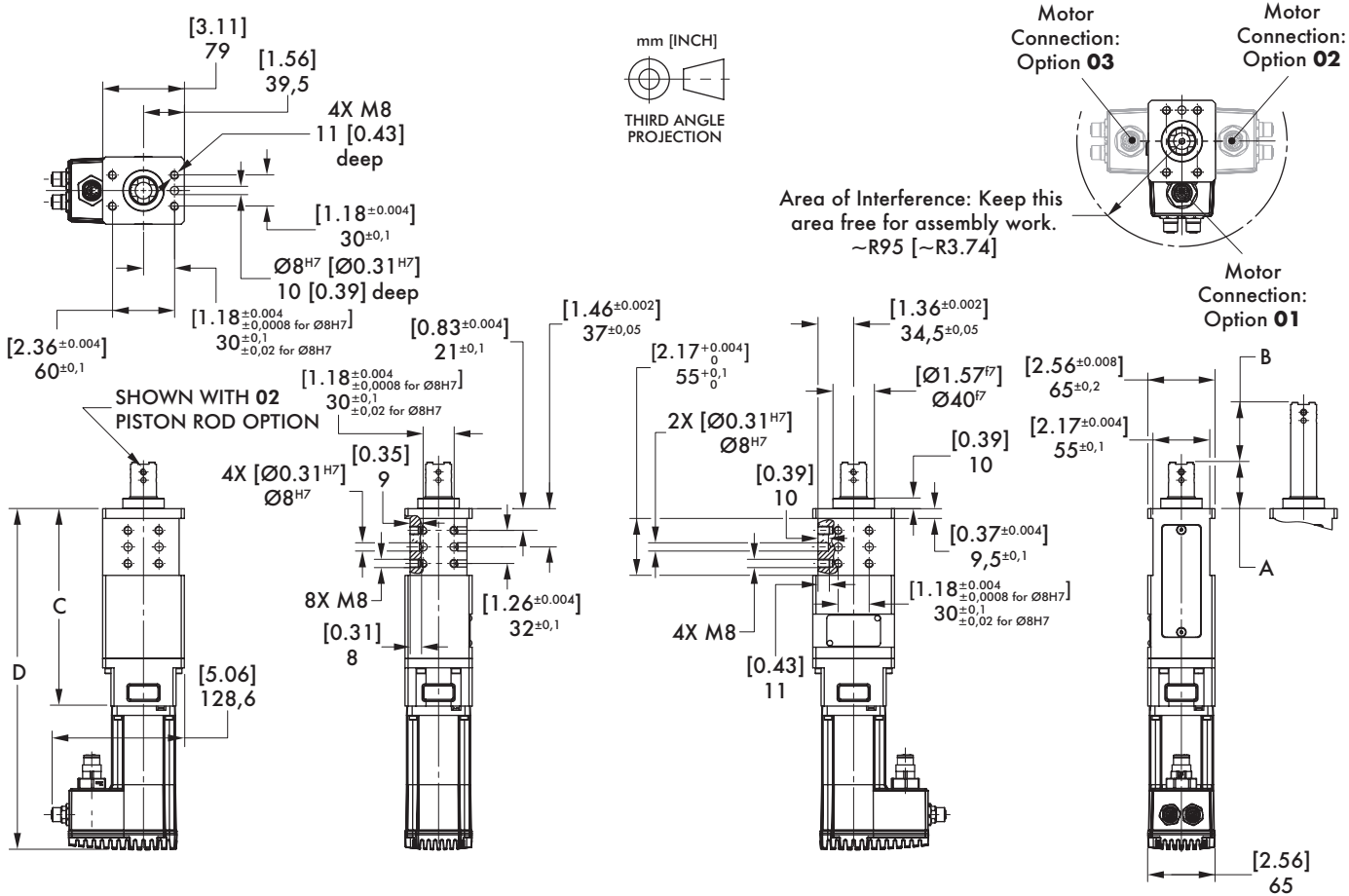
96W-10102A460



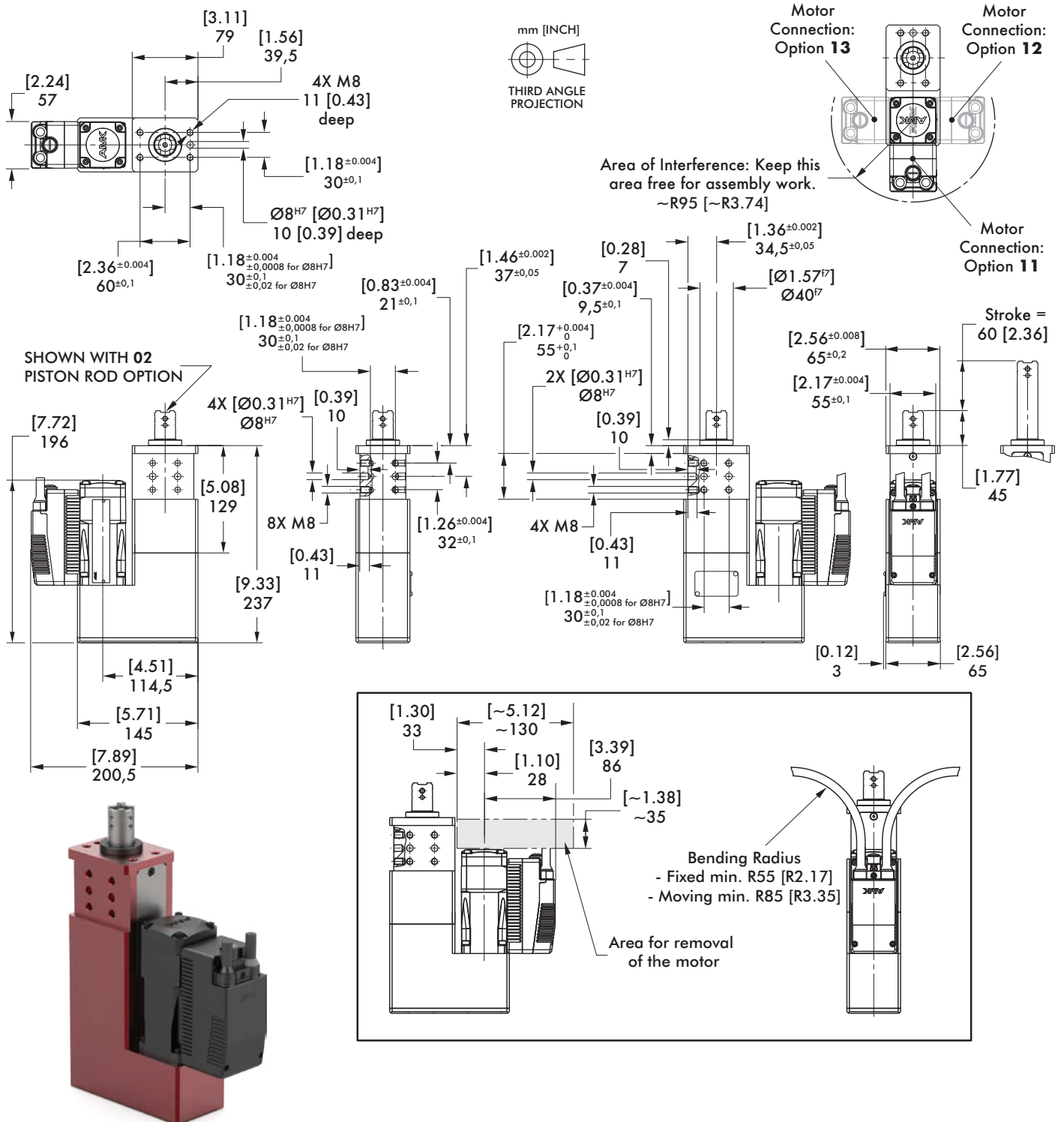
Base Model	Stroke B mm [in]	Thrust Force N [lbf]	Retraction Force N [lbf]	Speed Max. mm/s [in/s]	Weight Kg [lbs]	A mm [in]	C mm [in]	D mm [in]
96W-10.010240 96W-10.010540	[0-1.57] 0-40	[225] 1000	[225] 1000	[2.36] 60	[9.48] 4,3	[1.77] 45	[6.73] 171	[11.69] 297
96W-10.01.440						[2.76] 70		
96W-10.010260 96W-10.010560	[0-2.36] 0-60	[225] 1000	[225] 1000	[2.36] 60	[10.14] 4,6	[1.77] 45	[7.52] 191	[12.48] 317
96W-10.01.460						[2.76] 70		

# 96W-10.02...0

Electric Pin Package | Smart Pin Package | Dimensions | Technical Specifications



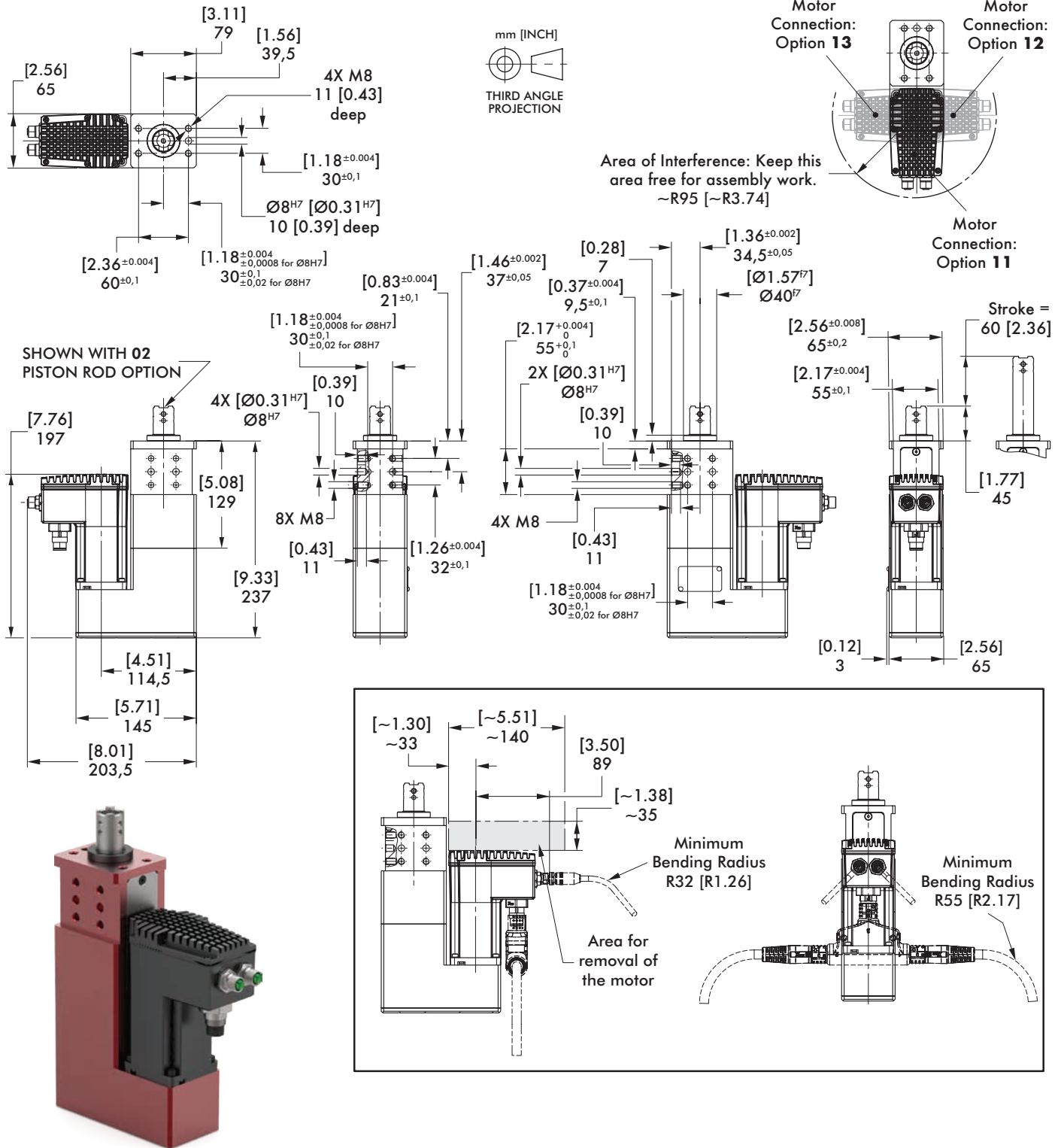
Base Model	Stroke B mm [in]	Thrust Force N [lbf]	Retraction Force N [lbf]	Speed Max. mm/s [in/s]	Weight Kg [lbs]	A mm [in]	C mm [in]	D mm [in]
96W-10.020240 96W-10.020540	[0-1.57] 0-40	[225] 1000	[225] 1000	[2.36] 60	[8.82] 4,0	[1.77] 45	[6.73] 171	[12.20] 310
96W-10.02.440						[2.76] 70		
96W-10.020260 96W-10.020560	[0-2.36] 0-60	[225] 1000	[225] 1000	[2.36] 60	[9.48] 4,3	[1.77] 45	[7.52] 191	[12.99] 330
96W-10.02.460						[2.76] 70		



Base Model	Stroke mm [in]	Thrust Force N [lbf]	Retraction Force N [lbf]	Speed Max. mm/s [in/s]	Weight Kg [lbs]
96W-11.01..60	[0-2.36] 0-60	[225] 1000	[225] 1000	[2.36] 60	[14,33] 6,5

# 96W-11.02..60

Electric Pin Package | Smart Pin Package | Dimensions | Technical Specifications



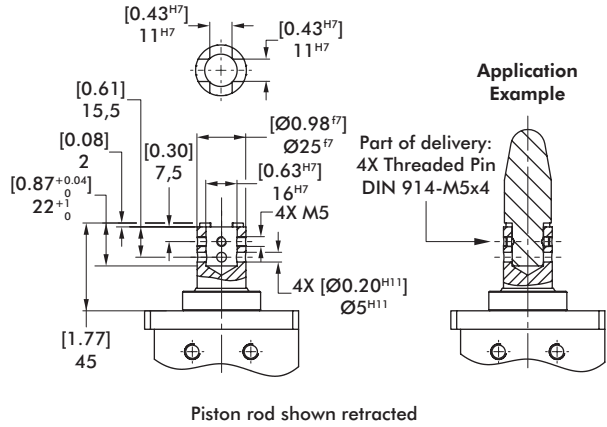
Base Model	Stroke mm [in]	Thrust Force N [lbf]	Retraction Force N [lbf]	Speed Max. mm/s [in/s]	Weight Kg [lbs]
96W-11.02..60	[0-2.36] 0-60	[225] 1000	[225] 1000	[2.36] 60	[13.01] 5,9

# 96W-1 PISTON RODS

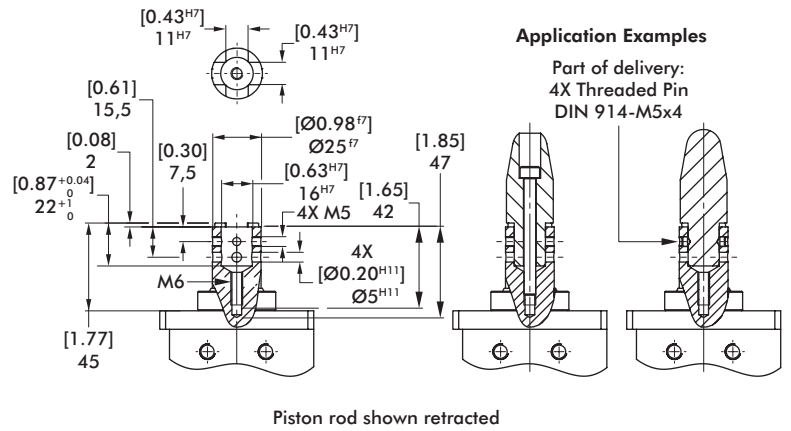
Electric Pin Package | Smart Pin Package | Dimensions

## 02 Ø16 mm, Cross Groove

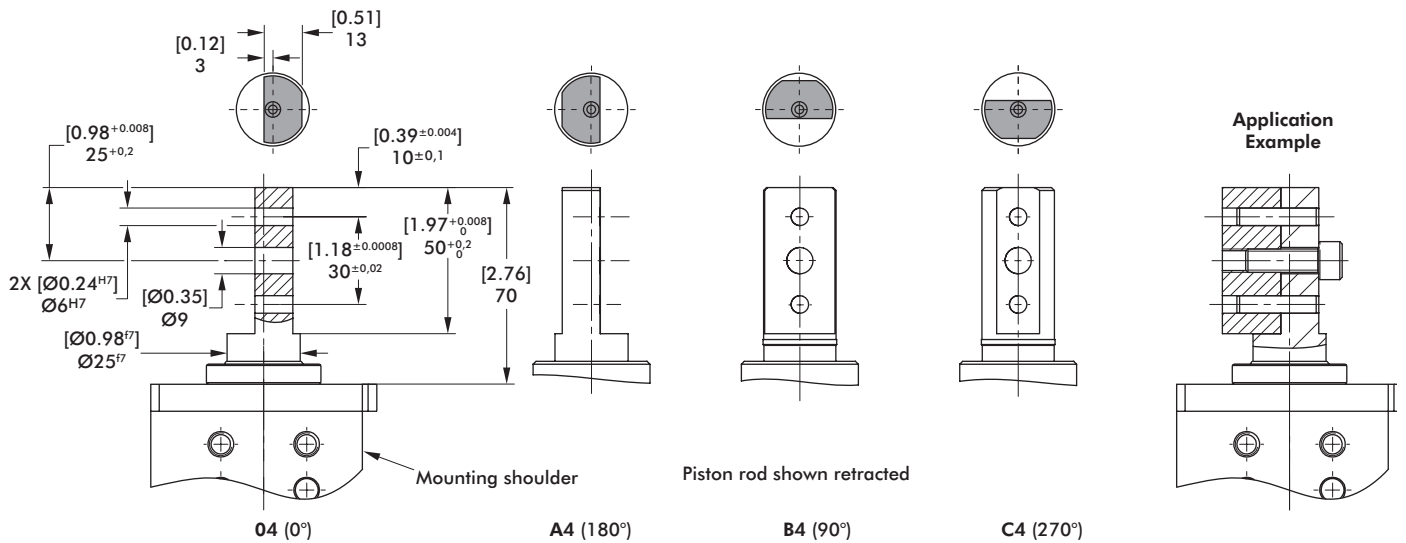
for Straight Motor Option 00, 01, 02 or 03 only



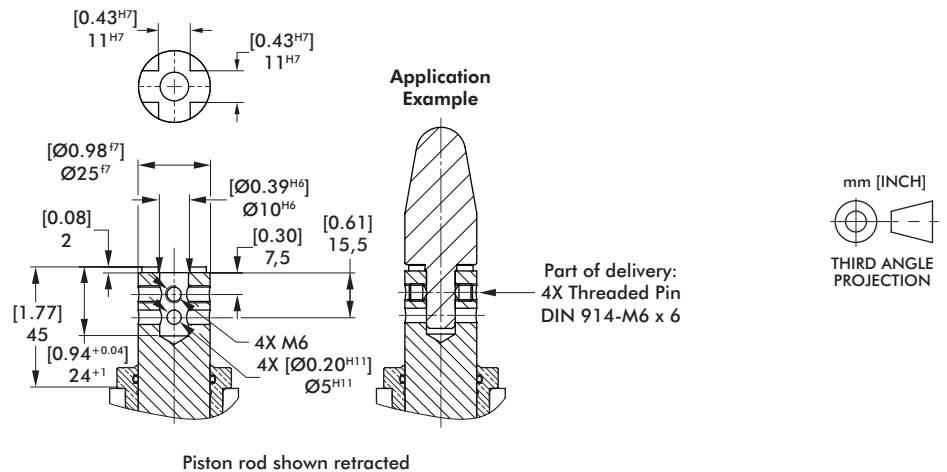
with M6 Threaded Inside Hole for Redirected Motor Option 10, 11, 12 or 13 only



## 04, A4, B4, C4 NAAMS Standard



## 05 Ø10 mm Inside Hole, Cross Groove



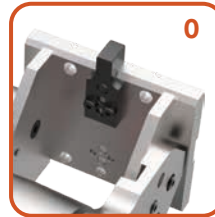
# 98W03-XXX

## Electric Pivot Unit | Ordering Information

98W03 - 210 - C - 0 - 00 - 0

Motor	Drive Motor w/Brake
210	SEW 400 V for MOVIPRO
220	HEIDRIVE Servo Drive, Decentral 48 V
260	AMK Decentral 400 V
270	LENZE 400 V
310	SEW 400 V for MOVIMOT

Hard Stop	Description
0	Standard Stop

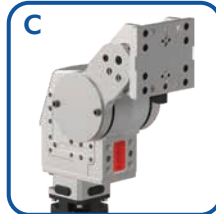
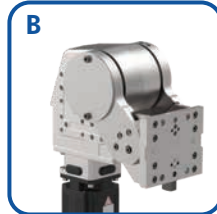
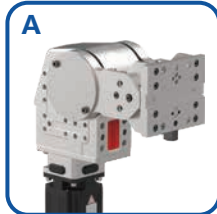


### Motor Connections

0 Facing Back

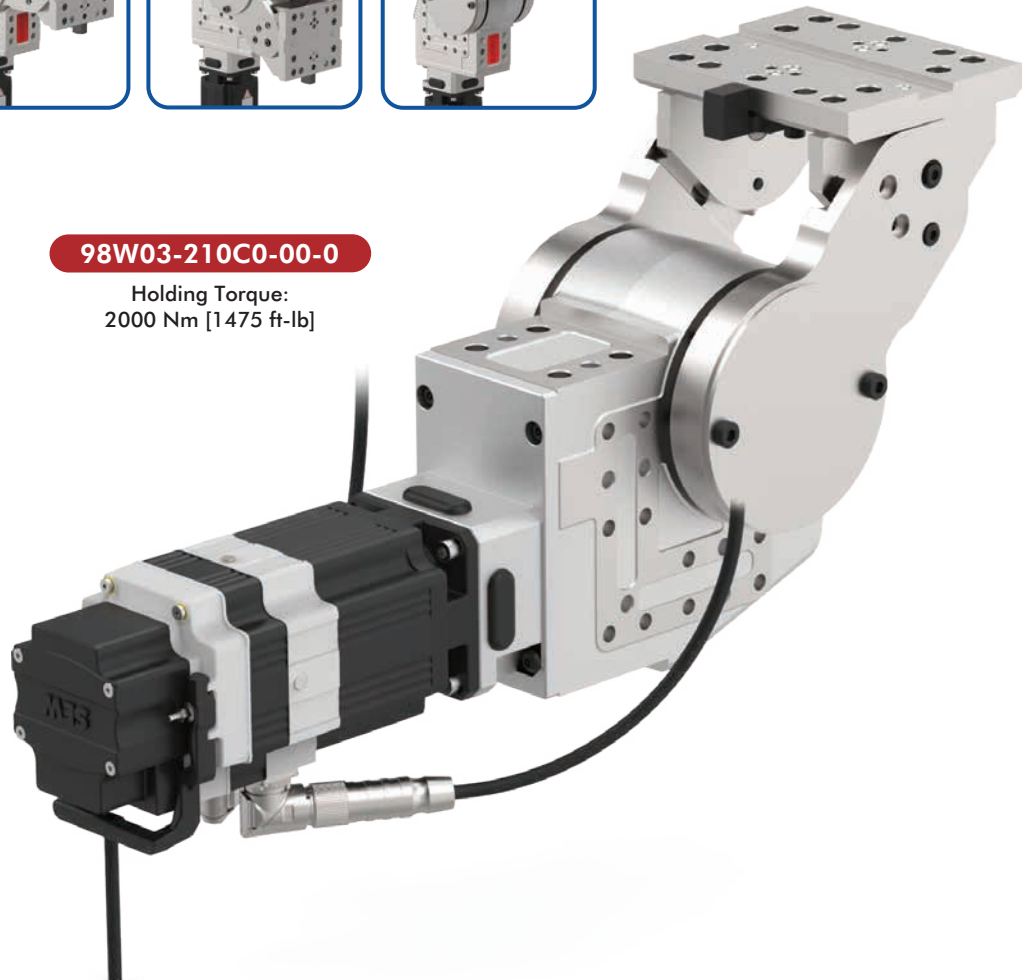


Swivel Arm	Description
A	Center of Pivot Point
B	Below Pivot Point
C	Above Pivot Point



98W03-210C0-00-0

Holding Torque:  
2000 Nm [1475 ft-lb]

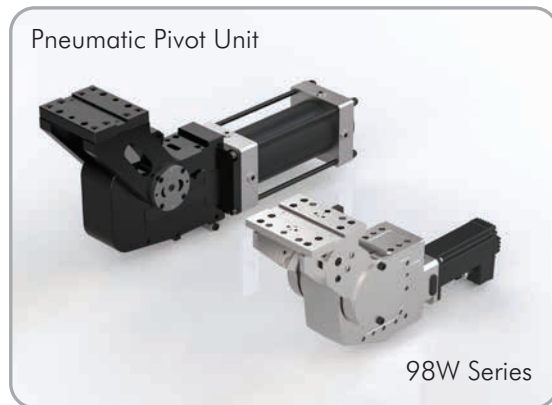




# 98W03-XXX

## Electric Pivot Unit | Features and Benefits

### Compact size and lightweight design



The 98W series electric pivot unit can share the same mounting pattern as the pneumatic pivot units, while providing greater energy savings with reduced size and weight.

### One electric pivot unit replaces four sizes of pneumatic pivot units



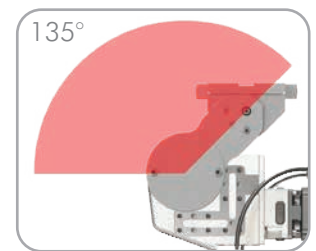
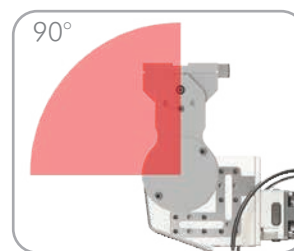
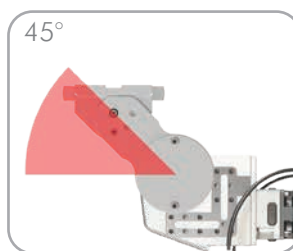
98W03  
Electric Pivot Unit

Ø100 Ø125 Ø160 Ø200  
Pneumatic Pivot Units

### Easily adjustable saddle arm and mount

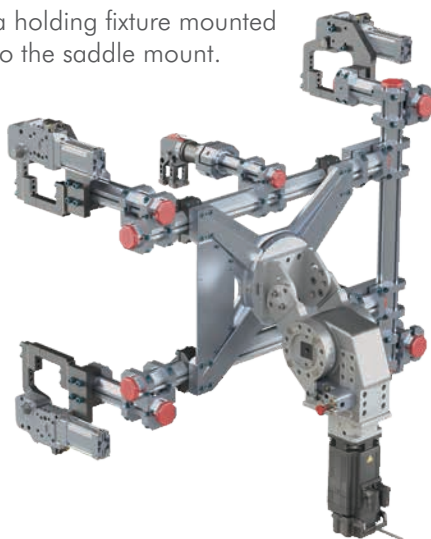
The saddle arm of the electric pivot unit can be adjusted into three different starting positions. Each starting position allows the saddle arm to be pivoted from 135° up to 210°.

With out the saddle arm, the pivot unit can be used as a rotate with 360° rotation.

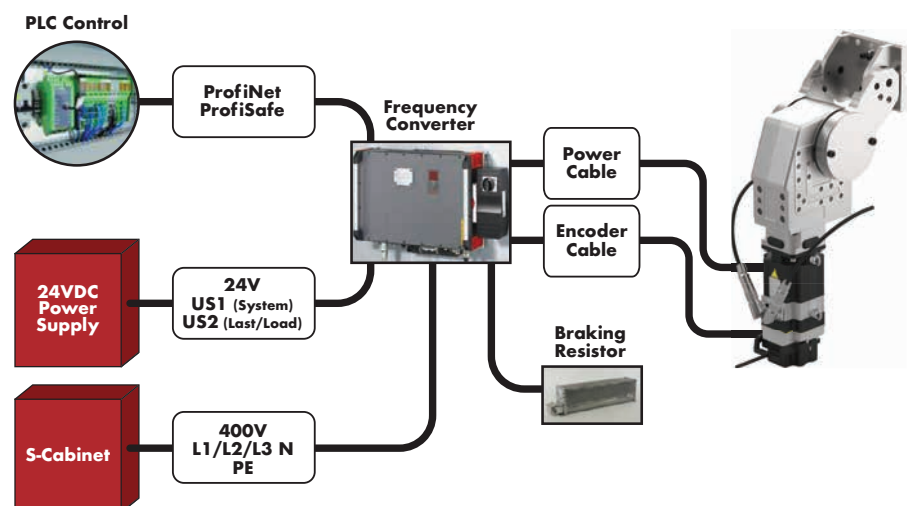


### Application Example

98W Series shown with a holding fixture mounted to the saddle mount.

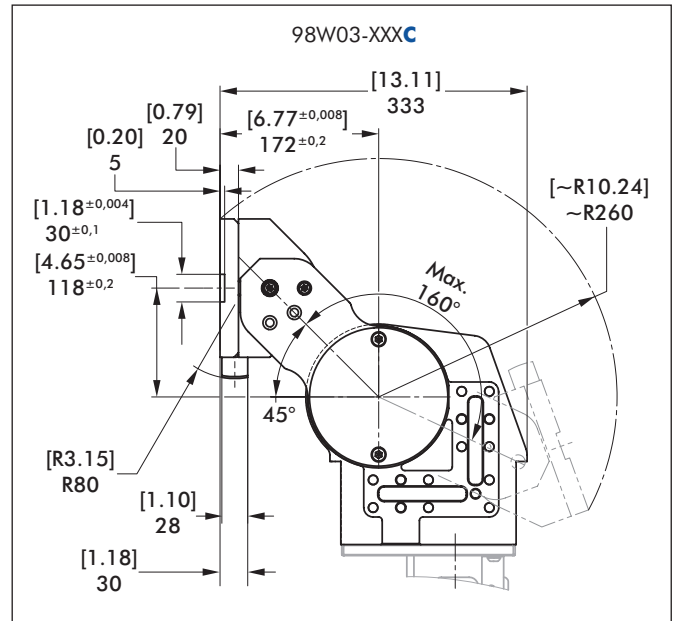
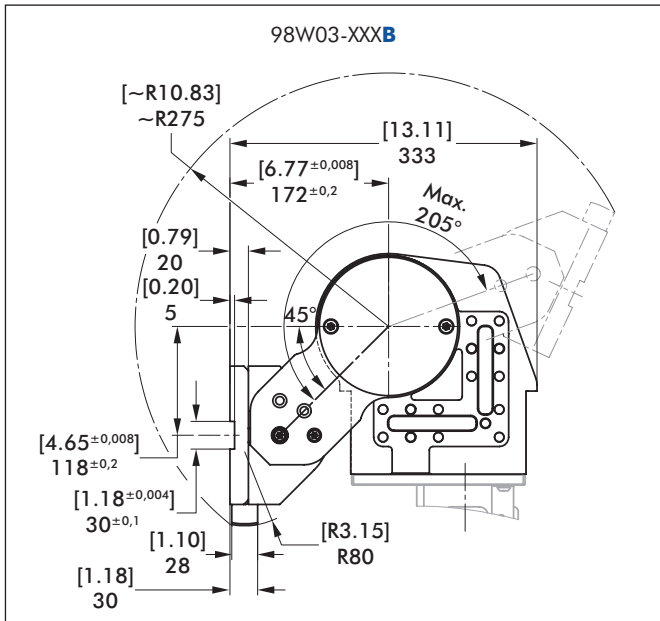
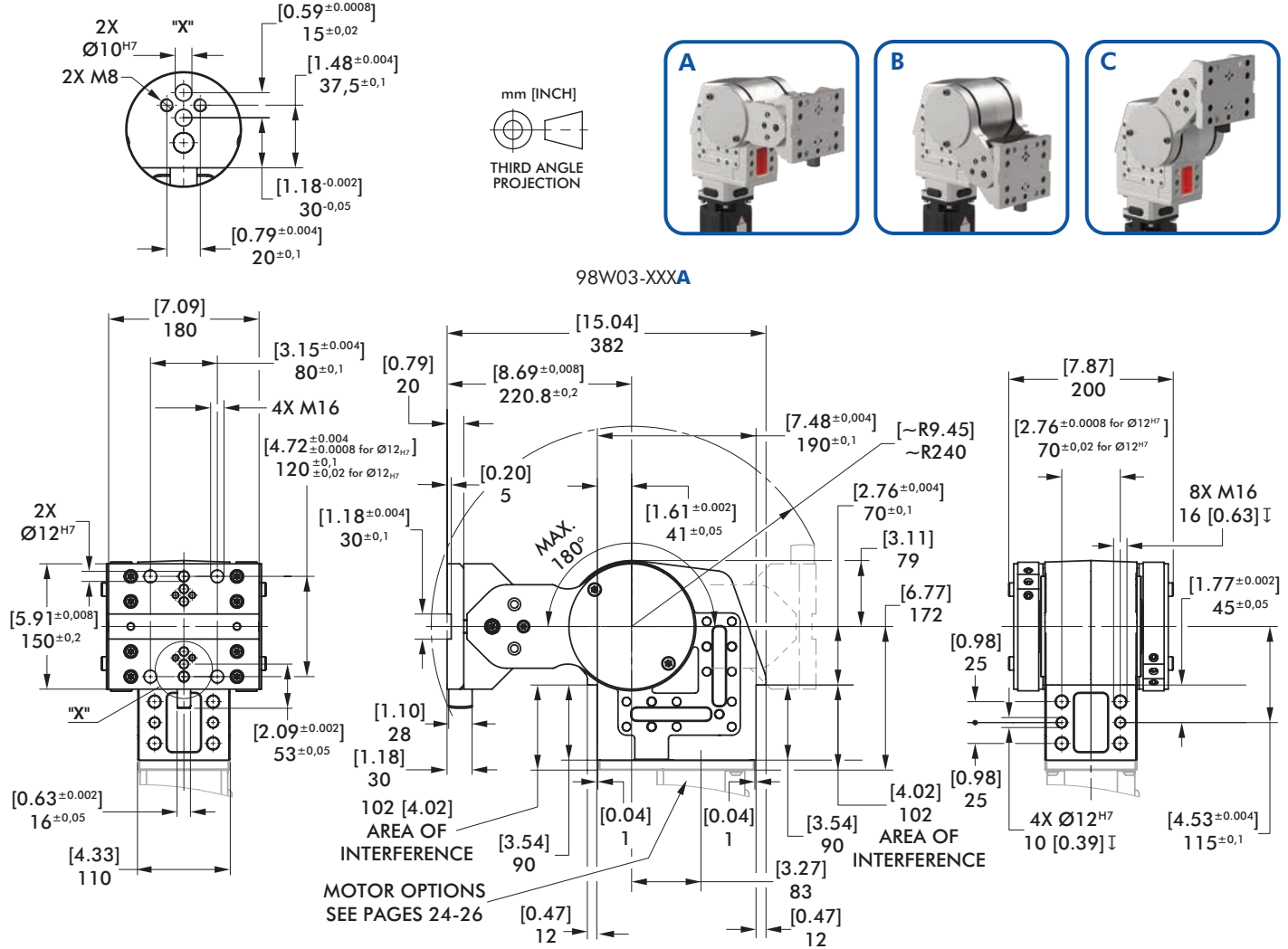


### Operating Principle



# 98W03-XXX

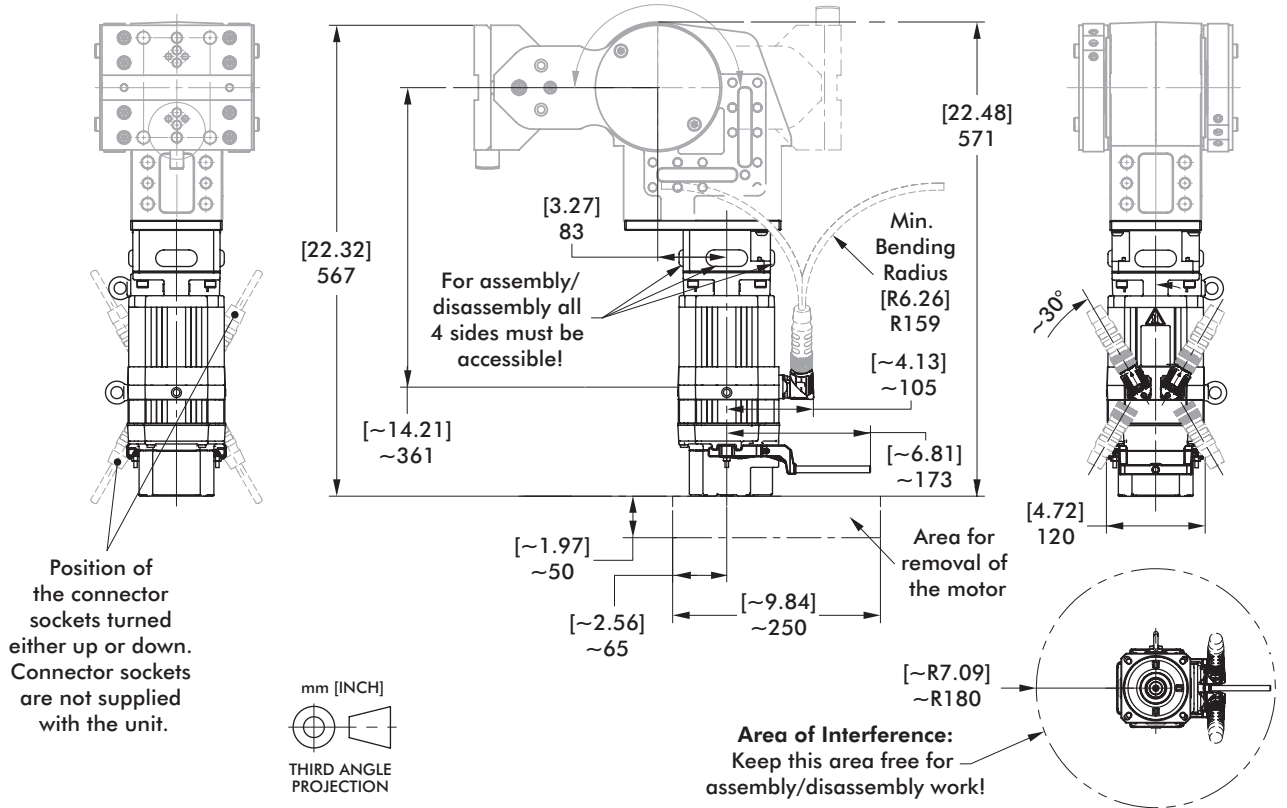
## Electric Pivot Unit | Basic Unit Dimensions



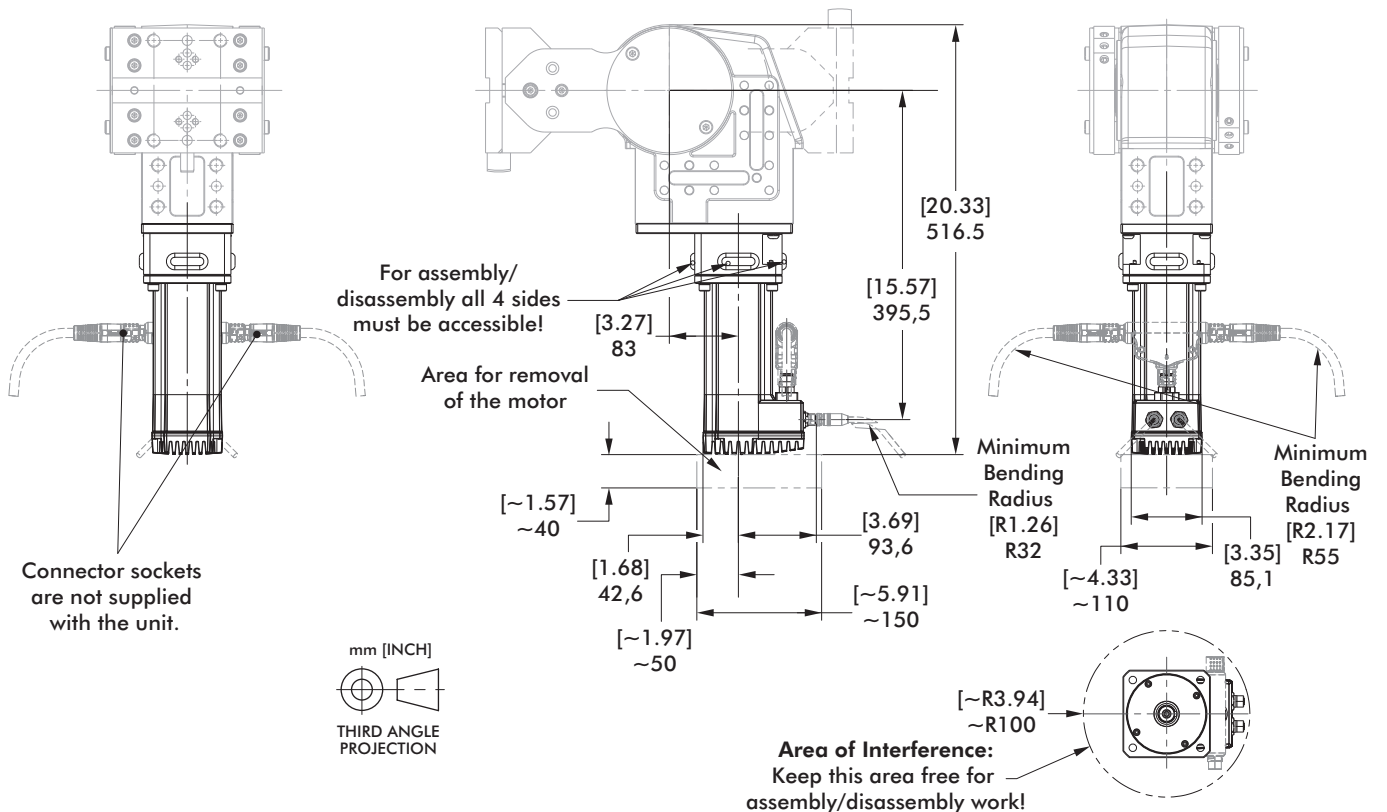
# 98W03-XXX MOTOR OPTIONS

Electric Pivot Unit | Motor Dimensions

## 98W03-210 SEW 400 V for MOVIPRO



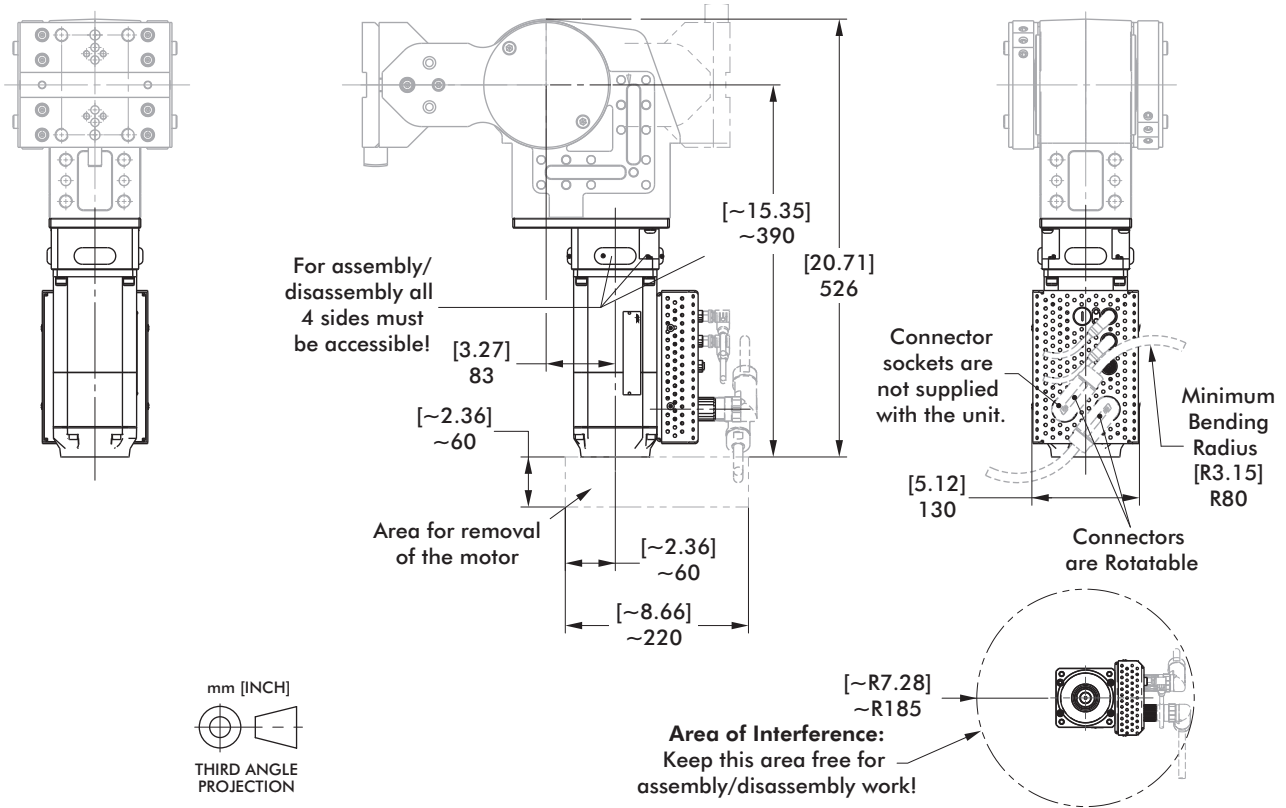
## 98W03-220 HEIDRIVE Servo Drive, Decentral 48 V



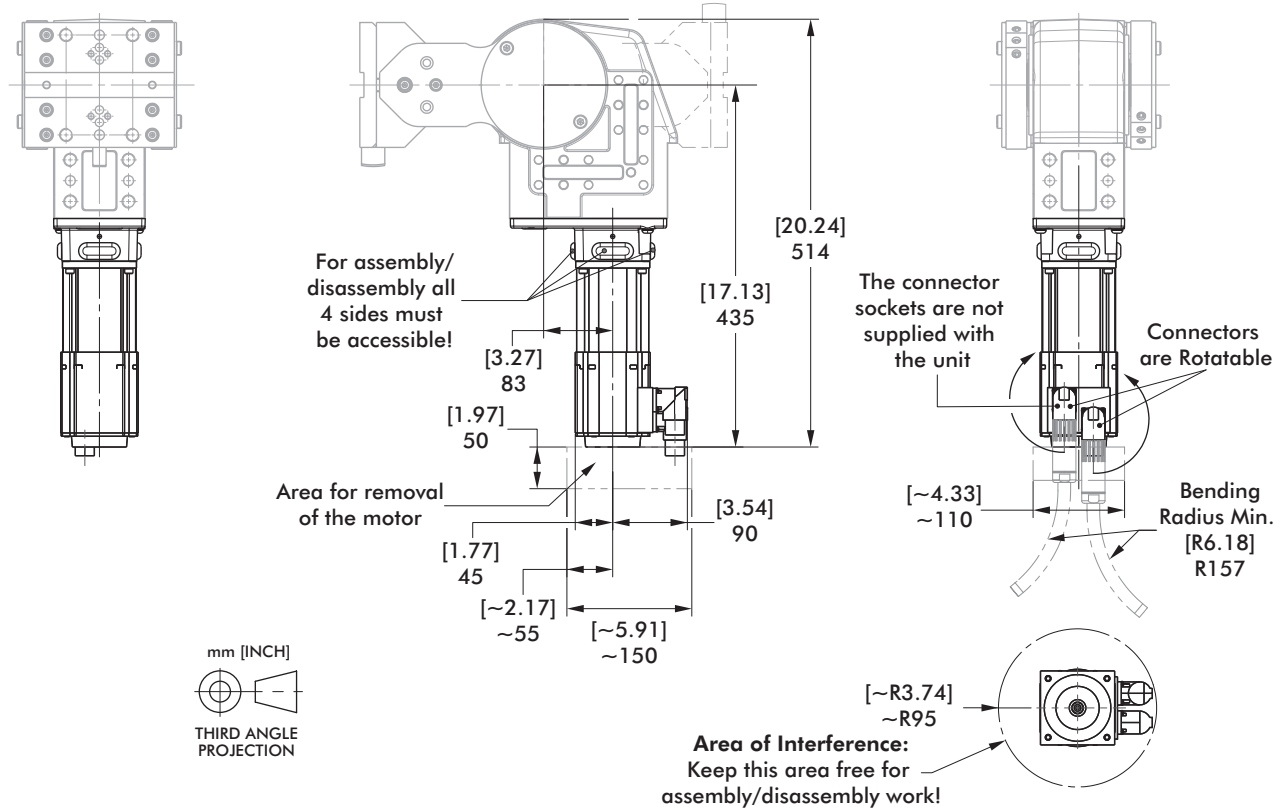
# 98W03-XXX MOTOR OPTIONS

## Electric Pivot Unit | Motor Dimensions

### 98W03-260 AMK Decentral 400 V



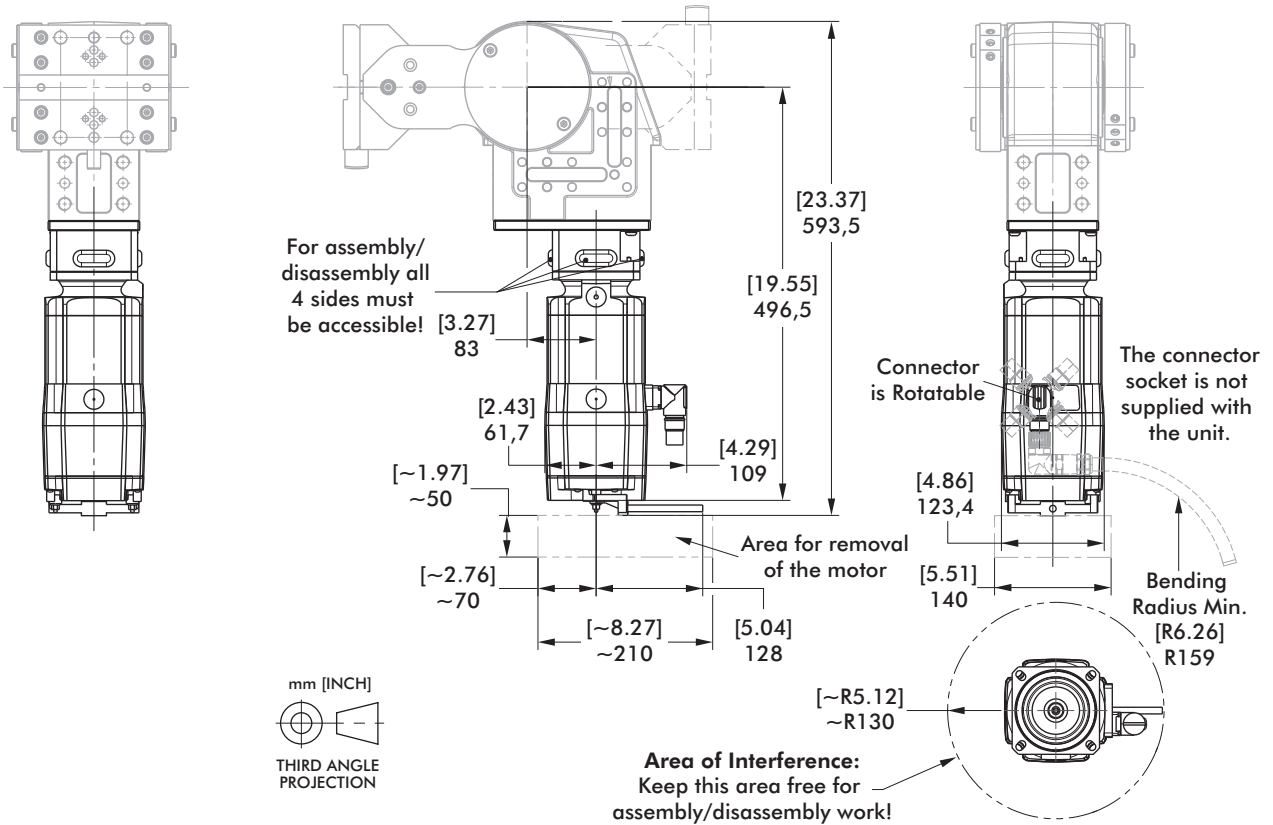
### 98W03-270 LENZE 400 V



# 98W03-XXX MOTOR OPTIONS

Electric Pivot Unit | Motor Dimensions

98W03-310 SEW 400 V for MOVIMOT



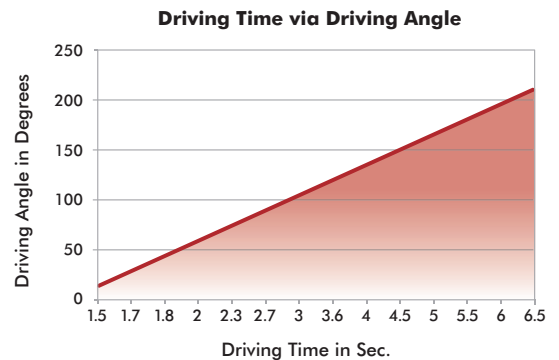
# 98W03-XXX

## Electric Pivot Unit | Technical Specifications

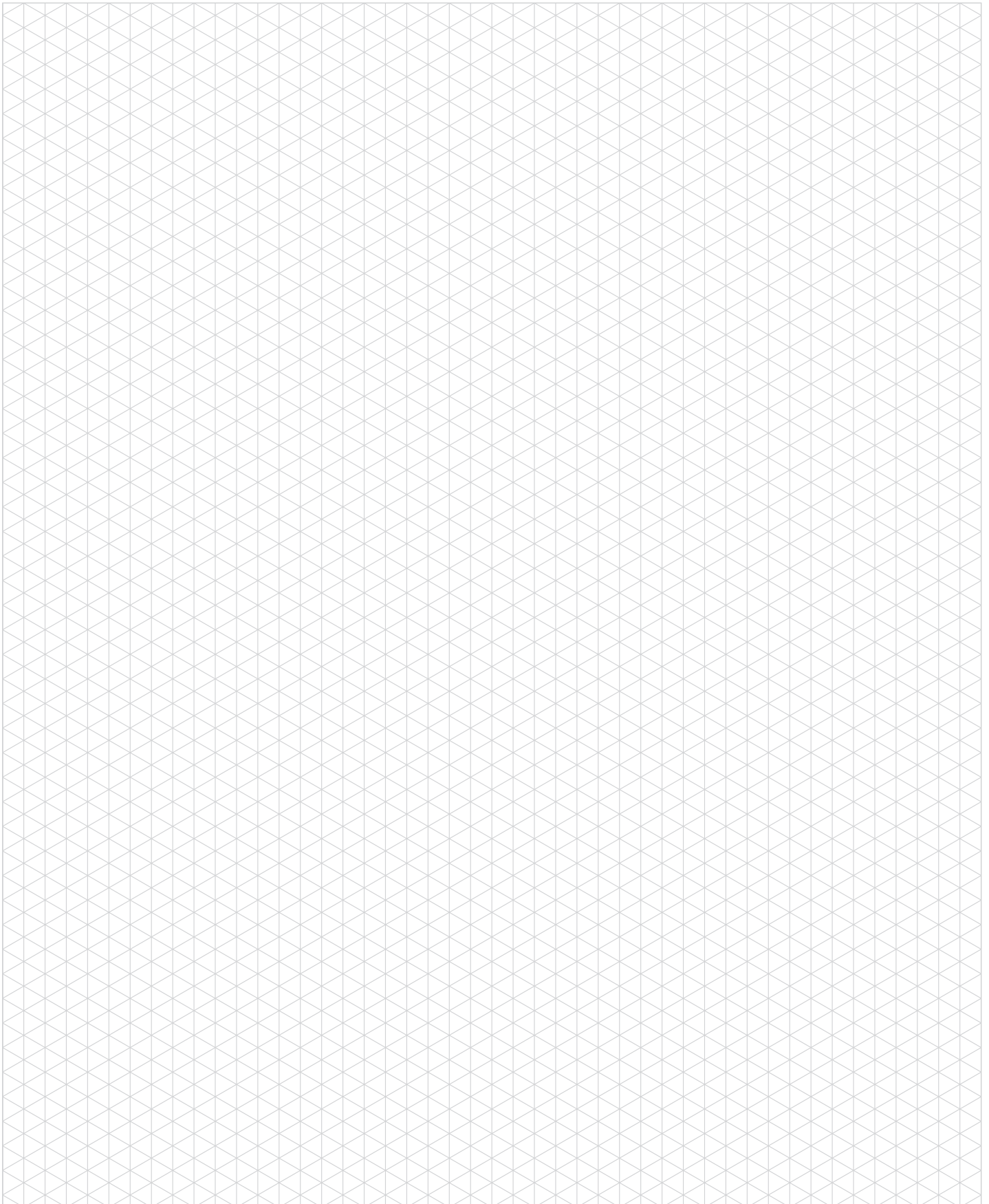
Specifications	Units	98W03-210	98W03-220	98W03-260	98W03-270	98W03-310
Brake	V	400	24	400	24	400
Temperature	°C [°F]	0°-60° [32°-140°]				
Weight	kg [lbs]	~51,5 [~113.54]	~38,3 [~84.44]	~43 [~94.80]	~38,6 [~85.10]	48,2 [~106.26]
Connection Voltage of Control Control signals from external PLC Return signal to external PLC		400 VAC	48 VDC	400 VAC	400 VAC	400 VAC
Logic		N/A	24 VDC	N/A	N/A	N/A
Speeds:						
Drive from 135° to 0°	sec.	3.1 sec / 135°				
Drive from 0° to 135°	sec.					
Maximum Output Torque	Nm [ft-lbs]	500 [369]				
Maximum Holding Torque	Nm [ft-lbs]	2000 [1475]				
Gear Ratio		420:1				
Permissible Motor Torque (Motor torque must be limited on the control side)	Nm [ft-lbs]	6 [4.4]				
Permissible Motor Speed	RPM	6000 1/min Max.				
Switch On Time		70%				
Permissible Output Speed:						
Radial	N [lbf]	2000 [449.6]				
Axial	N [lbf]	5000 [1124]				
Below 45°	N [lbf]	1500 [337]				
Duty Cycle		70%				
E-Stop	N [lbf]	0.4 sec @ 500 [0.4 sec @ 112] = ca. 10°				
Acceleration	sec	2				
Slow down	sec	2				
Repeatability with Hard Stop	mm [in]	± 0,01 @ 500 [± 0.0004 @ 19.69]				
Repeatability w/o Hard Stop	mm [in]	± 0,05 @ 500 [± 0.002 @ 19.69]				

## Driving Time and Angle Guidelines

Driving Angle Degrees	Driving Time Sec.	Max Speed RPM	Jolt Time Sec.	Acceleration Ramp ms	Braking Ramp ms	Amplification X-Controller
15	1.4	4017	0.1	500	500	2.23
30	1.7	5862				
45	1.8	6000		400	400	
60	2.0					
75	2.3					
90	2.7			500	500	
105	3.0					
120	3.6			600	600	
135	4.0	800		800		
150	4.5	600		600		
165	5.0	5700		700	700	
180	5.5	5600		800	800	
195	6.0	4500				
210	6.5					



**Note:**  
Maximum speed should not exceed 6000 rpm.  
Velocity must never be in a trapezoidal profile.  
The velocity must have a triangular or sinusoidal shape. Acceleration ramps or jolt tiles must be adjusted corresponding to the driving angle.



# 81L

## Pneumatic Power Clamps | Miniature | Ordering Information

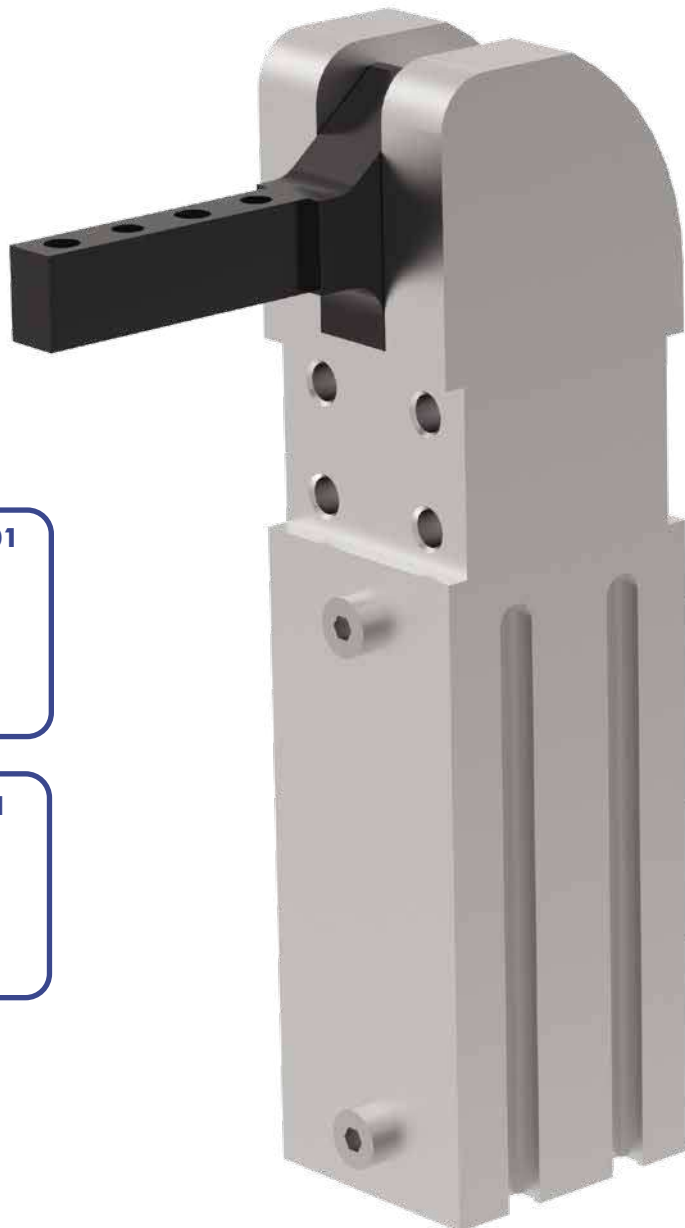
**81L** **12-1** **01** **00**

Size	Description
<b>12-1</b>	12 mm Cylinder (M5 Port)
<b>16-1</b>	16 mm Cylinder (M5 Port)
<b>20-1</b>	20 mm Cylinder (M5 Port)
<b>25-1</b>	20 mm Cylinder (M5 Port)

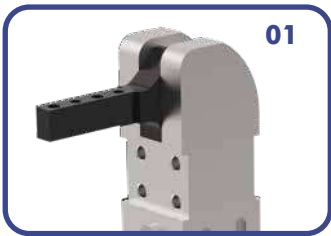
Arm Style	Description
<b>01</b>	Clamping arm, horizontal
<b>41</b>	Clamping arm, vertical

*See below for further details*

Design	Description
<b>00</b>	Standard design



Arm Style





### Accessories

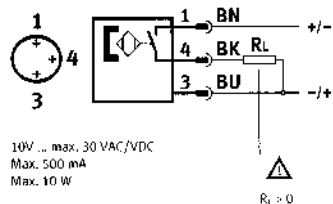
**8EA-109-1**

**82ZB-004-1**

Description (order separately)

Sensor, 3-wire cable, M8x1 connector, 3-pin

Adapter for mounting 81L20-1, 81L25-1 to 25mm dia. bar



**12**

Max Holding Torque  
25 Nm [18.4 ft-lb]  
Max Clamping Torque  
4,5 Nm [3.3 ft-lb]  
at 5 bar [72 psi]

**16**

Max Holding Torque  
60 Nm [44.3 ft-lb]  
Max Clamping Torque  
7 Nm [5.2 ft-lb]  
at 5 bar [72 psi]

**20**

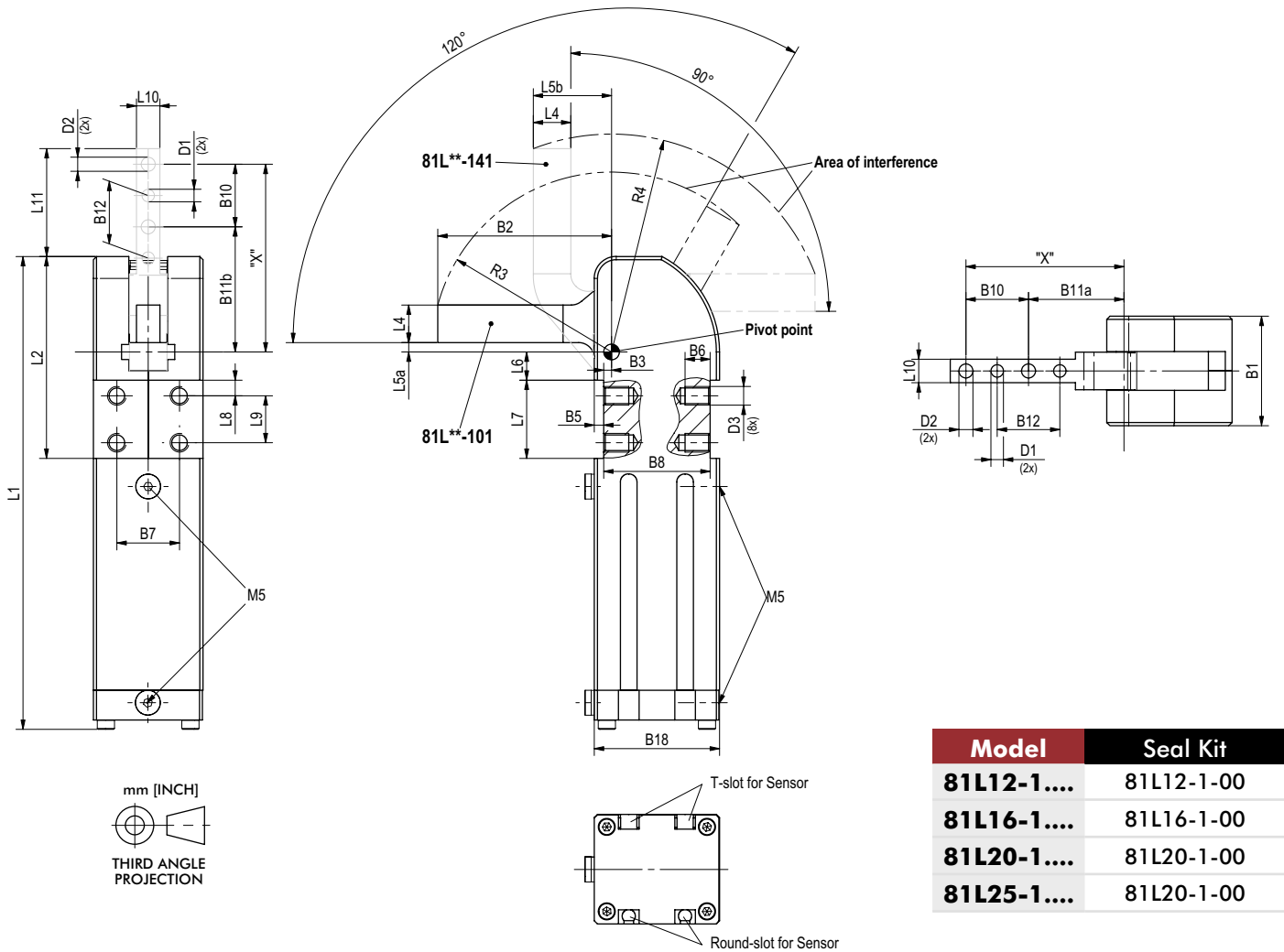
Max Holding Torque  
100 Nm [73.8 ft-lb]  
Max Clamping Torque  
18 Nm [13.3 ft-lb]  
at 5 bar [72 psi]

**25**

Max Holding Torque  
100 Nm [73.8 ft-lb]  
Max Clamping Torque  
18 Nm [13.3 ft-lb]  
at 5 bar [72 psi]

# 81L

## Pneumatic Power Clamps | Miniature | Dimensions and Seal Kits



Power by compressed air, max. 6 bar Operation with oil-free air is permissible.

Model	D1 Ø [H7]	D2 Ø	D3 Ø	B1	B2	B3 ±0,1	B5 ±0,2	B6	B7 ±0,1	B8 ±0,1	B10 ±0,2	B11α	B11b	B12
<b>81L12-1....</b>	[0.12] 3	[0.13] 3,3	M4	[0.94] 24	[1.57] 40	[0.10] 2,5	[0.06] 1,5	[0.24] 6	[0.59] 15	[0.98] 25	[0.35] 9	[1.06] 27	[1.24] 31,5	[0.35] 9
<b>81L16-1....</b>	[0.12] 3	[0.17] 4,3	M5	[1.12] 30	[1.97] 50	[0.08] 2	[0.08] 2	[0.19] 5	[0.79] 20	[1.02] 26	[0.59] 15	[1.18] 30	[1.56] 39,5	[0.59] 15
<b>81L20-1....</b>	[0.16] 4	[0.18] 4,5	M6	[1.38] 35	[2.12] 55,5	[0.10] 2,5	[0.12] 3	[0.28] 7	[0.79] 20	[1.34] 34	[0.79] 20	[1.20] 30,5	[1.57] 40	[0.79] 20
<b>81L25-1....</b>	[0.16] 4	[0.26] 6,5	M6	[1.38] 35	[2.58] 65,5	[0.10] 2,5	[0.12] 3	[0.28] 7	[0.79] 20	[1.34] 34	[0.79] 20	[1.59] 40,5	[1.97] 50	[0.79] 20

Model	B18	L1 ~	L2	L4	L5α	L5b	L6	L7 ±0,1	L8	L9	L10	L11	R3 ~	R4 ~
<b>81L12-1....</b>	[1.10] 28	[4.09] 104	[1.59] 40,5	[0.28] 7	[0.10] 2,5	[0.7] 17,5	[0.18] 4,5	[0.59] 15	[0.12] 3	[0.35] 9	[0.24] 6	[0.93] 23,5	[1.61] 41	[1.89] 48
<b>81L16-1....</b>	[1.18] 30	[4.69] 119	[1.95] 49,5	[0.35] 9	0.09 2,25	[0.8] 20,5	[0.23] 5,75	[0.79] 20	[0.16] 4	[0.47] 12	[0.31] 8	[1.41] 35,75	[2.00] 51	[2.48] 63
<b>81L20-1....</b>	[1.57] 40	[5.94] 151	[2.54] 64,5	[0.47] 12	[0.12] 3	[0.98] 25	[0.35] 9	[0.98] 25	[0.19] 5	[0.59] 15	[0.29] 7,5	[1.36] 34,5	[2.26] 57,5	[2.75] 70
<b>81L25-1....</b>	[1.57] 40	[5.94] 151	[2.54] 64,5	[0.47] 12	[0.12] 3	[0.98] 25	[0.35] 9	[0.98] 25	[0.19] 5	[0.59] 15	[0.47] 12	[1.75] 44,5	[2.64] 67	[3.11] 79

## Pneumatic Power Clamps | Miniature | Technical Specifications

Model	Max. Holding Torque Nm [ft-lb]	Max. Clamping Torque at 5 bar [72 psi] Nm [ft-lb]	Weight kg [lbs]	Air Consumption per double stroke at 5 bar [72 psi] dm <sup>3</sup> [ft <sup>3</sup> ]	Max. Added Load (at Position, "X") g [oz]
81L12-101..	25 [18.4]	4,5 [3.3]	0,16 [0.4]	0,25 [0.01]	50 [1.8]
81L12-141..	20 [14.8]	4,5 [3.3]	0,17 [0.4]	0,25 [0.01]	50 [1.8]
81L16-101..	60 [44]	6,5 [4.8]	0,25 [0.6]	0,27 [0.01]	80 [2.8]
81L16-141..	40 [29.5]	7,0 [5.23]	0,27 [0.6]	0,26 [0.01]	80 [2.8]
81L20-101..	100 [73.8]	18 [13.3]	0,50 [1.1]	0,40 [0.02]	90 [3.2]
81L20-141..	80 [59]	17 [12.5]	0,52 [1.2]	0,35 [0.01]	90 [3.2]
81L25-101..	100 [73.8]	18 [13.3]	0,52 [1.2]	0,40 [0.02]	100 [3.5]
81L25-141..	80 [59]	17 [12.5]	0,54 [1.25]	0,35 [0.01]	100 [3.5]

# 82L...-4...

## Enclosed Pneumatic Power Clamps | Miniature | Ordering Information

82L 16-4 03 0

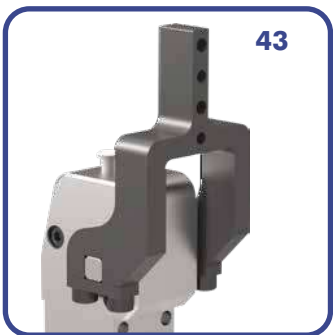
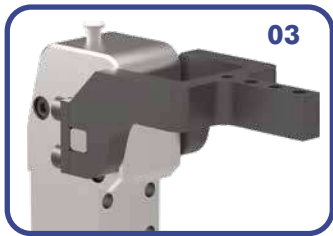
Size	Description
12-4	12 mm Cylinder (M5 Port)
16-4	16 mm Cylinder (M5 Port)
20-4	20 mm Cylinder (M5 Port)
25-4	25 mm Cylinder (M5 Port)

Arm Style	Description
00	No clamping arm
03	U-bar, central 90°
43	U-bar, central 180°
<i>See below for further details</i>	

Opening Angle	Description
0	105° (Standard)
3	90°
4	75°
5	60°
6	45°
7	30°
8	15°



Arm Style



### Accessories

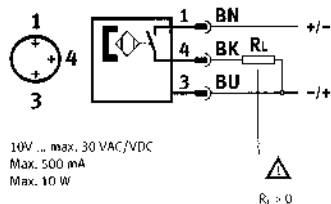
**8EA-109-1**

Description (order separately)

Sensor, 3-wire cable, M8x1 connector, 3-pin

**82ZB-004-1**

Adapter for mounting 82L20-4, 82L25-4 to 25mm dia. bar



**12**

Max Holding Torque  
35 Nm [25.8 ft-lb]  
Max Clamping Torque

**90° version:** 10,4 Nm [7.7 ft-lb]  
**180° version:** 8,7 Nm [6.4 ft-lb]  
at 5 bar [72 psi]



**16**

Max Holding Torque  
40 Nm [29.5 ft-lb]  
Max Clamping Torque

12,4 Nm [9.1 ft-lb]  
11 Nm [8.1 ft-lb]  
at 5 bar [72 psi]



**20**

Max Holding Torque  
50 Nm [36.9 ft-lb]  
Max Clamping Torque

21 Nm [15.5 ft-lb]  
19,3 Nm [14.2 ft-lb]  
at 5 bar [72 psi]



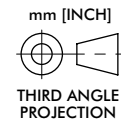
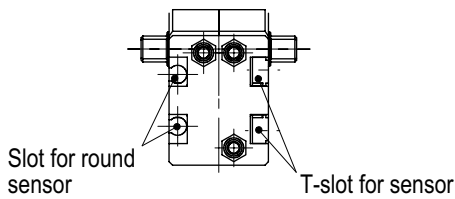
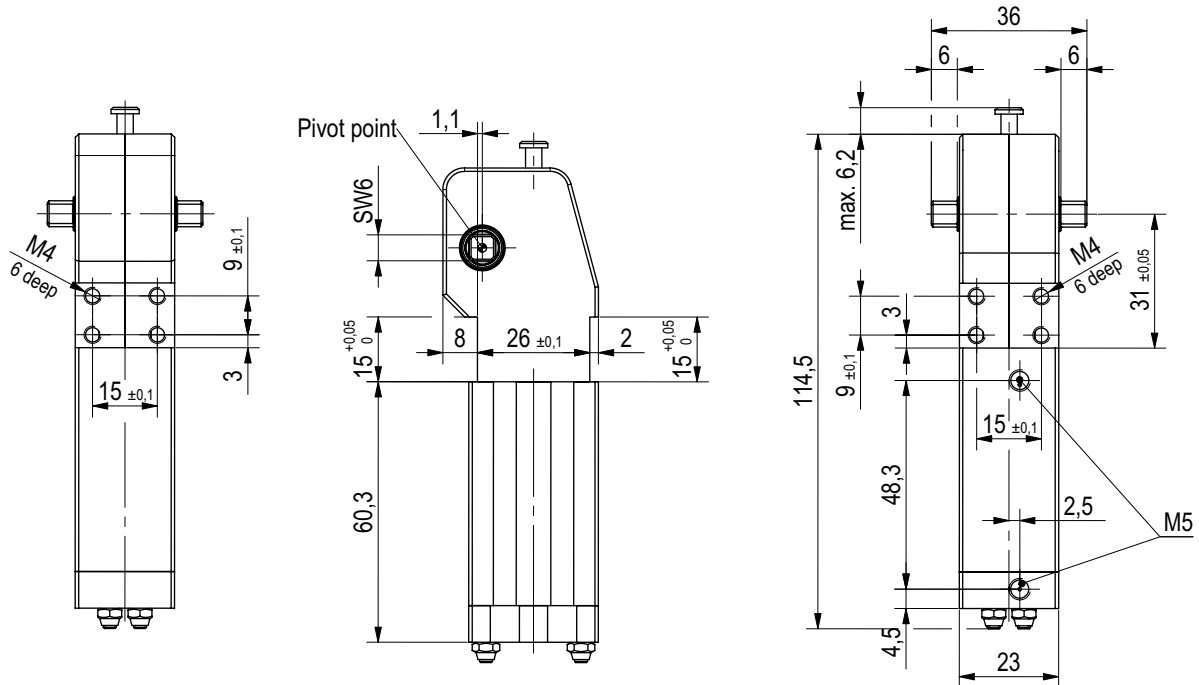
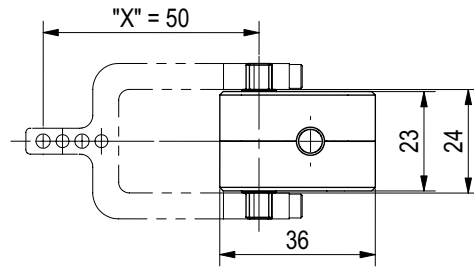
**25**

Max Holding Torque  
80 Nm [59.0 ft-lb]  
Max Clamping Torque

31,8 Nm [23.4 ft-lb]  
28,5 Nm [21.0 ft-lb]  
at 5 bar [72 psi]

# 82L12-4

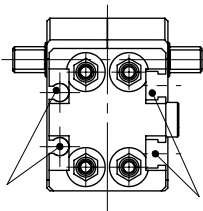
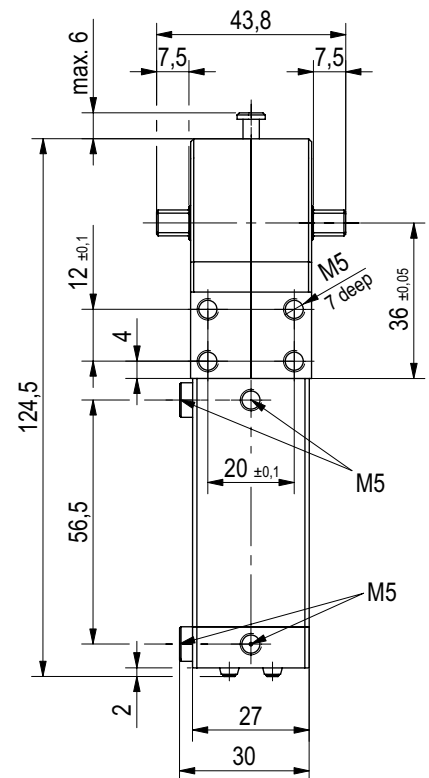
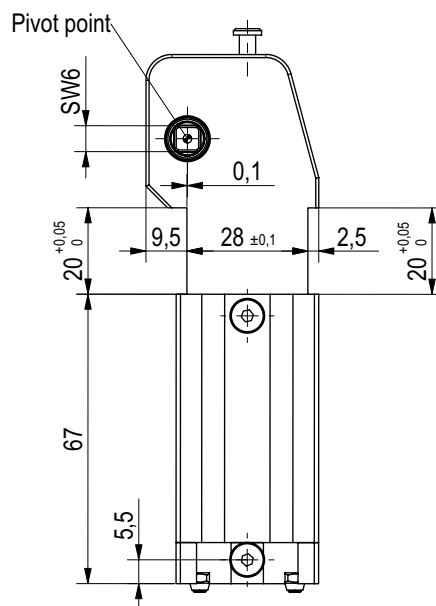
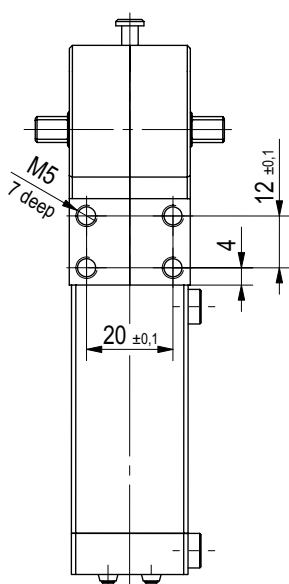
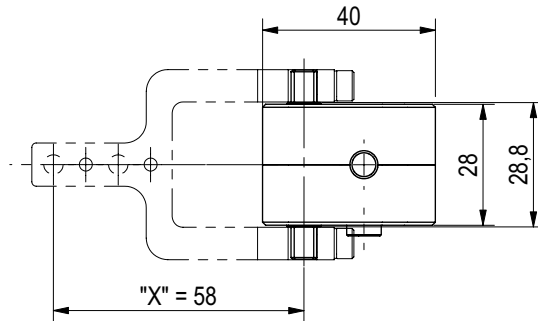
## Enclosed Pneumatic Power Clamps | Miniature | Dimensions and Technical Specifications



Power by compressed air, max. 6 bar Operation with oil-free air is permissible.

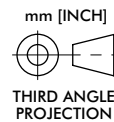
Model	Max. Holding Torque Nm [ft-lb]	Max. Clamping Torque at 5 bar [72 psi] Nm [ft-lb]	Weight [with arm] kg [lbs]	Air Consumption per double stroke at 5 bar [72 psi] dm <sup>3</sup> [ft <sup>3</sup> ]	Max. Added Load (at Position "X") g [oz]
82L12-4030	35 [25.8]	10,4 [7.8]	0,23 [0.5]	0,25 [0.01]	50 [1.8]
82L12-4430	35 [25.8]	8,7 [6.4]	0,23 [0.5]	0,25 [0.01]	50 [1.8]

## Enclosed Pneumatic Power Clamps | Miniature | Dimensions and Technical Specifications



Slot for round sensor

T-slot for sensor

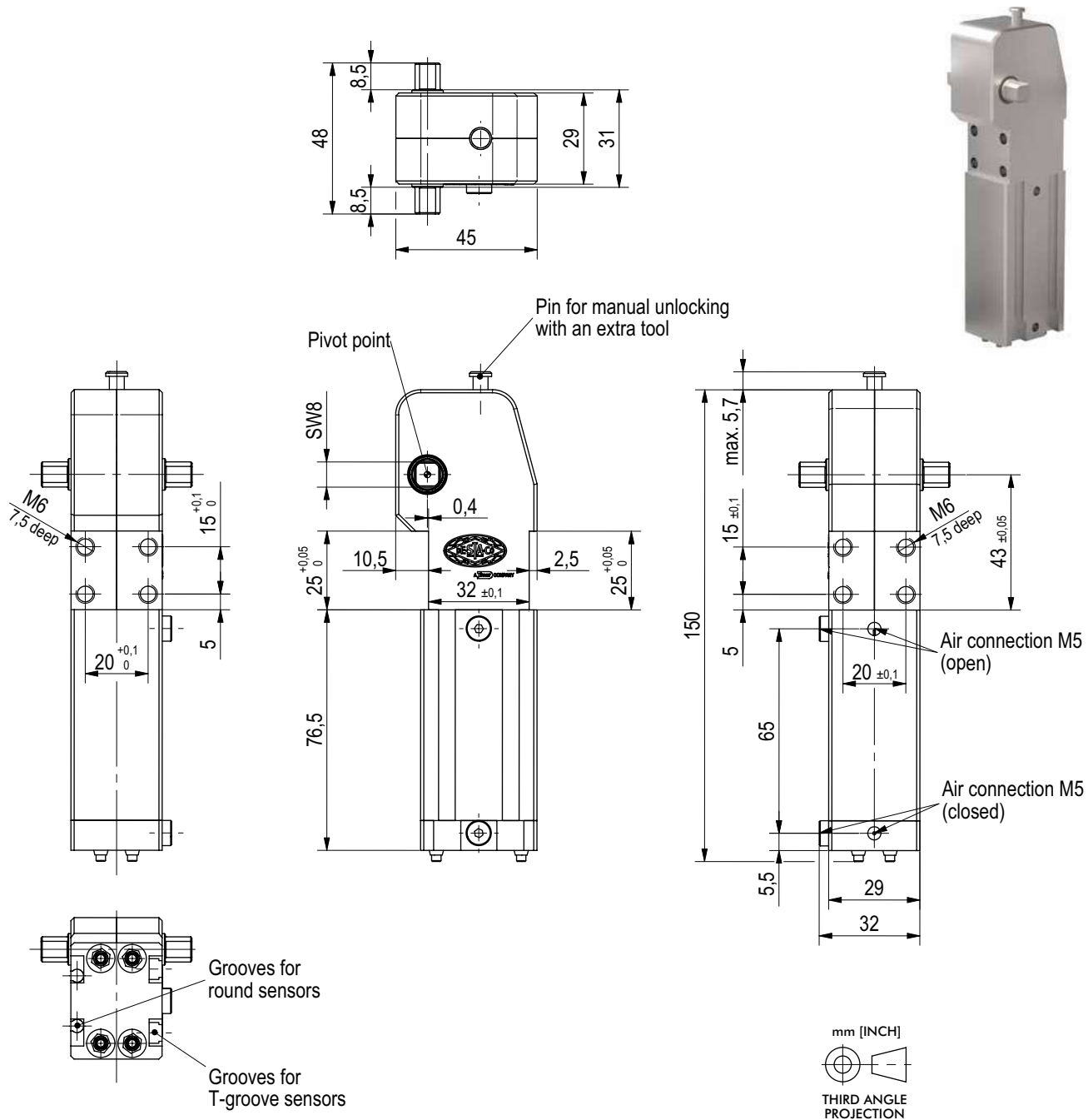


Power by compressed air, max. 6 bar Operation with oil-free air is permissible.

Model	Max. Holding Torque Nm [ft-lb]	Max. Clamping Torque at 5 bar [72 psi] Nm [ft-lb]	Weight [with arm] kg [lbs]	Air Consumption per double stroke at 5 bar [72 psi] dm <sup>3</sup> [ft <sup>3</sup> ]	Max. Added Load (at Position "X") g [oz]
<b>82L16-4030</b>	40 [29.5]	12,4 [9.4]	0,33 [0.7]	0,27 [0.01]	80 [2.8]
<b>82L16-4430</b>	40 [29.5]	11,0 [8.1]	0,33 [0.7]	0,27 [0.01]	80 [2.8]

# 82L20-4

## Enclosed Pneumatic Power Clamps | Miniature | Dimensions and Technical Specifications



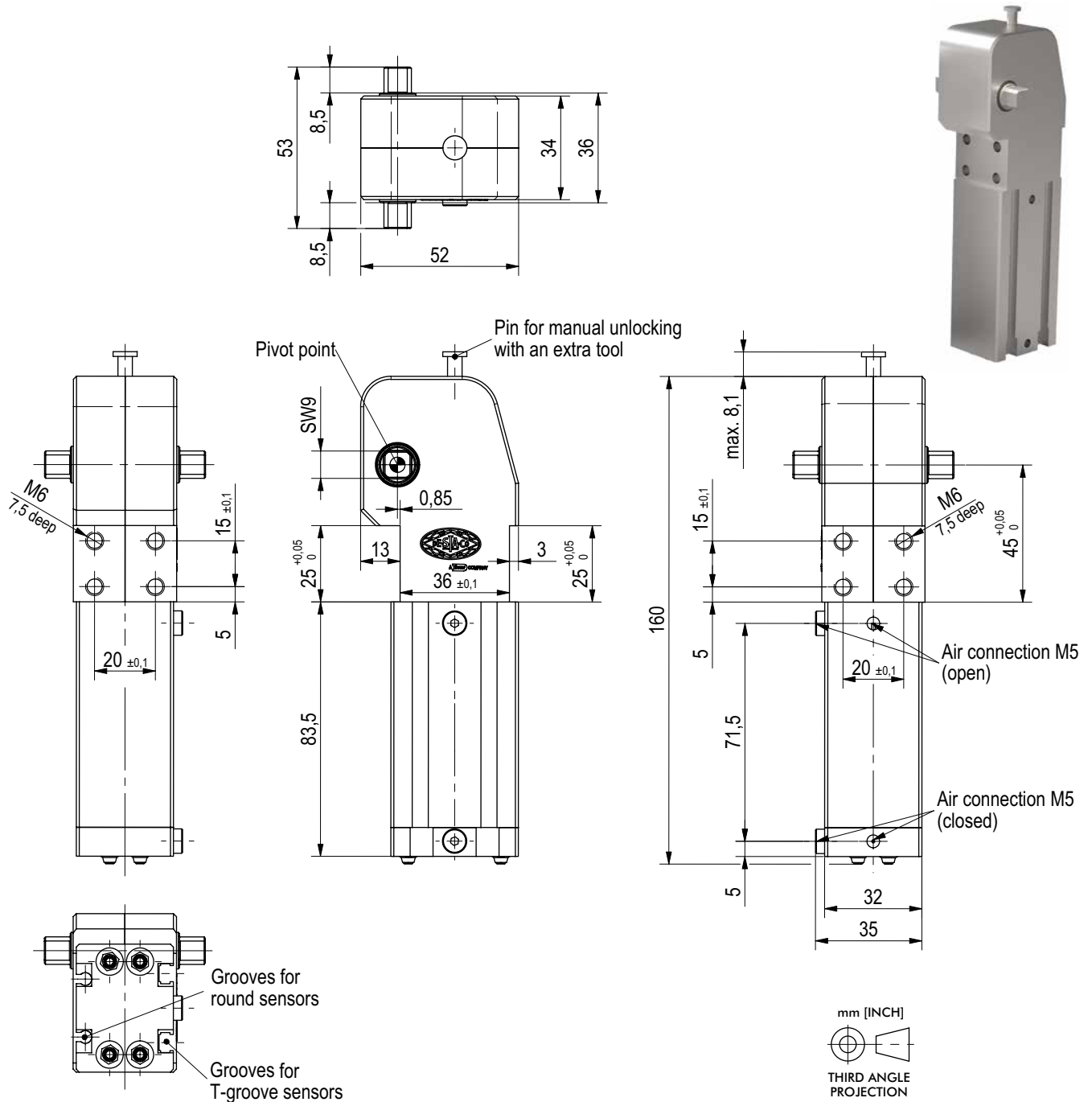
Power by compressed air, max. 6 bar Operation with oil-free air is permissible.

Model	Max. Holding Torque Nm [ft-lb]	Max. Clamping Torque at 5 bar [72 psi] Nm [ft-lb]	Weight [with arm] kg [lbs]	Air Consumption per double stroke at 5 bar [72 psi] dm <sup>3</sup> [ft <sup>3</sup> ]	Max. Added Load (at Position "X") g [oz]
82L20-4030	50 [36.9]	21,0 [15.5]	0,42 [0.9]	0,35 [0.01]	90 [3.2]
82L20-4430	50 [36.9]	19,3 [14.3]	0,42 [0.9]	0,35 [0.01]	90 [3.2]



# 82L25-4

## Enclosed Pneumatic Power Clamps | Miniature | Dimensions and Technical Specifications

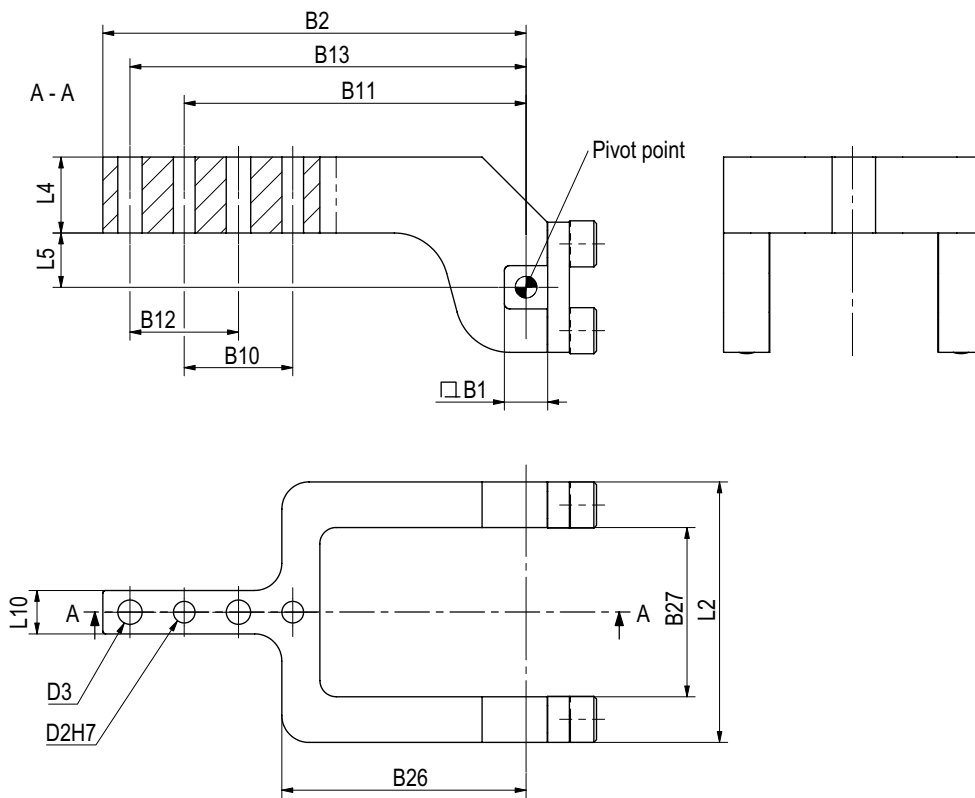


Power by compressed air, max. 6 bar Operation with oil-free air is permissible.

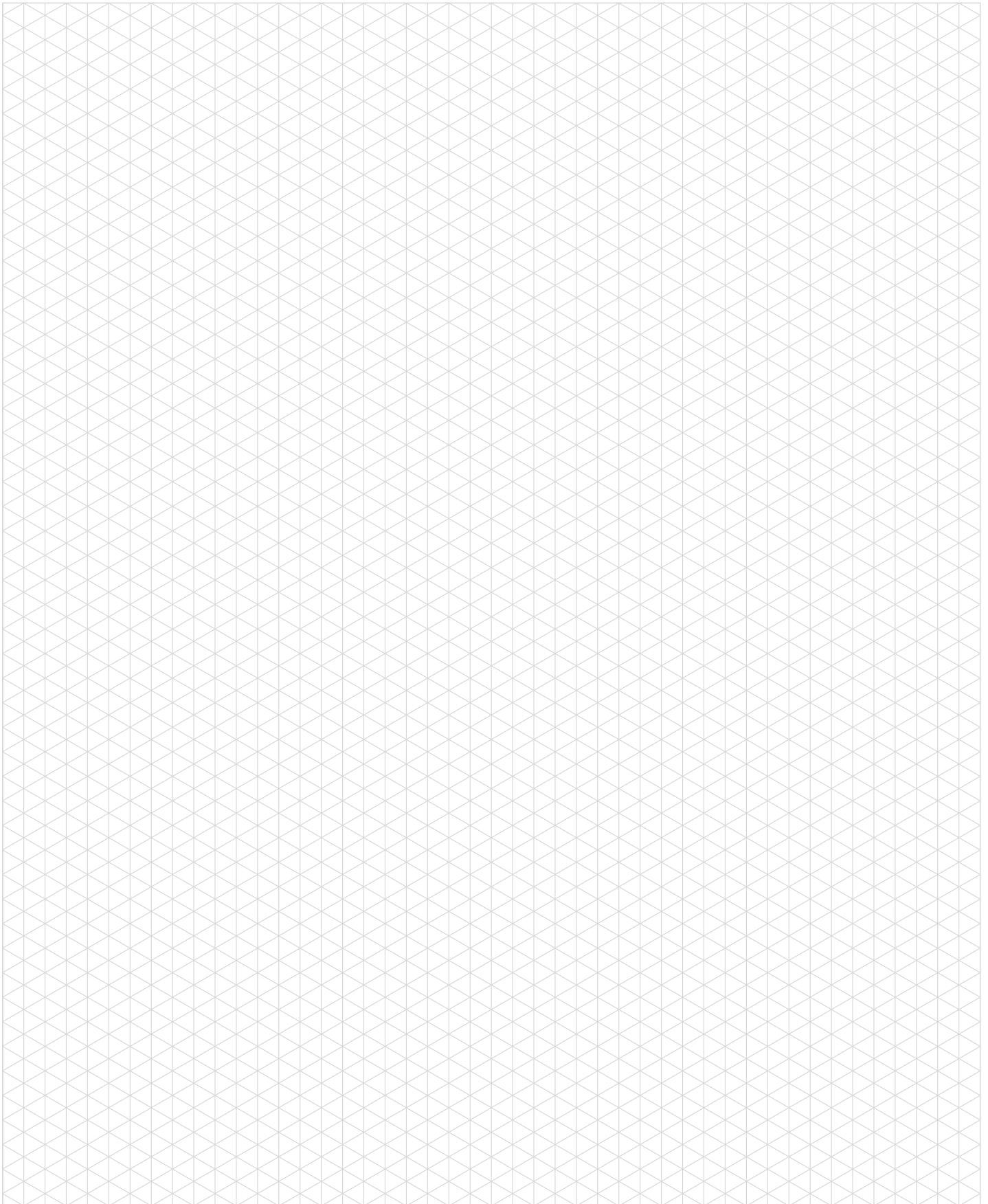
Model	Max. Holding Torque Nm [ft-lb]	Max. Clamping Torque at 5 bar [72 psi] Nm [ft-lb]	Weight [with arm] kg [lbs]	Air Consumption per double stroke at 5 bar [72 psi] dm <sup>3</sup> [ft <sup>3</sup> ]	Max. Added Load (at Position "X") g [oz]
<b>82L25-4030</b>	80 [59]	31,8 [23.5]	0,66 [1.5]	0,40 [0.01]	100 [3.5]
<b>82L25-4430</b>	80 [59]	28,5 [12.5]	0,66 [1.5]	0,40 [0.01]	100 [3.5]

# 82L...-4...

## Enclosed Pneumatic Power Clamps | Miniature | Clamp Arm Dimensions



Model	Order no. for Arm	Max. Opening angle	B1	B2	B10 ±0,02	B11 ±0,02	B12 ±0,1	B13 ±0,1	B26	B27	D2 H7	D3	L2	L4	L5	L10
82L12-4...	8JG-401-1-01	105°	6	54	9	45.5	9	50	38,5	24	3	3.3	36	7	10	6
82L16-4...	8JG-402-1-01	105°	6	63	15	50.5	15	58	36,5	29	3	4.5	44	9.5	10	10
82L20-4...	8JG-403-1-01	105°	8	78	20	63	20	73	45	31,2	4	4.5	48	14	10	8
82L25-4...	8JG-404-1-01	105°	9	81	20	66	20	76	48	36	4	6.4	53	16	10	12



# 82L-3E

Enclosed Pneumatic Power Clamps | Lightweight Modular | Ordering Information

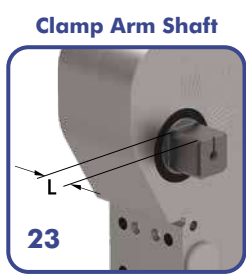
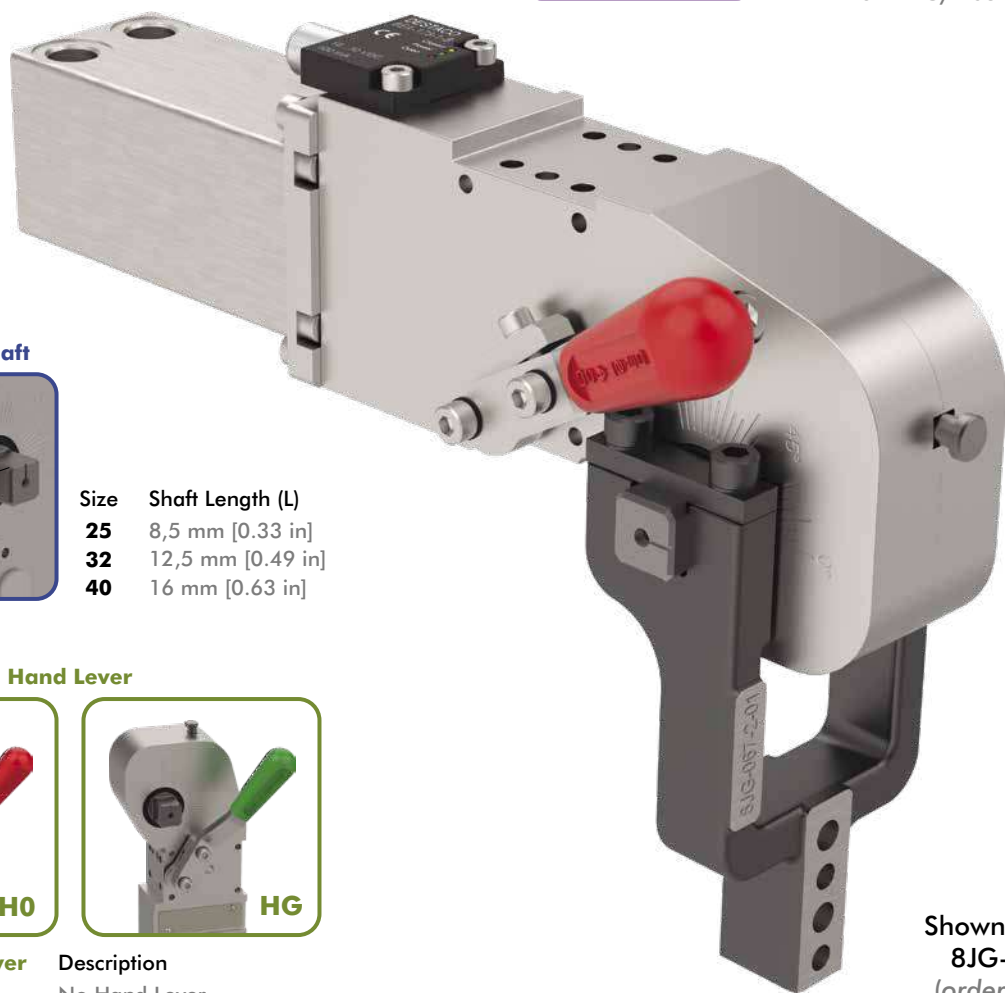
**82L-3E**   **23**   **H0**   **40**   **B7**

**Clamp Arm Shaft**  
**23**  
Description  
for Arms  
See below for further details

**Hand Lever**   Description  
**00**   No Hand lever  
**H0**   Red Hand lever  
**HG**   Green Hand lever  
See below for further details



**Cylinder (Standard)**  
**25** 25 mm Cylinder (G1/8 Port)  
**2N** 25 mm Cylinder (1/8-18 NPT Port)  
**32** 32 mm Cylinder (G1/8 Port)  
**3N** 32 mm Cylinder (1/8-18 NPT Port)  
**40** 40 mm Cylinder (G1/4 Port)  
**4N** 40 mm Cylinder (1/4-18 NPT Port)



**Size**   **Shaft Length (L)**  
**25**   8,5 mm [0.33 in]  
**32**   12,5 mm [0.49 in]  
**40**   16 mm [0.63 in]

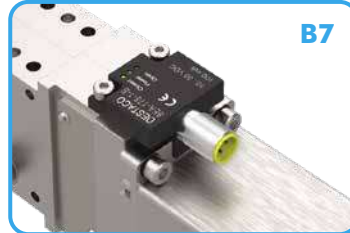
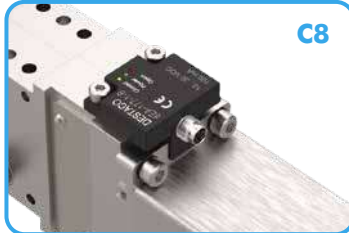


**Hand Lever**   Description  
**00**   No Hand Lever  
**H0**   Red Hand Lever  
**HG**   Green Hand Lever

Shown with U-Arm  
8JG-067-2-01  
(order separately)

## Enclosed Pneumatic Power Clamps | Lightweight Modular | Ordering Information

Sensor	Description
00	Without Sensing System
C8	Inductive Sensing System with In-Line M8x1 Connector (Size 25: 8EA-174-1-B, Size 32/40: 8EA-177-1-B)
B7	Inductive Sensing System with In-Line M12x1 Connector (Size 25: 8EA-175-1-B, Size 32/40: 8EA-178-1-B)
B8	Inductive Sensing System with M12x1 Connector with Cable (Size 25: 8EA-176-1-B, Size 32/40: 8EA-179-1-B)



**25/N**

Max Holding Torque  
75 Nm [55 ft-lb]  
Max Clamping Torque  
25 Nm [18 ft-lb]  
at 5 bar [72 psi]

**32/N**

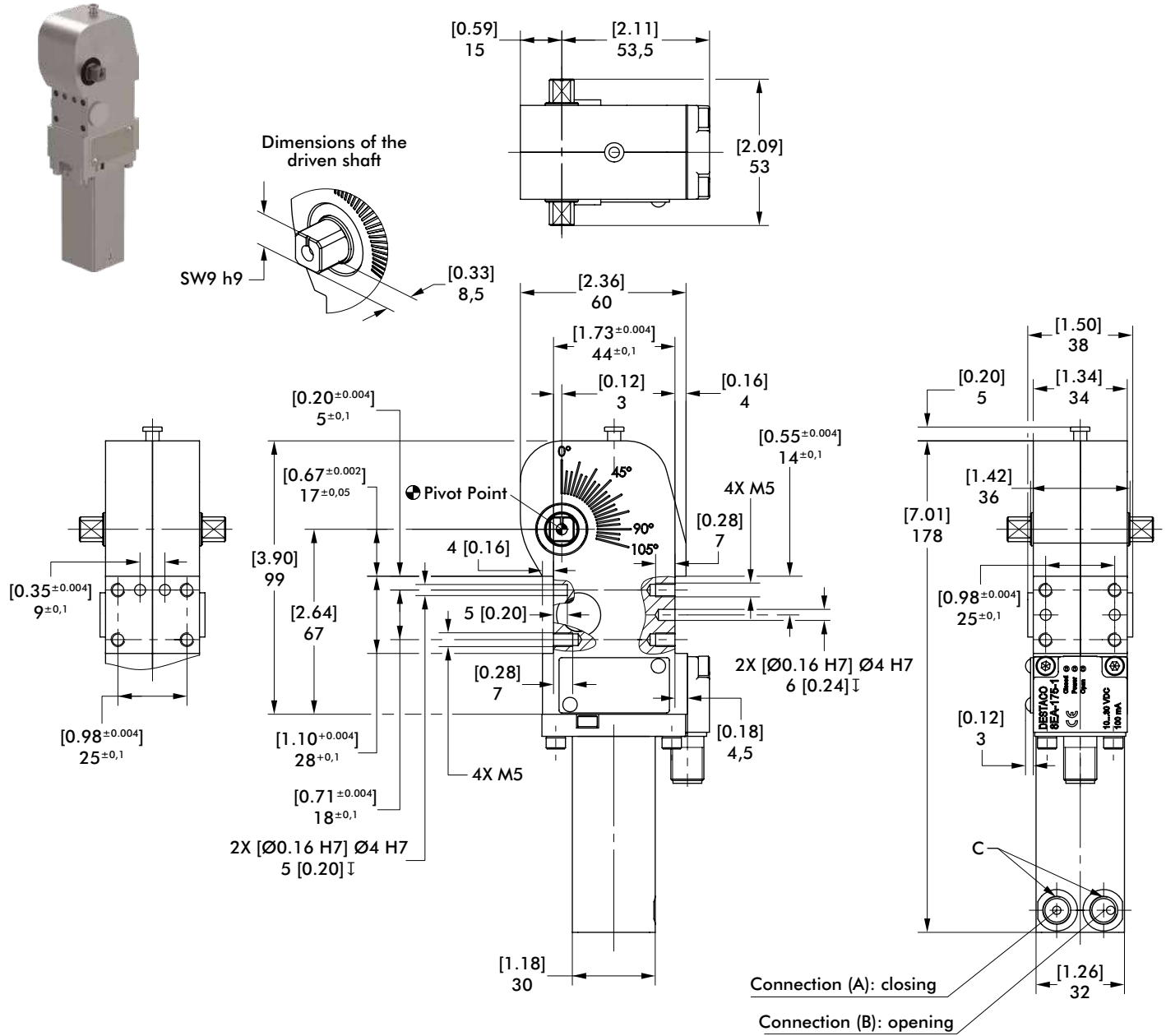
Max Holding Torque  
180 Nm [133 ft-lb]  
Max Clamping Torque  
55 Nm [41 ft-lb]  
at 5 bar [72 psi]

**40/N**

Max Holding Torque  
380 Nm [280 ft-lb]  
Max Clamping Torque  
120 Nm [89 ft-lb]  
at 5 bar [72 psi]

# 82L-3E

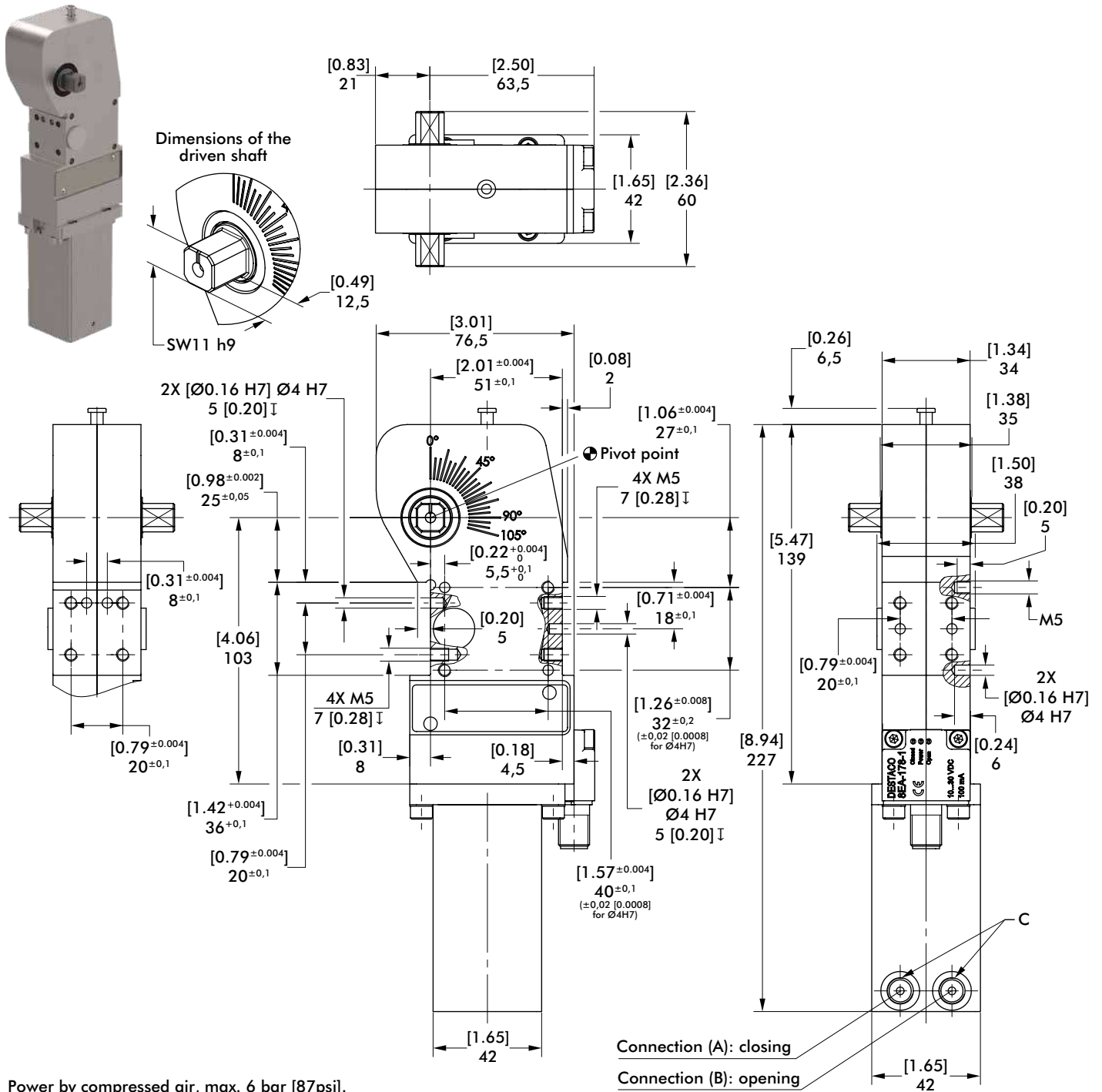
## Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications



Power by compressed air, max. 6 bar [87psi].  
 Operation with oil-free air is permissible.  
 The connector socket and the cable are not supplied with the unit.  
 Clamping arms sold separately.

Model	Max. Holding Torque Nm [ft-lb]	Clamping Torque at 5 bar [72 psi] Nm [ft-lb]	Piston Ø mm	Weight kg [lbs]	Air consumption per double stroke at 5 bar [72 psi] dm <sup>3</sup> [ft <sup>3</sup> ]	Connection C
82L-3E230025..	[55] 75	[18] 25	25	[1.32] 0,6	[0.01] 0,4	G1/8
82L-3E23002N..						1/8-18 NPT

## Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications



Power by compressed air, max. 6 bar [87psi].

Operation with oil-free air is permissible.

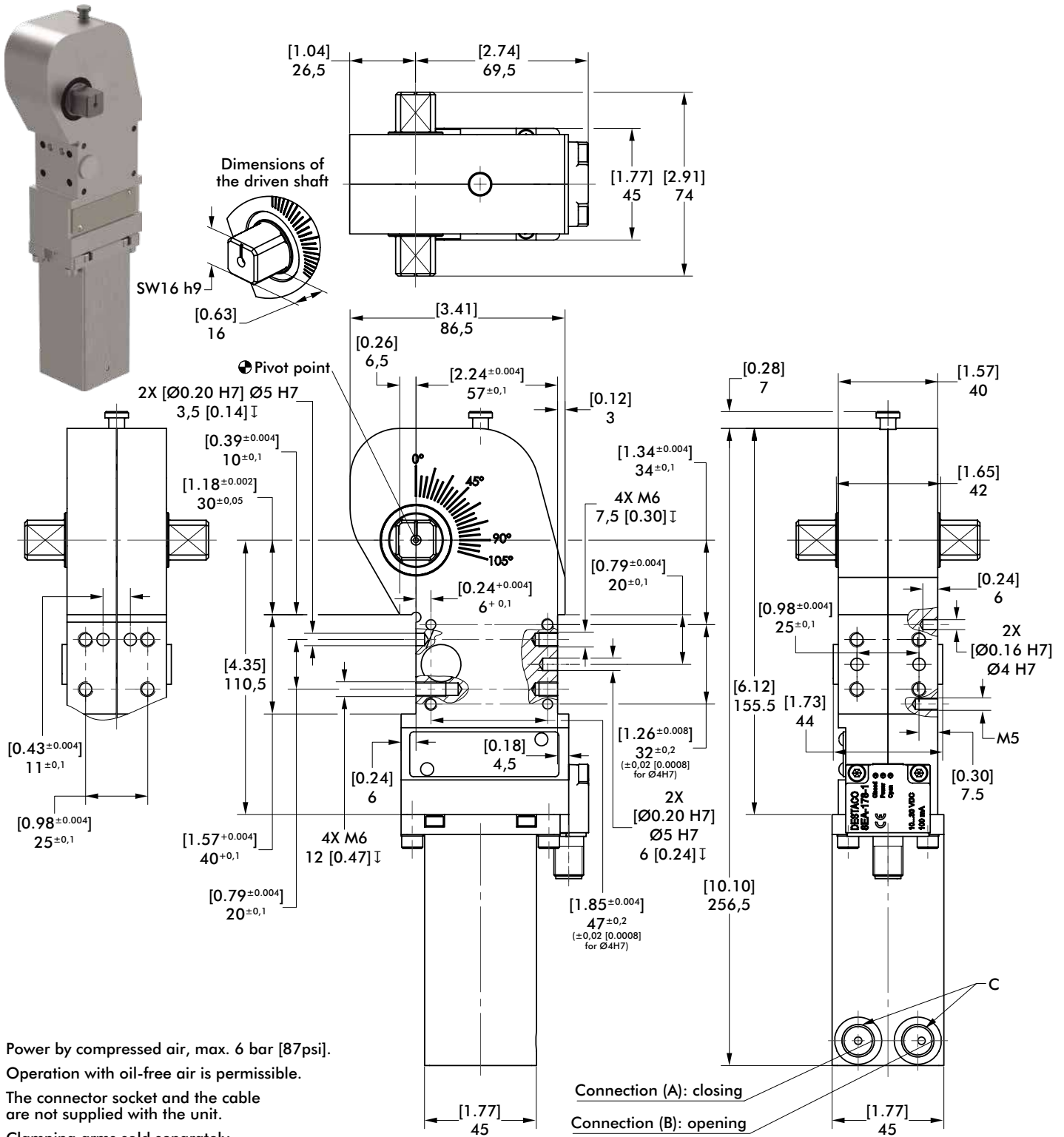
The connector socket and the cable are not supplied with the unit.

Clamping arms sold separately.

Model	Max. Holding Torque Nm [ft-lb]	Clamping Torque at 5 bar [72 psi] Nm [ft-lb]	Piston Ø mm	Weight kg [lbs]	Air consumption per double stroke at 5 bar [72 psi] dm <sup>3</sup> [ft <sup>3</sup> ]	Connection C
82L-3E230032..	[133] 180	[41] 55	32	[2.43] 1,1	[0.03] 0,8	G1/8
82L-3E23003N..						1/8-18 NPT

# 82L-3E

## Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications



Power by compressed air, max. 6 bar [87psi].

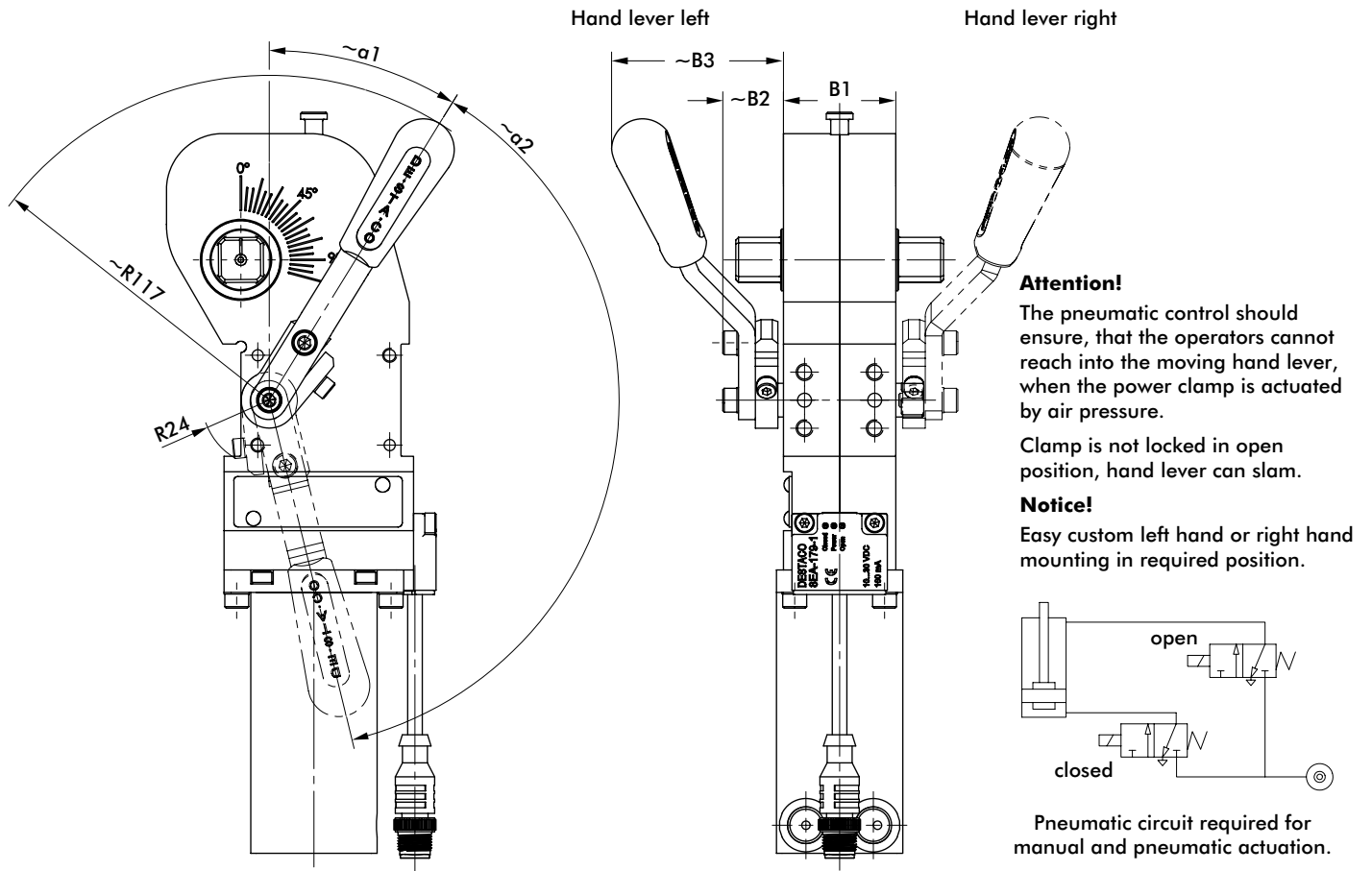
Operation with oil-free air is permissible.

The connector socket and the cable are not supplied with the unit.

Clamping arms sold separately.

Model	Max. Holding Torque Nm [ft-lb]	Clamping Torque at 5 bar [72 psi] Nm [ft-lb]	Piston Ø mm	Weight kg [lbs]	Air consumption per double stroke at 5 bar [72 psi] dm <sup>3</sup> [ft <sup>3</sup> ]	Connection C
82L-3E230040..	[280] 380	[89] 120	40	[3.53] 1,6	[0.04] 1,2	G1/4
82L-3E23004N..						1/4-18 NPT

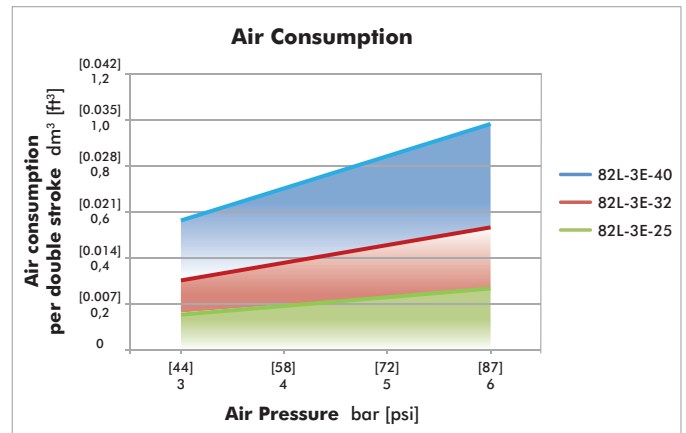
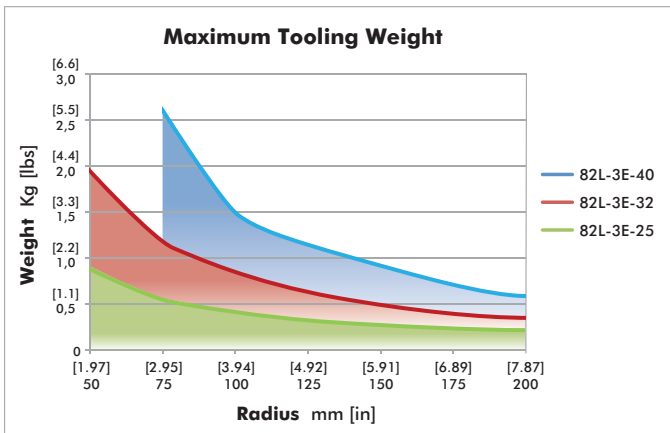
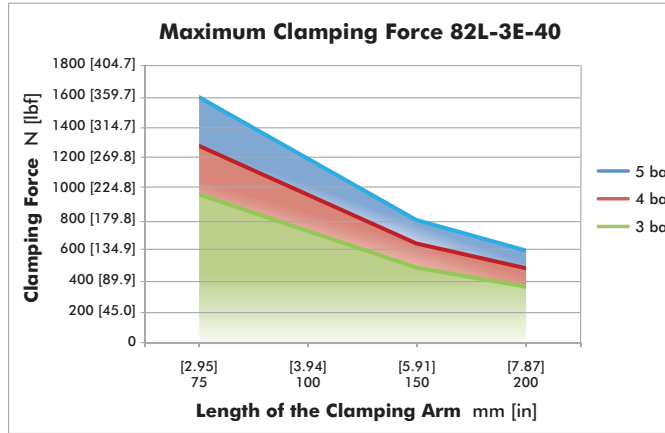
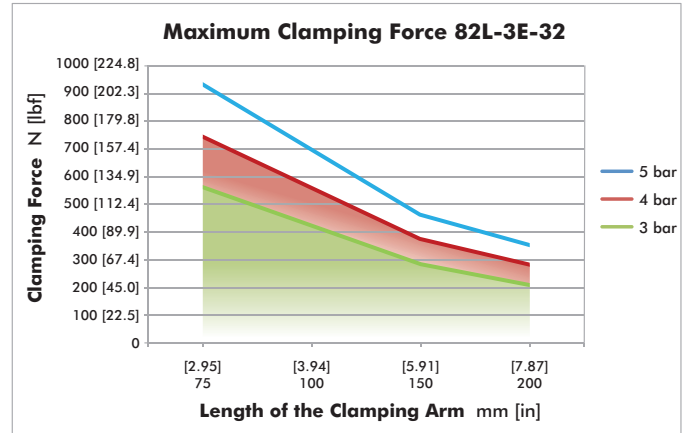
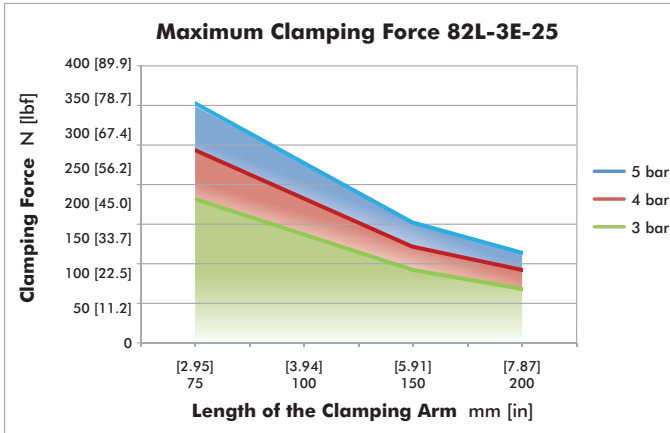




Model No.	Weight Kg [lbs]	Swivel Angle ~a2 (with reference to opening angle of clamp arm)										
		B1	~B2	~B3	~a1	15°	30°	45°	60°	75°	90°	105°
82L-3E23H.2...	0,8 [1.76]	[1.34]	[0.85] 21,5	[2.40] 61	32°	39°	52°	64°	76°	90°	109°	130°
82L-3E23H.3...	1,3 [2.87]	34	[0.87]	[2.44] 62	31°		62°	74°	87°	103°	124°	
82L-3E23H.4...	1,8 [3.97]	[1.57] 40	22		32°	47°	60°	71°	83°	97°	114°	135°

# 82L-3E

## Enclosed Pneumatic Power Clamps | Lightweight Modular | Technical Specifications

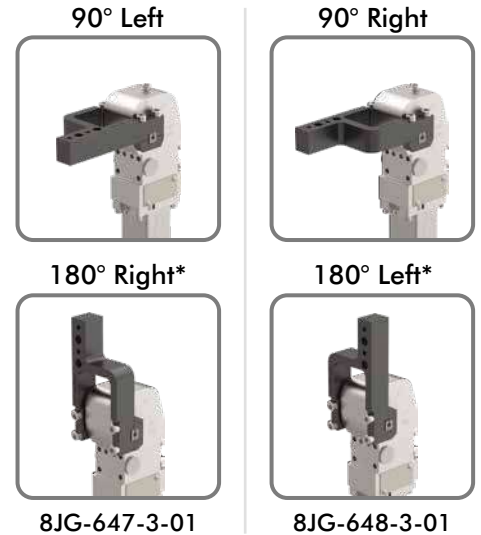
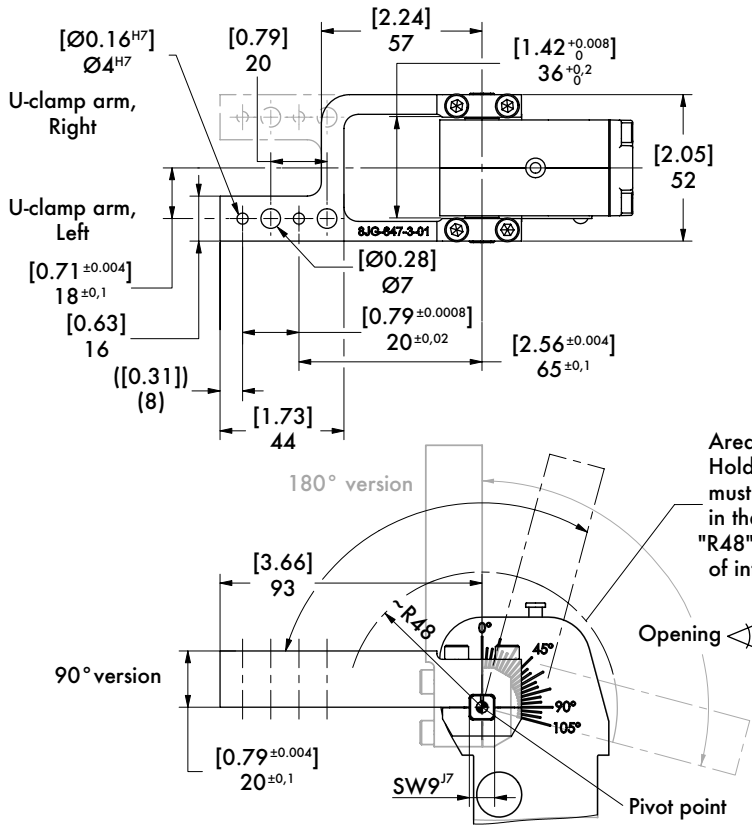


All data refers to a pneumatic pressure of 6 bar [87 psi] and to an opening or closing time of 1 second, as well as to the center of gravity of the complete construction directly attached to the clamp arm related to the fixed fulcrum.

# 82L-3E U-ARMS OFFSET, U-ARMS CENTER (STEEL)

Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications

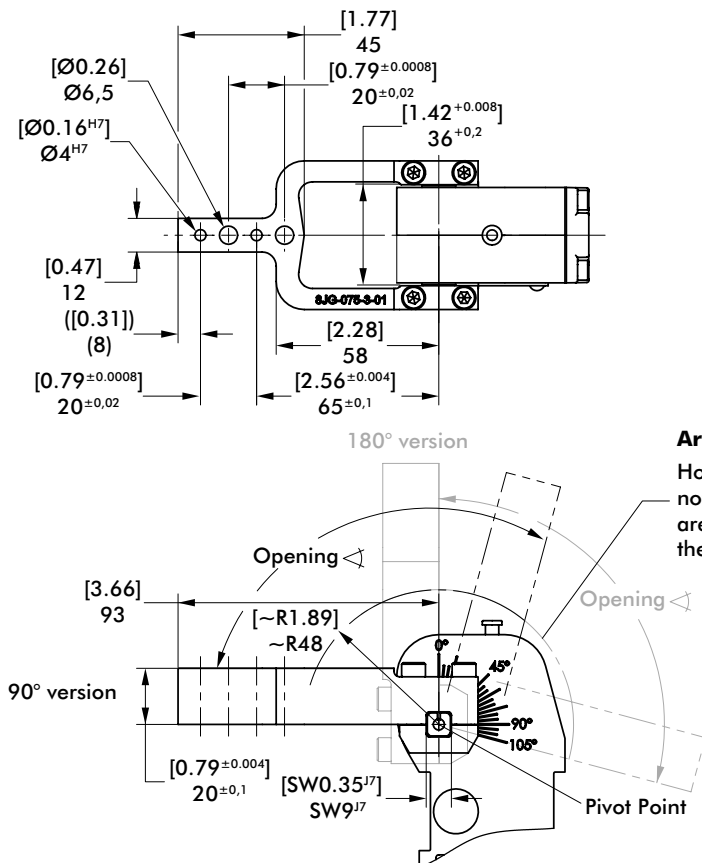
For Size 25mm



\*90° left/180° right uses same clamp arm.  
90° right/180° left uses same clamp arm.

Clamp arm sets consists of clamp arm, links and screws.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight kg [lbs]
8JG-647-3-01	105°	105°	[0.66]
8JG-648-3-01			0,3



For Size 25mm



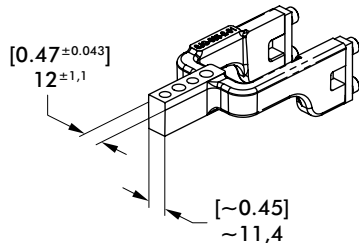
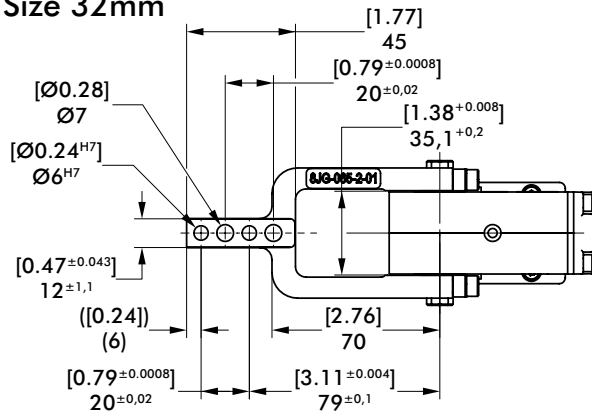
Clamp arm sets consists of clamp arm, links and screws.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight kg [lbs]
8JG-075-3-01	105°	105°	[0.66]
			0,3

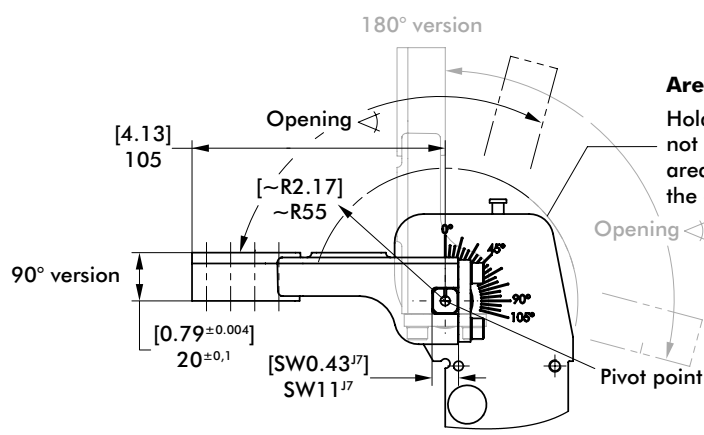
# 82L-3E U-ARMS CENTER (STEEL)

Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications

For Size 32mm



8JG-065-2-01

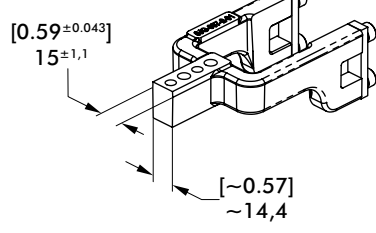
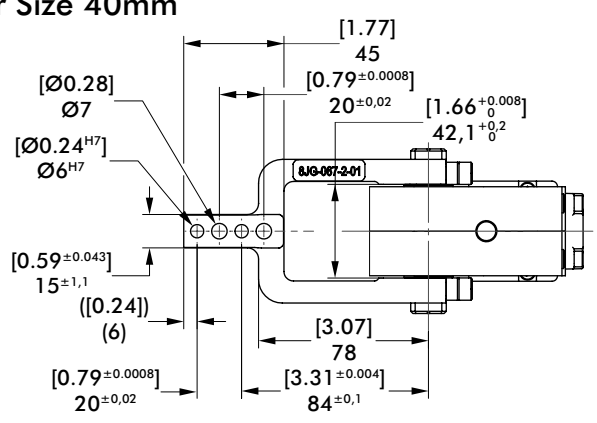


**Area of interference**  
Hold-down piece must not protrude in the interior area "R55 [R2.17]" due to the area of interference.

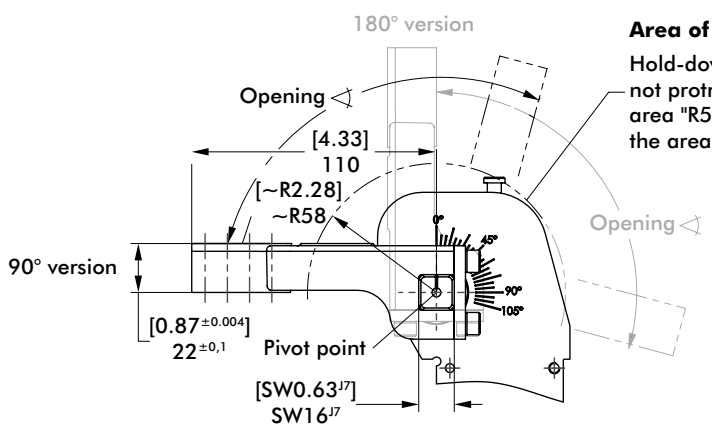
Clamp arm sets consists of clamp arm, links and screws.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight kg [lbs]
8JG-065-2-01	105°	105°	[0.82] 0,37

For Size 40mm



8JG-067-2-01



**Area of interference**  
Hold-down piece must not protrude in the interior area "R58 [R2.28]" due to the area of interference.

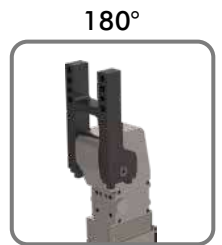
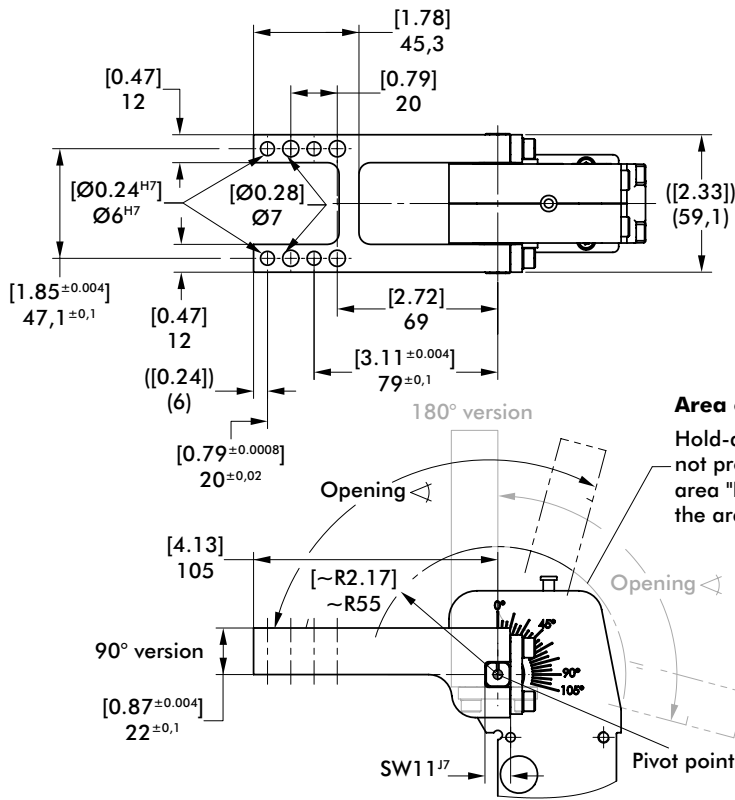
Clamp arm sets consists of clamp arm, links and screws.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight kg [lbs]
8JG-067-2-01	105°	105°	[1.10] 0,5

# 82L-3E H-ARMS (STEEL)

Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications

For Size 32mm

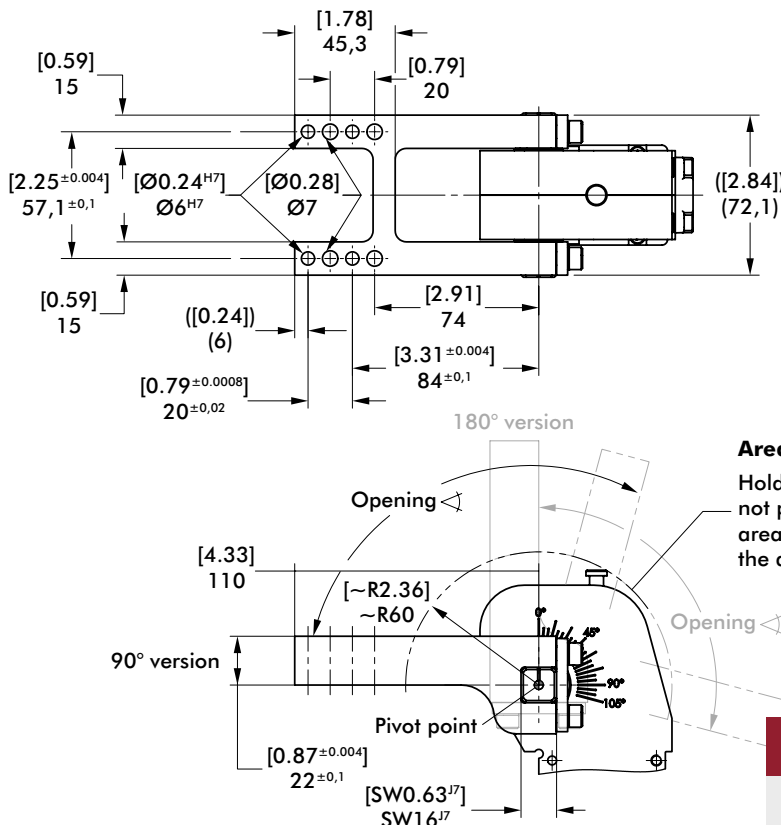


8JG-363-1-01

Clamp arm sets consists of clamp arm, links and screws.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight kg [lbs]
8JG-363-1-01	105°	105°	[1.15] 0,52

For Size 40mm



8JG-364-1-01

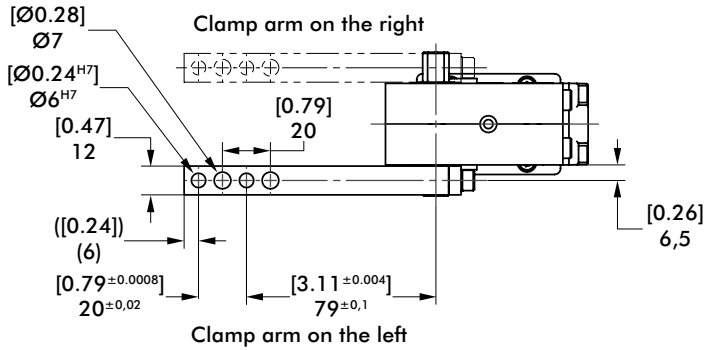
Clamp arm sets consists of clamp arm, links and screws.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight kg [lbs]
8JG-364-1-01	105°	105°	[1.70] 0,77

# 82L-3E LATERAL ARMS (STEEL)

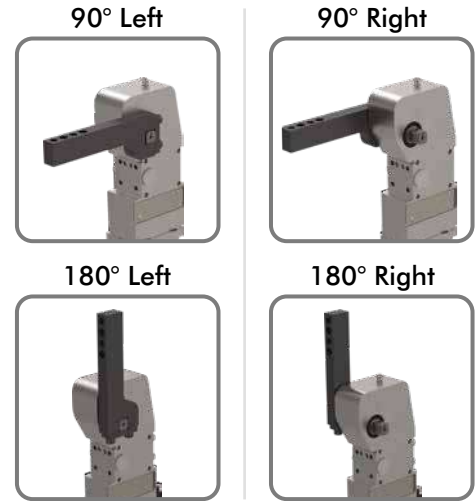
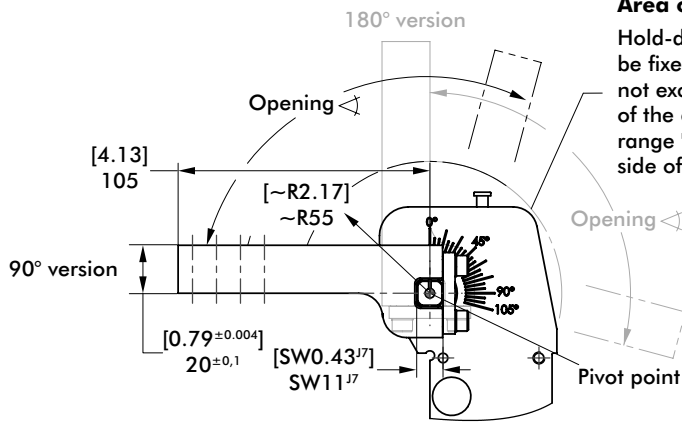
Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications

For Size 32mm



### Area of interference

Hold-down pieces which must be fixed on the clamp arm must not exceed the width "12 [0.47]" of the clamp arm in the swivelling range "R55 [R2.17]" on the inner side of the clamp arm.

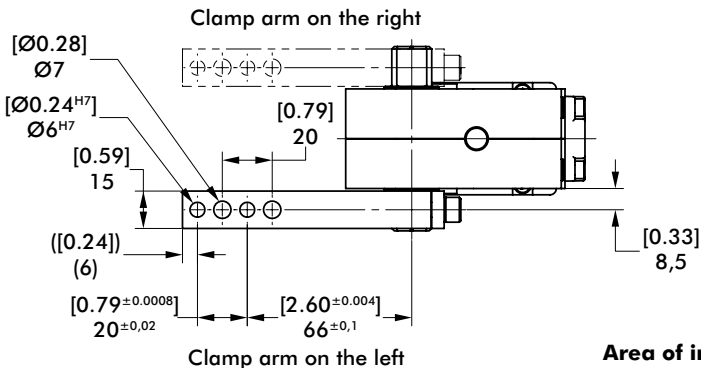


8JG-066-1-01

Clamp arm sets consists of clamp arm, links and screws.

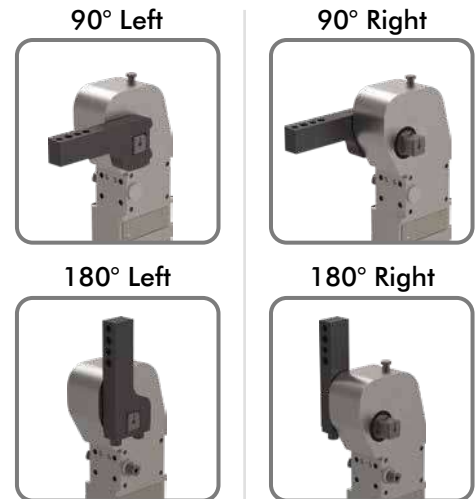
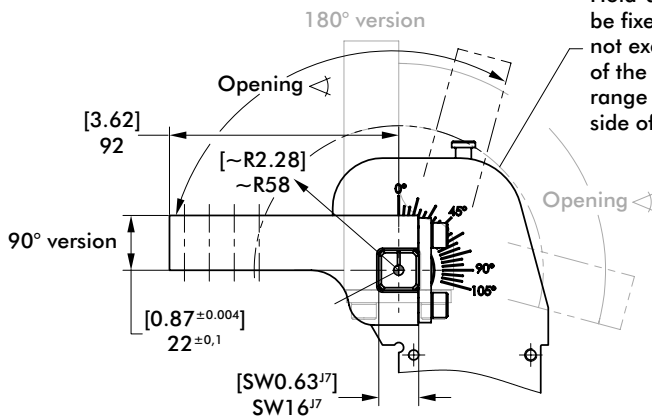
Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight kg [lbs]
8JG-066-1-01	105°	105°	[0.55] 0,25

For Size 40mm



### Area of interference

Hold-down pieces which must be fixed on the clamp arm must not exceed the width "15 [0.59]" of the clamp arm in the swivelling range "R58 [R2.28]" on the inner side of the clamp arm.



8JG-068-1-01

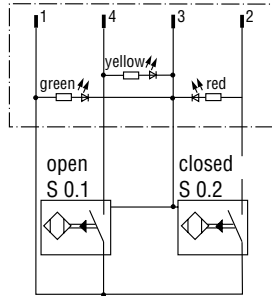
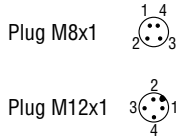
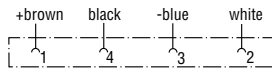
Clamp arm sets consists of clamp arm, links and screws.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight kg [lbs]
8JG-068-1-01	105°	105°	[0.66] 0,3

# 82L-3E ACCESSORIES

Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications

## Pin Assignment



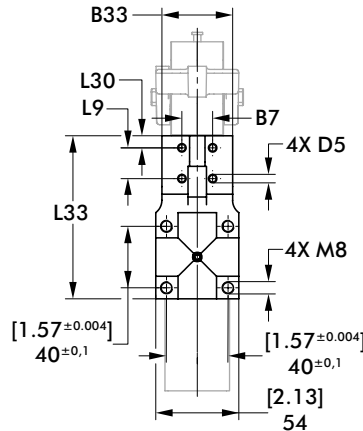
## Wiring diagram of electrical sensing system

Sensing system immune to interference from d.c. arc welding and a.c. arc welding

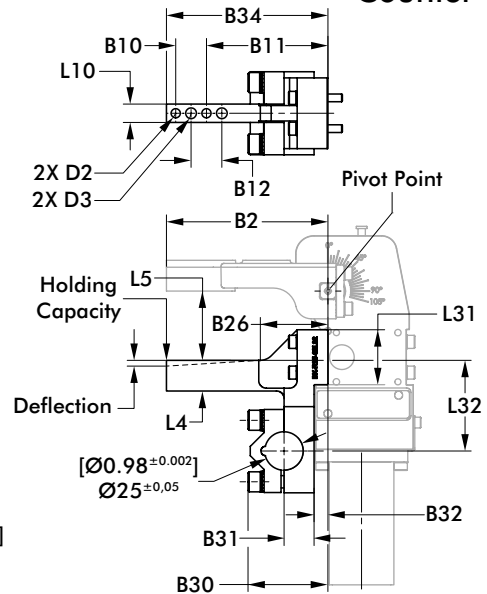
Inductive version: B8, B7, C8



View Counter-support without bracket and screws



## Counter-Support



\* = Tolerance for distance to dowel holes  $\pm 0,02$  [ $\pm 0,001$  in]  
 \*\* = distance from pivot point

Model	Fit for Model	Max. Holding Capacity N [lbf]	Deflection mm [in]	Weight kg [lbs]	B2	B7*	B10	B11	B12	B26**	B30**	B31**	B32**
					[3.66] 93	[0.98] 25	[2.44] 62	[1.65] 42	[2.17] 55	[1.24] 31,5	[0.43] 11		
BK-R25-82L25-1	82L-3E23..2...	[206] 914	[0.008] 0,2	[0.88] 0,4	[3.66] 93	[0.98] 25		[2.44] 62		[1.65] 42	[2.17] 55	[1.24] 31,5	[0.43] 11
BK-R25-82L32-1	82L-3E23..3...	[148] 660	[0.006] 0,16	[1.1] 0,5	[4.13] 105	[0.79] 20	[0.79] 20	[3.11] 79	[0.79] 20	[1.73] 44	[2.05] 52	[1.12] 28,5	[0.35] 9
BK-R25-82L40-1	82L-3E23..4...	[450] 2000	[0.015] 0,37	[1.23] 0,56	[4.33] 110	[0.98] 25		[3.31] 84		[1.61] 41			[0.30] 7,5

Model	B33	B34	D2	D3	D5	L4	L5	L9	L10	L30	L31	L32	L33
	[1.38] 35	[3.54] 90	[0.16] 4	[0.26] 6,5	[0.22] 5,5	[0.79] 20	[1.77] 45	[0.71] 18	[0.47] 12	[0.19] 4,95	[1.10] 27,9	[2.00] 50,9	[4.17] 106
BK-R25-82L25-1													
BK-R25-82L32-1	[1.81] 46	[4.13] 105	[0.24] 6	[0.28] 7				[0.79] 20		[0.31] 7,85	[1.41] 35,7	[2.32] 59	
BK-R25-82L40-1	[1.57] 40	[4.33] 110			[0.26] 6,6	[0.87] 22			[0.59] 15	[0.39] 9,85	[1.56] 39,7	[2.60] 66	[4.25] 108

# 82L-3E ACCESSORIES

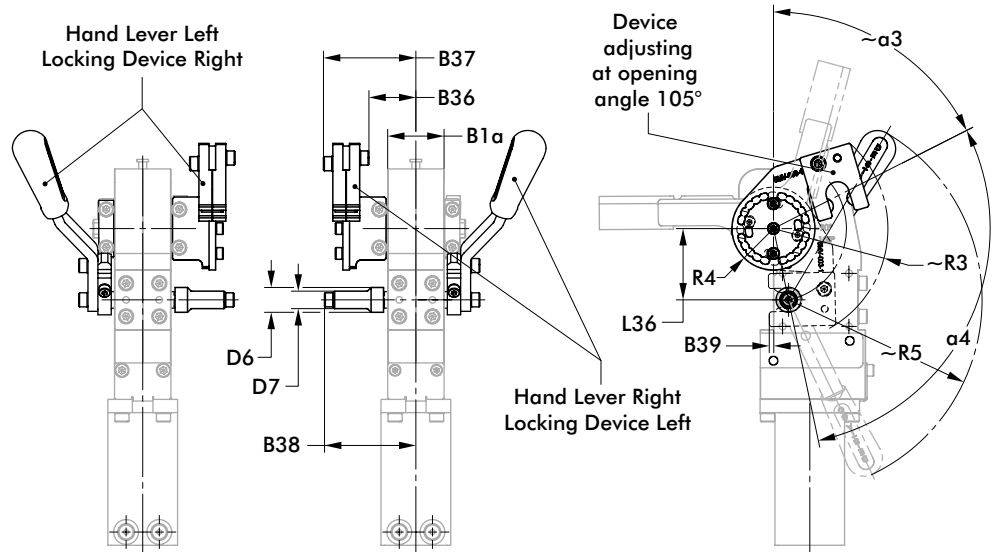
Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications

## Hold Open Device



Clamping position

Open position locked



Model	Fit for Model	B1 $\alpha$	B36	B37	B38	B39	D6	D7	L36	~R3	R4	~R5	~ $\alpha$ 3	$\alpha$ 4
82ZB-036-1	82L-3E23H.2...	[1.34]	[0.98] 25	[1.85] 47	[1.85] 47			[0.39] 10	[1.22] 31	[2.09] 53	[0.73] 18,5		64°	
82ZB-037-1	82L-3E23H.3...	34	[1.10] 28	[2.20] 56	[2.19] 55,5	[0.12] 3	[0.59] 15	[0.41] 10,5	[1.69] 43	[2.72] 69	[0.98] 25	[4.61] 117	63°	105°
82ZB-038-1	82L-3E23H.4...	[1.57] 40	[1.18] 30	[2.28] 58	[2.24] 57				[1.97] 50	[2.99] 76	[1.06] 27			



# 82L-3E ACCESSORIES

Enclosed Pneumatic Power Clamps | Lightweight Modular | Dimensions and Technical Specifications

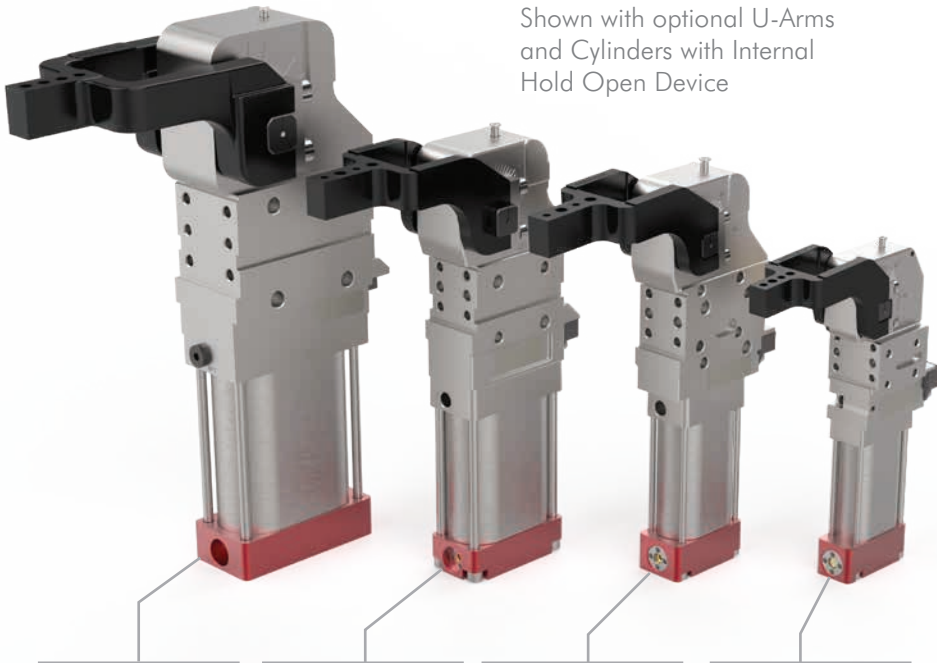
Clamping Arms		Order No. for Set 82L-3E23..2...	Order No. for Set 82L-3E23..3...	Order No. for Set 82L-3E23..4...						
U-Offset 90° Left/180° Right		8JG-647-3-01	--	--						
U-Offset 180° Left/90° Right		8JG-648-3-01	--	--						
U-central		8JG-075-3-01	8JG-065-2-01	8JG-067-2-01						
Lateral		--	8JG-066-1-01	8JG-068-1-01						
H-Shape		--	8JG-363-1-01	8JG-364-1-01						
Sensor Cables (1 Connector Socket & 5 m [16.4 ft] cable)										
Connector Socket M8x1 Straight 4-pin		8EL-009-1	8EL-009-1	8EL-009-1						
Connector Socket M8x1 Angular 4-pin		8EL-007-1	8EL-007-1	8EL-007-1						
Connector Socket M12x1 Straight 5-pin		8EL-002-1	8EL-002-1	8EL-002-1						
Connector Socket M12x1 Angular 4-pin		8EL-003-1	8EL-003-1	8EL-003-1						
Shim for Clamping Arm		Order No.	A1	A2	D2	D3	B9	B10	B12	L10
		82ZB-SH4001		[0.004] 0,1						
		82ZB-SH4002		[0.008] 0,2						
		82ZB-SH4005	[1.65] 42	[0.02] 0,5	[0.26] 6,5	[0.28] 7	[0.24] 6	[0.79] 20	[0.79] 20	[0.46] 11,8
		82ZB-SH4010		[0.04] 1,0						
		82ZB-SH4020		[0.08] 2,0						
		82ZB-SH4050		[0.20] 5,0						
Spare Parts		Order No. for Set		Order No. for Set		Order No. for Set				
		82L-3E23..25..	82L-3E23..2N..	82L-3E23..32..	82L-3E23..3N..	82L-3E23..40..	82L-3E23..4N..			
Cylinder		82L-3E000025	82L-3E00002N	82L-3E000032	82L-3E00003N	82L-3E000040	82L-3E00004N			
Sensor Kit										
C8 Connector Plug, with In-Line M8x1		8EA-174-1-B		8EA-177-1-B						
B7 Connector Plug, with In-Line M12x1		8EA-175-1-B		8EA-178-1-B						
B8 Connector Plug, M12x1 with Cable		8EA-176-1-B		8EA-179-1-B						
Spare Parts		Order No. for Set		Order No. for Set		Order No. for Set				
		82L-3E23H02...	82L-3E23HG2...	82L-3E23H03...	82L-3E23HG3...	82L-3E23H04...	82L-3E23HG4...			
Hand Lever		8KB-031-1	8KB-091-1	8KB-031-1	8KB-091-1	8KB-032-1	8KB-092-1			

# 82M AND TCC

Enclosed Pneumatic Power Clamps | Heavy-Duty, Tolerance Compensation | Product Overview

## 82M Series Enclosed Power Clamp

Shown with optional U-Arms and Cylinders with Internal Hold Open Device



"B" Front Mount available for 82M and TCC size 40mm

Same mounting pattern as size 50 and 63mm



NAAMS Lateral Mounting available on 82M and TCC in addition to narrow, wide and NAAMS Clamp Arm Shafts

**80mm**

Max Holding Torque  
3000 Nm  
Max Clamping Torque  
850 Nm at 5bar

**63mm**

Max Holding Torque  
1800 Nm  
Max Clamping Torque  
420 Nm at 5bar

**50mm**

Max Holding Torque  
1300 Nm  
Max Clamping Torque  
270 Nm at 5bar

**40mm**

Max Holding Torque  
380 Nm  
Max Clamping Torque  
120 Nm at 5bar

## TCC Tolerance Compensating Power Clamp

Shown with optional U-Arms and Cylinders with Internal Hold Open Device



**63mm**

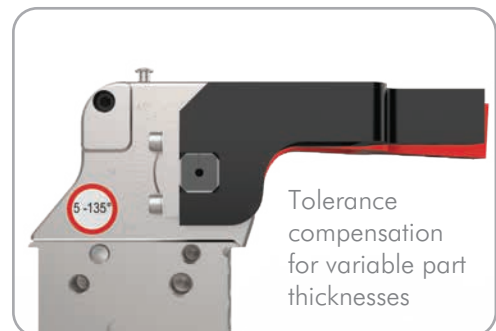
Max Holding Torque  
295 Nm  
Max Clamping Torque  
295 Nm at 5bar

**50mm**

Max Holding Torque  
175 Nm  
Max Clamping Torque  
175 Nm at 5bar

**40mm**

Max Holding Torque  
85 Nm  
Max Clamping Torque  
85 Nm at 5bar



Tolerance compensation for variable part thicknesses

- Tolerance compensation for variable sheet metal thicknesses within three degrees of arm movement
- There is no need for shimming

### Adjusting the Arm Opening Angle

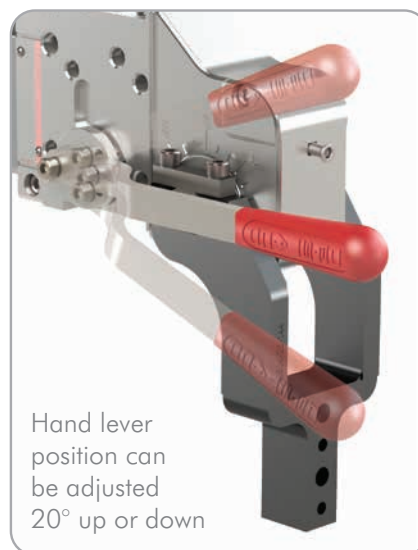


Easily adjust arm opening angle with an M5 Allen wrench.

- Move clamp arm to full open position.
- Using Allen wrench, release mechanism (leave Allen wrench in place).
- Move clamp arm to desired opening.
- Tighten to 10-15 Nm.

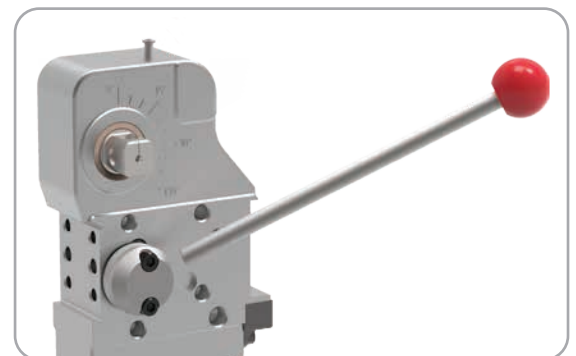
### Enclosed Power Clamp Hand Lever (82M-3E Models Only)

#### Standard Adjustable Hand Lever



- Hand lever position is adjustable for improved ergonomics
- Handle can be mounted on the left or right side

#### Weldable Hand Lever



- Hand lever can be welded into a permanent position.
- Handle can be mounted on the left or right side

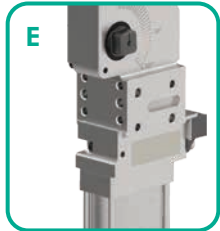
# TCC-2

## Enclosed Pneumatic Power Clamps | Heavy-Duty, Tolerance Compensation | Ordering Information

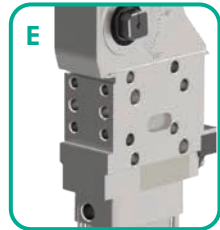
TCC-2 E 03 00 6A L8

Mounting	Description	Clamp Arm Shaft	Description	Hand Lever	Description
E	Standard Mounting	03	for U-Arms	00	No Hand lever
B	Common Front Mount for Size 40 only (same mount pattern as size 50 & 63)	23	for Lateral Arms		
N	NAAMS Side Mounting for Size 63 only	See below for further details			

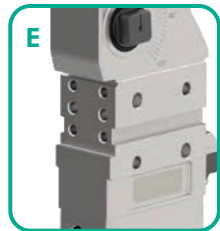
### Mounting



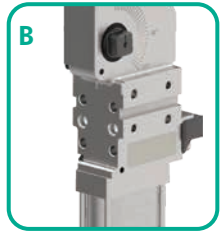
Size 40



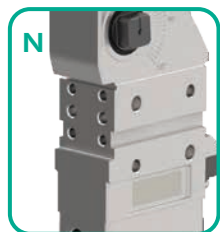
Size 50



Size 63



Size 40 Only

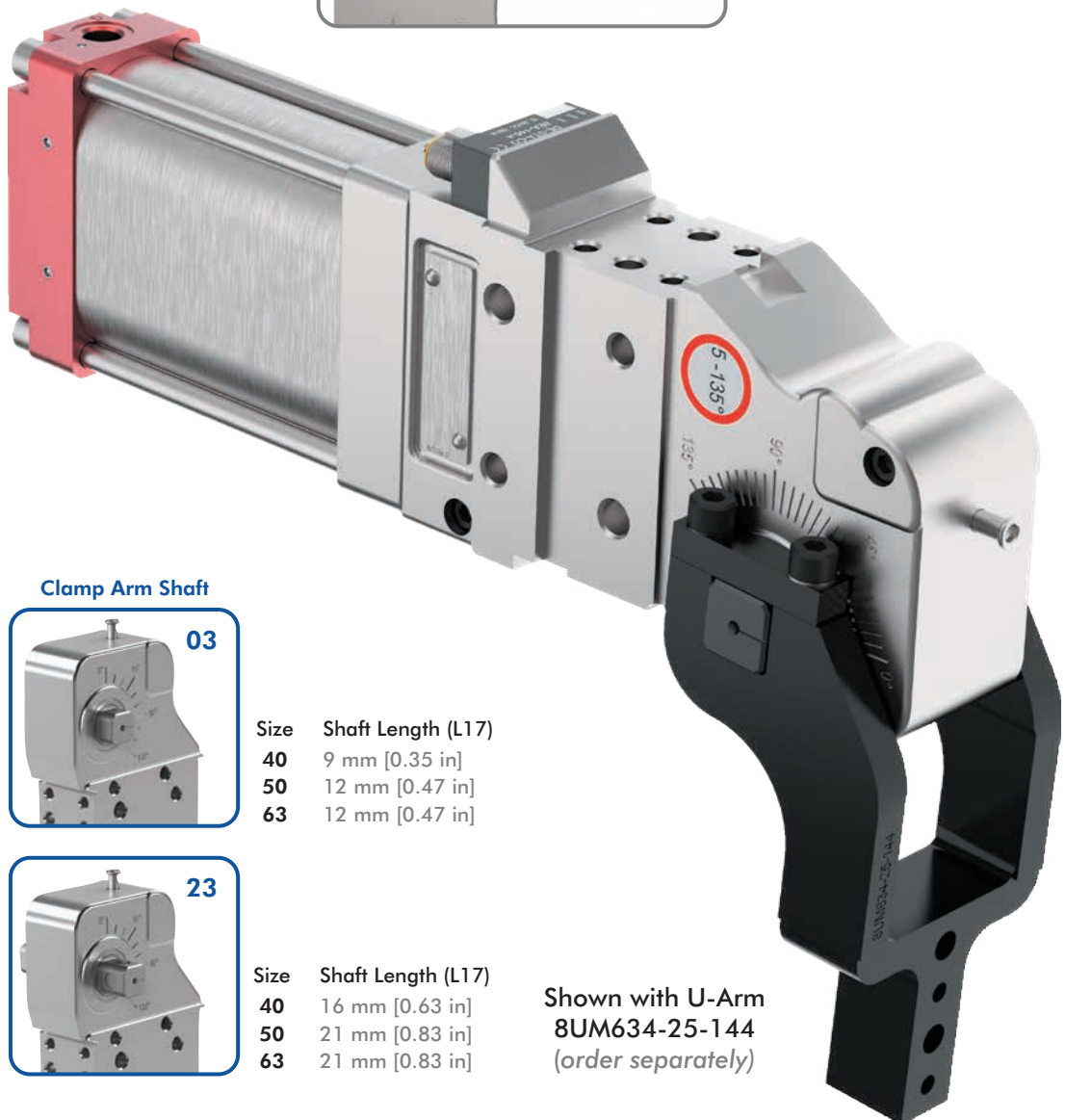


Size 63 Only



Tolerance compensation for variable part thicknesses

- Tolerance compensation for variable sheet metal thicknesses within three degrees of arm movement
- There is no need for shimming



### Clamp Arm Shaft



03

Size	Shaft Length (L17)
40	9 mm [0.35 in]
50	12 mm [0.47 in]
63	12 mm [0.47 in]



23

Size	Shaft Length (L17)
40	16 mm [0.63 in]
50	21 mm [0.83 in]
63	21 mm [0.83 in]

Shown with U-Arm  
8UM634-25-144  
(order separately)

## Enclosed Pneumatic Power Clamps | Heavy-Duty, Tolerance Compensation | Ordering Information

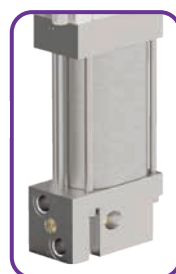
Sensor	Description
00	Without Sensing System
L8*	PNP Sensor with In-line M12x1 Connector (8EA-146-4-B)
N8*	NPN Sensor with In-line M12x1 Connector (8EA-154-4-B)
L9	PNP Sensor with 90° M12x1 Connector (8EA-147-4-B)
N9	NPN Sensor with 90° M12x1 Connector (8EA-155-4-B)
K8	PNP Sensor with M12x1 Cable Connector (8EA-158-4-B)
K9	NPN Sensor with M12x1 Cable Connector (8EA-167-4-B)

\*Not available for use with 4V, 5V, 6V cylinder option.  
See page 69 for replacement sensor kits and components.



### Cylinder (Standard)

- 40 40 mm Cylinder (G1/8 Port)
- 50 50 mm Cylinder (G1/4 Port)
- 5N 50 mm Cylinder (1/4-18 NPT Port)
- 63 63 mm Cylinder (G1/4 Port)
- 6N 63 mm Cylinder (1/4-18 NPT Port)



### Cylinder with Unlockable Return Valve

- 4C 40 mm Cylinder (G1/8 Port)
- 5C 50 mm Cylinder (G1/4 Port)
- 5D 50 mm Cylinder (1/4-18 NPT Port)
- 6C 63 mm Cylinder (G1/4 Port)
- 6D 63 mm Cylinder (1/4-18 NPT Port)



### Cylinder with Internal Hold Open Device

- 4A 40 mm Cylinder (G1/8 Port)
- 5A 50 mm Cylinder (G1/4 Port)
- 5B 50 mm Cylinder (1/4-18 NPT Port)
- 6A 63 mm Cylinder (G1/4 Port)
- 6B 63 mm Cylinder (1/4-18 NPT Port)



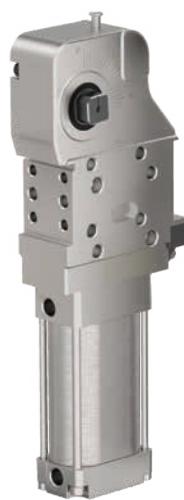
### Cylinder with Piston Rod Locking Device

- 4V 40 mm Cylinder (G1/8 Port)
- 5V 50 mm Cylinder (G1/4 Port)
- 6V 63 mm Cylinder (G1/4 Port)



40

Max Holding/  
Clamping Torque  
85 Nm [62.7 ft-lb]  
at 5 bar [72 psi]



50

Max Holding/  
Clamping Torque  
175 Nm [129 ft-lb]  
at 5 bar [72 psi]



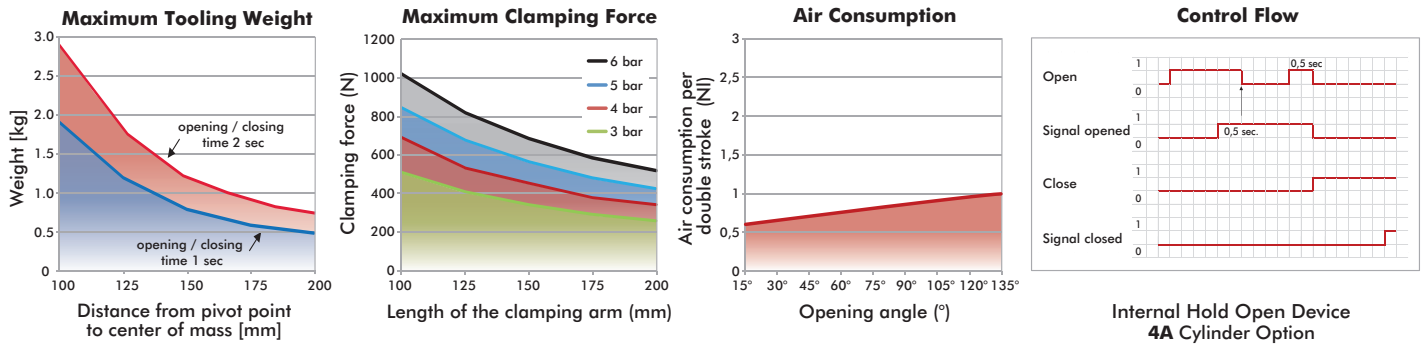
63

Max Holding/  
Clamping Torque  
295 Nm [217.6 ft-lb]  
at 5 bar [72 psi]

# TCC-2

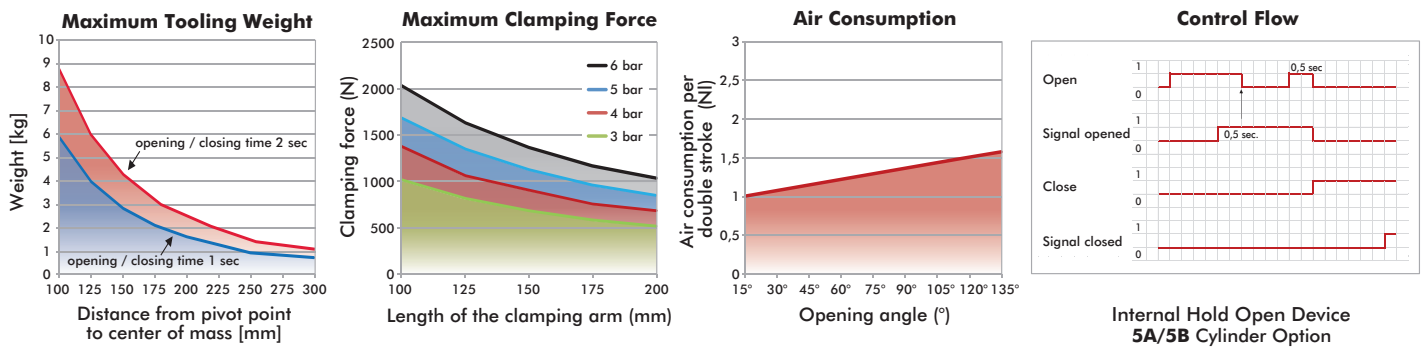
## Enclosed Pneumatic Power Clamps | Heavy-Duty, Tolerance Compensation | Technical Specifications

Model	Max. Holding Torque (Nm)	Clamping Torque at 5 bar (Nm)	Cylinder Ø (mm)	Weight (kg)	Air Consumption per double stroke at 5 bar (liter)
TCC-2.....40..	85	85	40	1,6	0,9
TCC-2.....4A..					
TCC-2.....4B..					
TCC-2.....4C..				1,7	
TCC-2.....4V..				1,6	



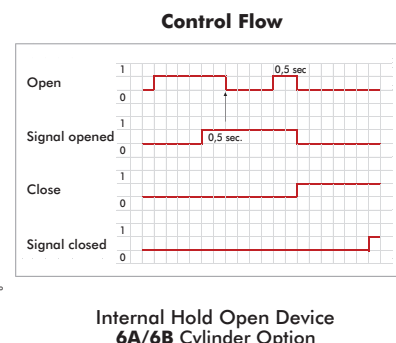
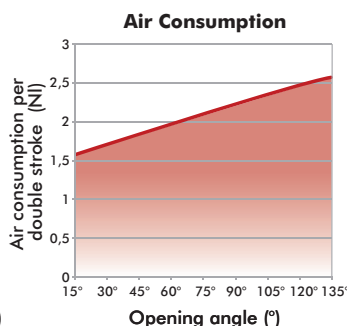
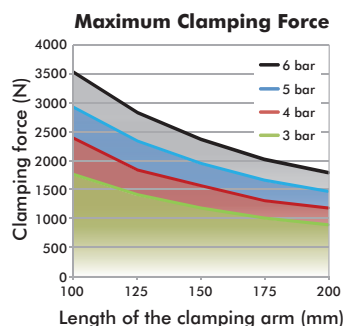
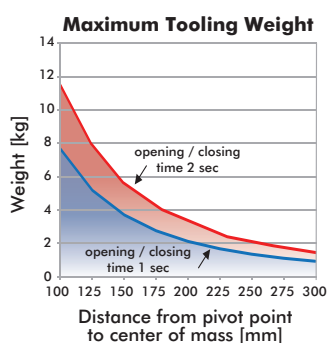
ATTENTION: Calculation tool available. Please consult factory.

Model	Max. Holding Torque (Nm)	Clamping Torque at 5 bar (Nm)	Cylinder Ø (mm)	Weight (kg)	Air Consumption per double stroke at 5 bar (liter)
TCC-2E....50..	175	175	50	2,8	1,6
TCC-2E....5N..					
TCC-2E....5A..					
TCC-2E....5B..					
TCC-2E....5C..				3,0	
TCC-2E....5D..				2,9	
TCC-2E....5V..					



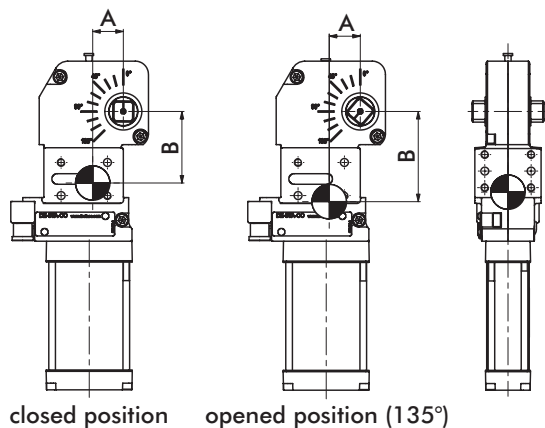
ATTENTION: Calculation tool available. Please consult factory.

Model	Max. Holding Torque (Nm)	Clamping Torque at 5 bar (Nm)	Cylinder Ø (mm)	Weight (kg)	Air Consumption per double stroke at 5 bar (liter)
TCC-2.....63..	295	295	63	3,8	2,6
TCC-2.....6N..				4,0	
TCC-2.....6A..					
TCC-2.....6B..					
TCC-2.....6C..					
TCC-2.....6D..					
TCC-2.....6V..	4,2				



ATTENTION: Calculation tool available. Please consult factory.

### Center of Mass



Model	A		B		Weight
	Closed	Open	Closed	Open	
TCC-2E...40..	23	24	55	69	1,5
TCC-2B...40..	24		54	68	
TCC-2E...4A..	22			86	1,6
TCC-2B...4A..	23	23	72	85	
TCC-2E...4C..	25			89	1,7
TCC-2B...4C..	26	26	76	88	
TCC-2E...4V..	24			80	1,6
TCC-2B...4V..	24	24	66	79	
TCC-2E...50..				87	2,6
TCC-2E...5N..	24	25	70		
TCC-2E...5A..				99	2,8
TCC-2E...5B..			83		
TCC-2E...5C..	27			110	3,0
TCC-2E...5D..	27	27	96		
TCC-2E...5V..	25			99	2,9
TCC-2.....63..			84		
TCC-2.....6N..				105	3,7
TCC-2.....6A..	27	28	89		
TCC-2.....6B..				114	3,9
TCC-2.....6C..			98		
TCC-2.....6D..	30			130	4,4
TCC-2.....6V..	30	30	116		
TCC-2.....6V..	28			119	3,9
	28	28	103		

# 82M-3

## Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Ordering Information

82M-3

E

23

H0

50

L8

Mounting	Description
<b>E</b>	Standard Mounting
<b>B</b>	Common Front Mount for Size 40 only (same mount pattern as size 50 & 63)
<b>N</b>	NAAMS Side Mounting for Size 40 & 63 only

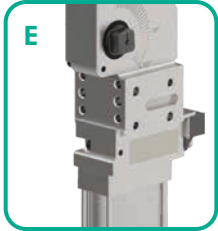
Clamp Arm Shaft	Description
<b>03</b>	for U-Arms
<b>13</b>	for U-Arms (required for 40 NAAMS <b>N</b> only)
<b>23</b>	for Lateral Arms
<b>D0</b>	for Lateral Arms (size 63 NAAMS <b>N</b> only)

Hand Lever	Description
<b>00</b>	No Hand lever
<b>H0</b>	Hand Lever
<b>HS</b>	Weldable

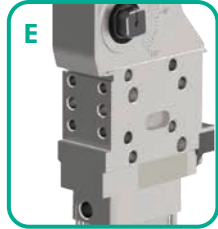
See below for further details

See below for further details

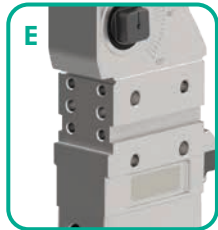
### Mounting



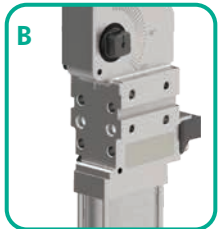
Size 40



Size 50



Size 63/80



Size 40 Only



Size 40/63 Only

### Clamp Arm Shaft



03

Size	Shaft Length (L17)
40	9 mm [0.35 in]
50	12 mm [0.47 in]
63	12 mm [0.47 in]



13

Size	Shaft Length
40	9 mm [0.35 in]



23/D0

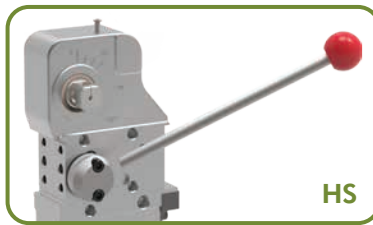
Size	Shaft Length (L17)
40	16 mm [0.63 in]
50	21 mm [0.83 in]
63	21 mm [0.83 in]
80	32 mm [1.26 in]

Size	Shaft Length (L17)
63	26 mm [1.02 in]

### Hand Lever

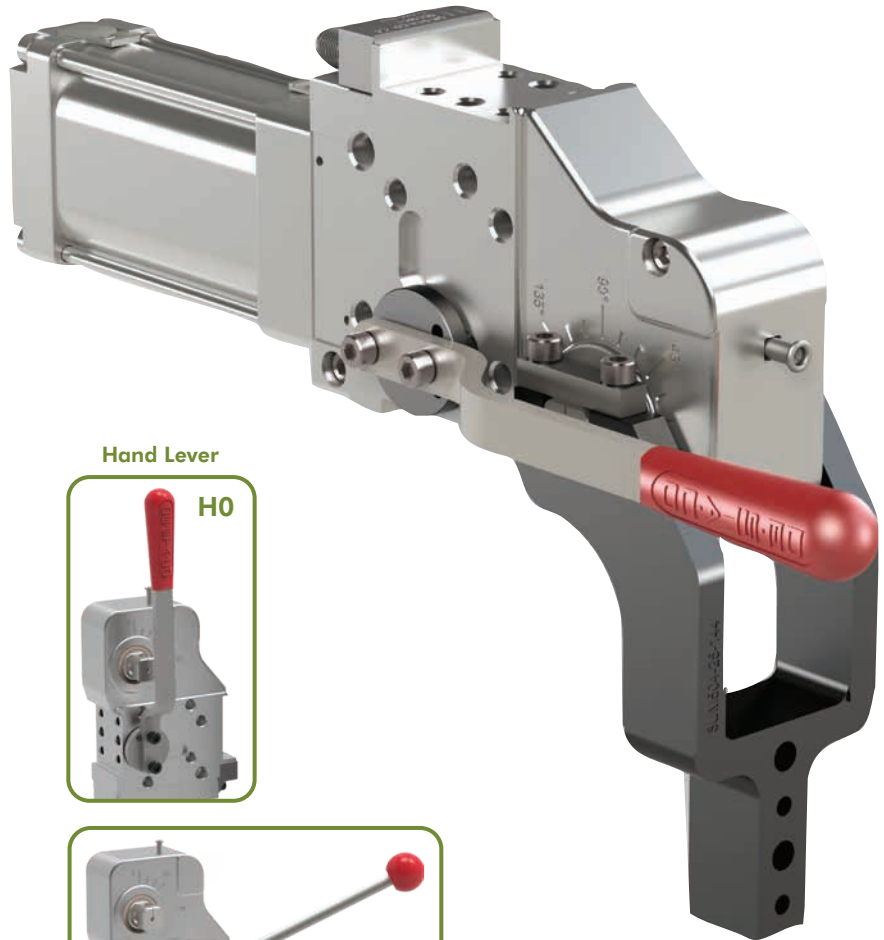


H0



HS

Hand Lever	Description
<b>00</b>	No Hand Lever
<b>H0</b>	Standard Hand Lever (not compatible with cylinder options *A, *B)
<b>HS</b>	Weldable Hand Lever (not compatible with cylinder options *A, *B)



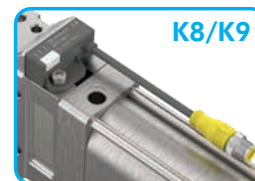
Shown with U-Arm  
8UM504-25-144  
(order separately)



## Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Ordering Information

Sensor	Description
00	Without Sensing System
L8	PNP Sensor with In-line M12x1 Connector (8EA-146-4-B)
N8	NPN Sensor with In-line M12x1 Connector (8EA-154-4-B)
L9	PNP Sensor with 90° M12x1 Connector (8EA-147-4-B)
N9	NPN Sensor with 90° M12x1 Connector (8EA-155-4-B)
K8	PNP Sensor with M12x1 Cable Connector (8EA-158-4-B)
K9	NPN Sensor with M12x1 Cable Connector (8EA-167-4-B)

See page 69 for replacement sensor kits and components.



### Cylinder - Standard

- 40** 40 mm Cylinder (G1/8 Port)
- 50** 50 mm Cylinder (G1/4 Port)
- 5N** 50 mm Cylinder (1/4-18 NPT Port)
- 63** 63 mm Cylinder (G1/4 Port)
- 6N** 63 mm Cylinder (1/4-18 NPT Port)
- 80** 80 mm Cylinder (G1/4 Port)
- 8N** 80 mm Cylinder (1/4-18 NPT Port)



### Cylinder with Internal Hold Open Device

- 4A** 40 mm Cylinder (G1/8 Port)
- 5A** 50 mm Cylinder (G1/4 Port)
- 5B** 50 mm Cylinder (1/4-18 NPT Port)
- 6A** 63 mm Cylinder (G1/4 Port)
- 6B** 63 mm Cylinder (1/4-18 NPT Port)
- 8A** 80 mm Cylinder (G1/4 Port)
- 8B** 80 mm Cylinder (1/4-18 NPT Port)



**40**

Max Holding Torque  
380 Nm [280 ft-lb]  
Max Clamping Torque  
120 Nm [89 ft-lb]  
at 5 bar [72 psi]

**50**

Max Holding Torque  
1300 Nm [959 ft-lb]  
Max Clamping Torque  
270 Nm [199 ft-lb]  
at 5 bar [72 psi]

**63**

Max Holding Torque  
1800 Nm [1328 ft-lb]  
Max Clamping Torque  
420 Nm [310 ft-lb]  
at 5 bar [72 psi]

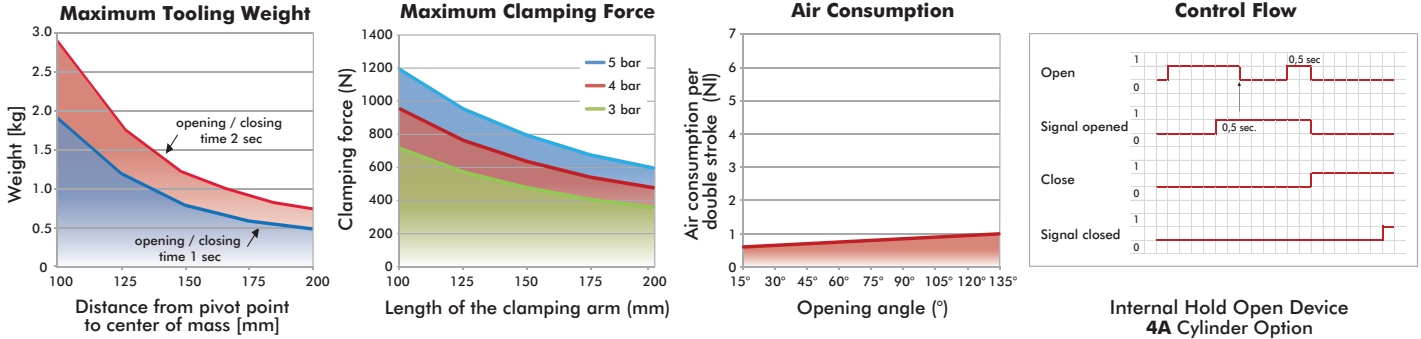
**80**

Max Holding Torque  
3000 Nm [2213 ft-lb]  
Max Clamping Torque  
850 Nm [627 ft-lb]  
at 5 bar [72 psi]

# 82M-3

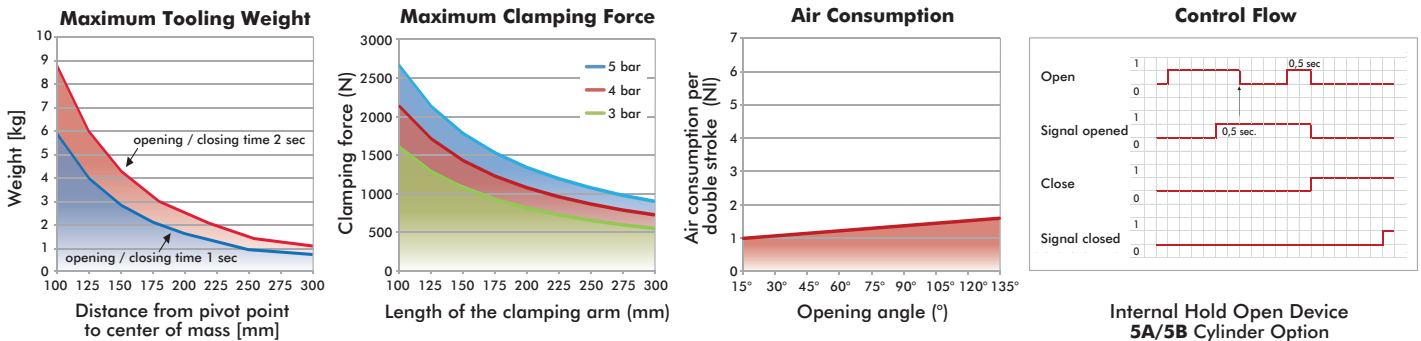
## Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Technical Specifications

Model	Max. Holding Torque (Nm)	Clamping Torque at 5 bar (Nm)	Cylinder Ø (mm)	Weight (kg)	Air Consumption per double stroke at 5 bar (liter)
82M-3E...4...	380	120	40	1,5	0,9
82M-3B...4...					
82M-3N...4...					



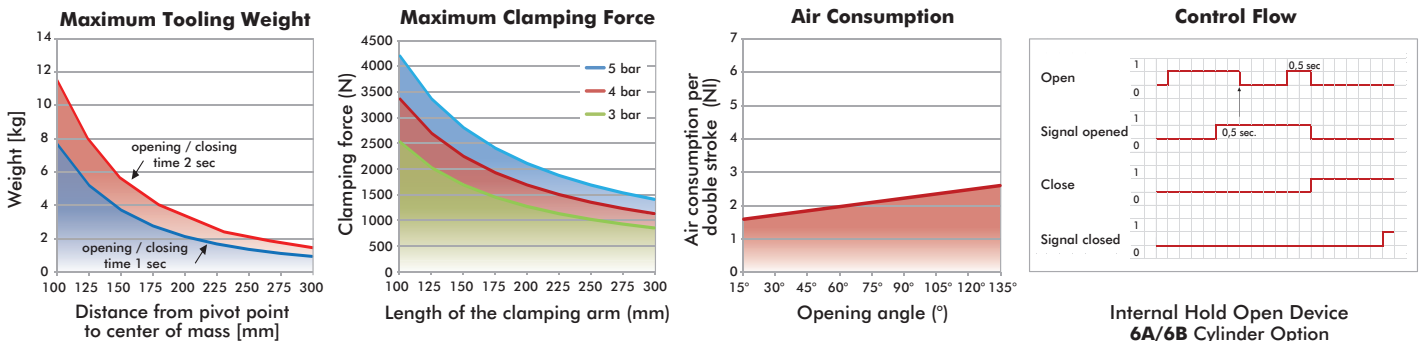
ATTENTION: Calculation tool available. Please consult factory.

Model	Max. Holding Torque (Nm)	Clamping Torque at 5 bar (Nm)	Cylinder Ø (mm)	Weight (kg)	Air Consumption per double stroke at 5 bar (liter)
82M-3E...5...	1300	270	50	2,8	1,6



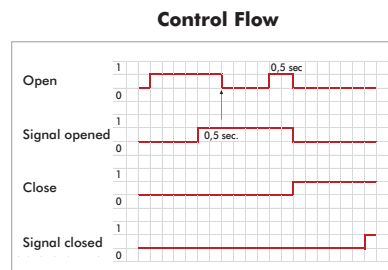
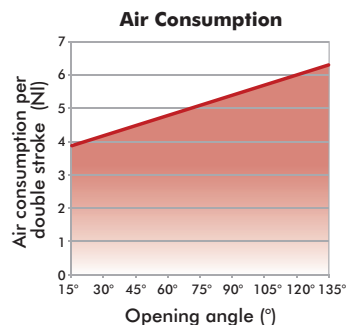
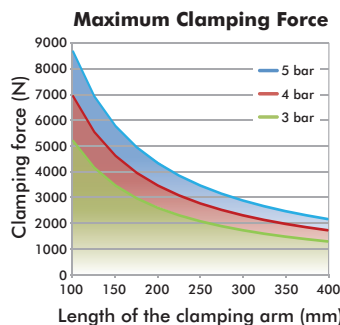
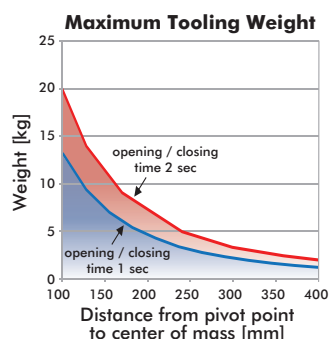
ATTENTION: Calculation tool available. Please consult factory.

Model	Max. Holding Torque (Nm)	Clamping Torque at 5 bar (Nm)	Cylinder Ø (mm)	Weight (kg)	Air Consumption per double stroke at 5 bar (liter)
82M-3E...6...	1800	420	63	3,8	2,6
82M-3N...6...					



ATTENTION: Calculation tool available. Please consult factory.

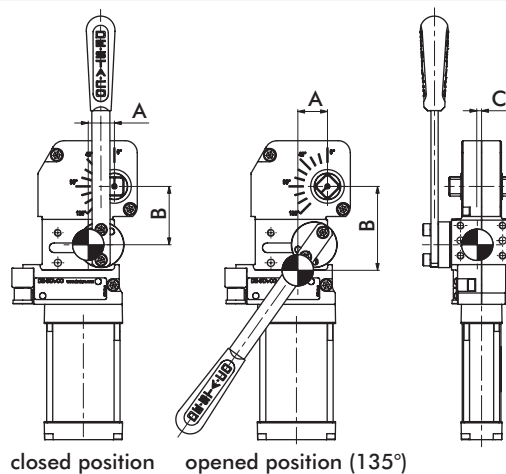
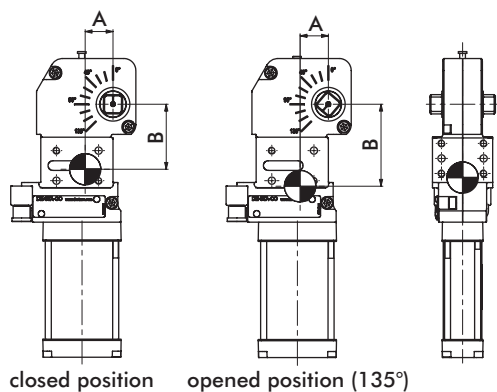
Model	Max. Holding Torque (Nm)	Clamping Torque at 5 bar (Nm)	Cylinder Ø (mm)	Weight (kg)	Air Consumption per double stroke at 5 bar (liter)
82M-3E...80..	3000	850	80	8,7	6,3
82M-3E...8N..				8,8	
82M-3E...8A..					
82M-3E...8B..					



Internal Hold Open Device  
8A/8B Cylinder Option

ATTENTION: Calculation tool available. Please consult factory.

### Center of Mass



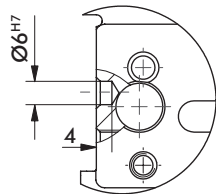
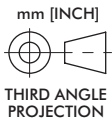
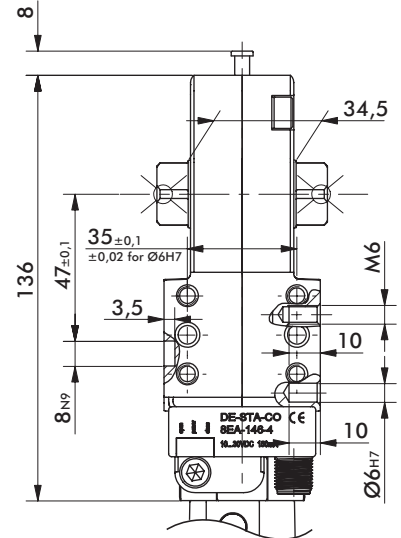
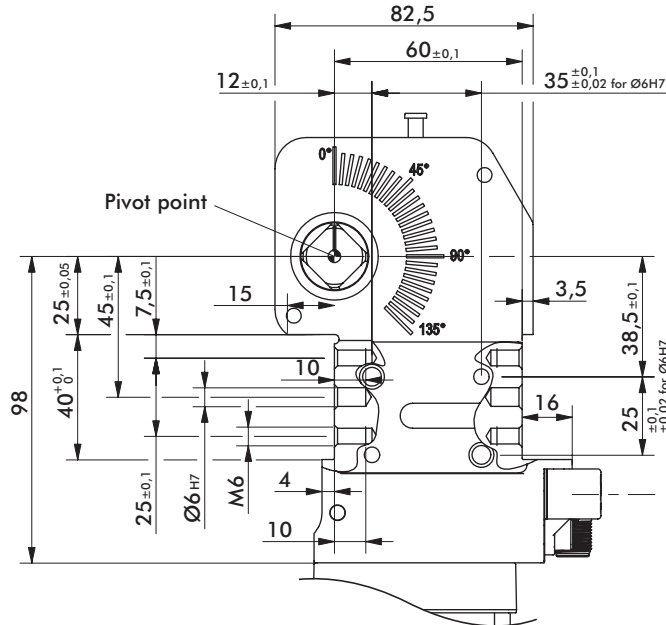
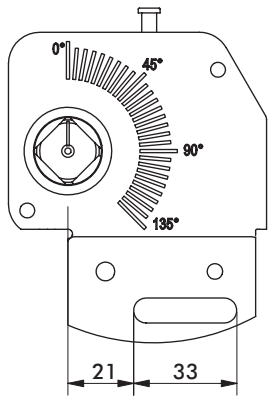
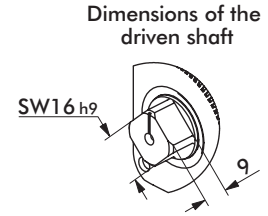
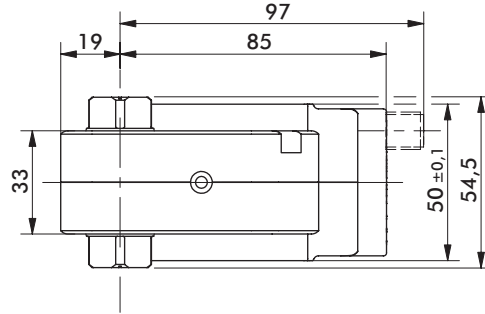
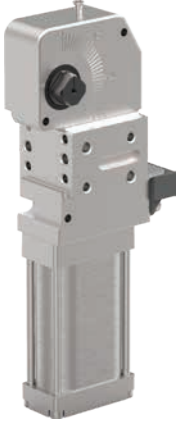
Model	Without Handle				Weight
	A		B		
	Closed	Open	Closed	Open	
82M-3E...40..	23	24	55	69	1,5
82M-3N...40..			54	68	
82M-3B...40..	24	23	72	85	1,6
82M-3E...4A..	22		86		
82M-3B...4A..	23	25	70	87	2,8
82M-3E...50..	24		83	99	
82M-3E...5N..	27	28	88	103	3,8
82M-3E...5A..			83	99	
82M-3E...5B..	27	28	98	114	3,9
82M-3...63..			88	103	
82M-3...6N..	36	37	98	123	8,7
82M-3...6A..			98	114	
82M-3...6B..	36	37	104	129	8,9
82M-3E...80..			98	123	
82M-3E...8N..	36	37	104	129	8,9
82M-3E...8A..					
82M-3E...8B..					

Model	With Handle				C	Weight
	A		B			
	Closed	Open	Closed	Open		
82M-3E...40..	22	25	49	70	4	1,6
82M-3B...40..	24	27	46	67		
82M-3E...50..	23	30	62	85	3	3,1
82M-3E...5N..			62	85		
82M-3...63..	26	30	80	102	2	9,2
82M-3...6N..			80	102		
82M-3E...80..	35	38	93	122	2	9,2
82M-3E...8N..						
82M-3E...8A..						

# 82M-3N13, 40MM

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions

82M-3N13..40..



with Handle Option  
82M-3N13H\*40\*\*

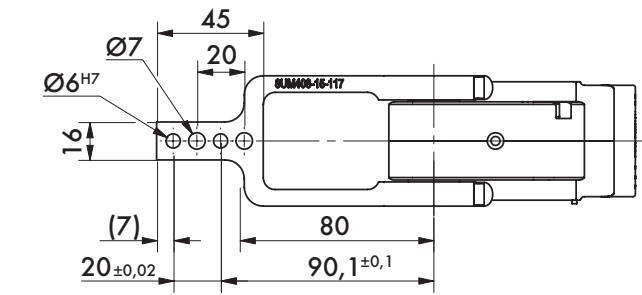
See page PC-PPC-40 for  
cylinder options 40 and 4A.

Power by compressed air, max. 6 bar operation with oil-free air is permissible.  
The connector socket and the cable are not supplied with the unit.

# 82M-3N13, 40MM ACCESSORIES

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

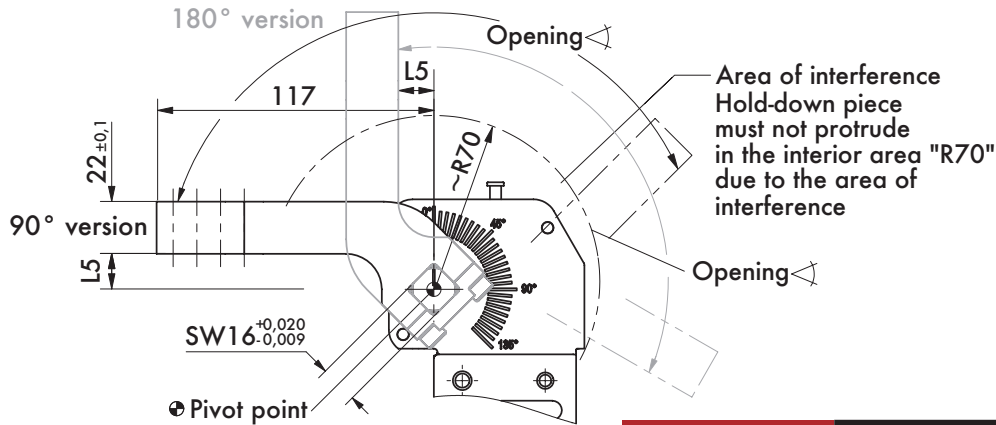
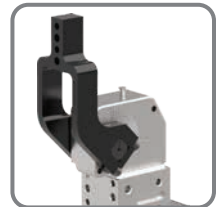
For Size 40mm NAAMS\*  
U-Arm (Steel)



90° Right



180° Right



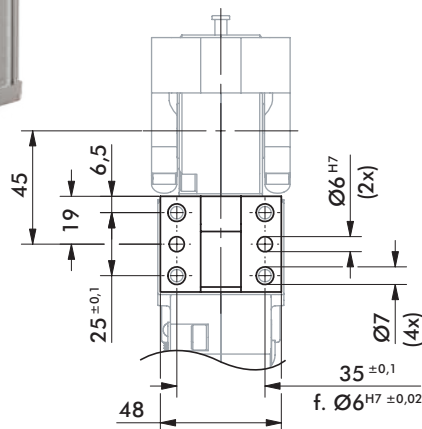
8UM48-00-117  
8UM48-15-117  
8UM48-25-117  
8UM48-45-117

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	L5
8UM48-00-117		105°	0,46	0
8UM48-15-117	135°	120°	0,51	15
8UM48-25-117		135°	0,52	25
8UM48-45-117	130°		0,58	45

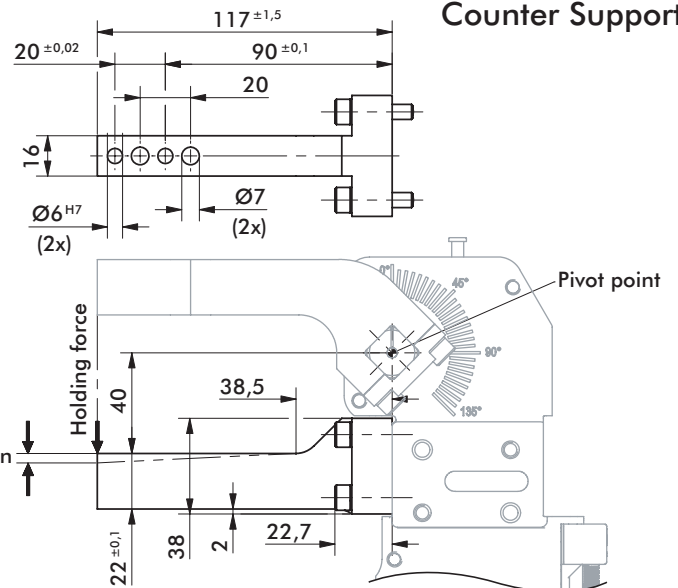
\*Compatible with NAAMS Clamp Arm Shaft option 13 only.



View:  
Counter support  
without screws and pins



Counter Support



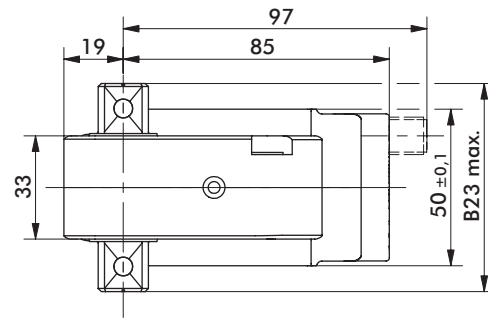
Arm Model No.	Holding Force (N)	Deformation (mm)	Weight (kg)
82ZB-190-1	2000	0,4	0,22

For Handle and Anti-Ramming device Accessories see pages PC-PPC-47 & 48.

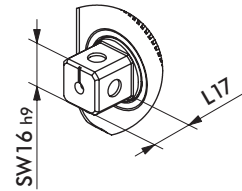
# 82M-3./TCC-2, 40MM

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions

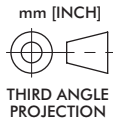
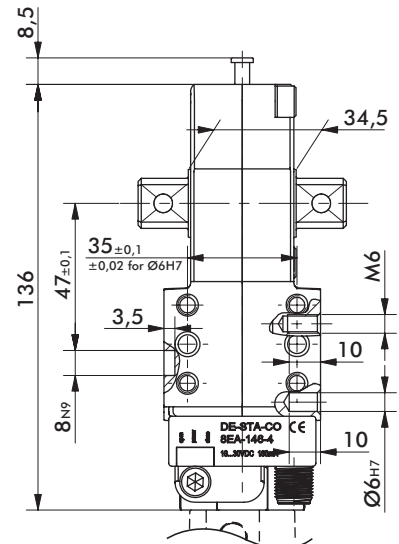
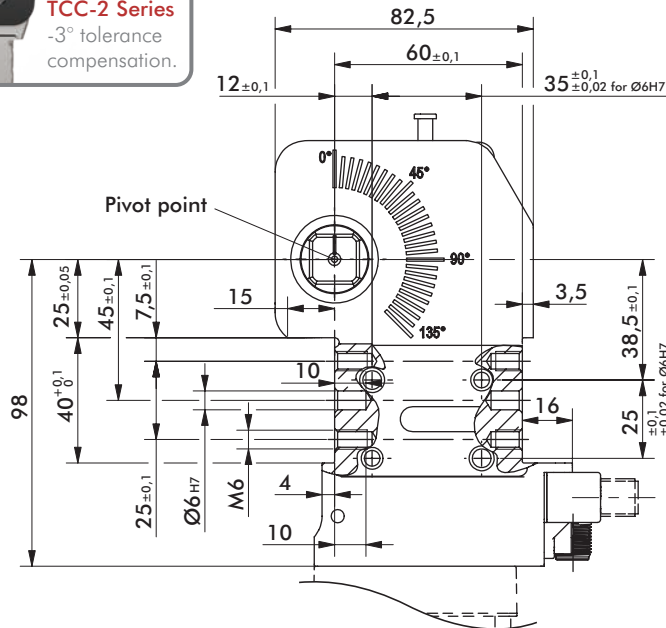
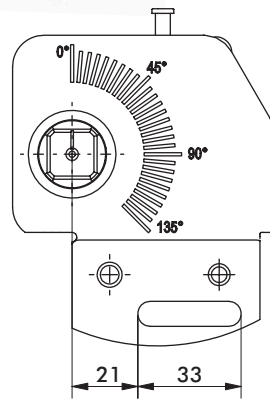
## 82M-3E/TCC-2E...4.



Dimensions of the driven shaft



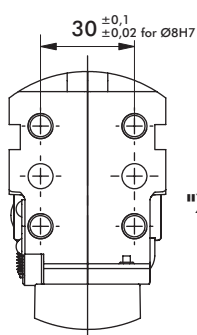
Model	B23 Max.	L17
82M-3.03/TCC-2.03..4...	54,5	9
82M-3.23/TCC-2.23..4...	66,5	16



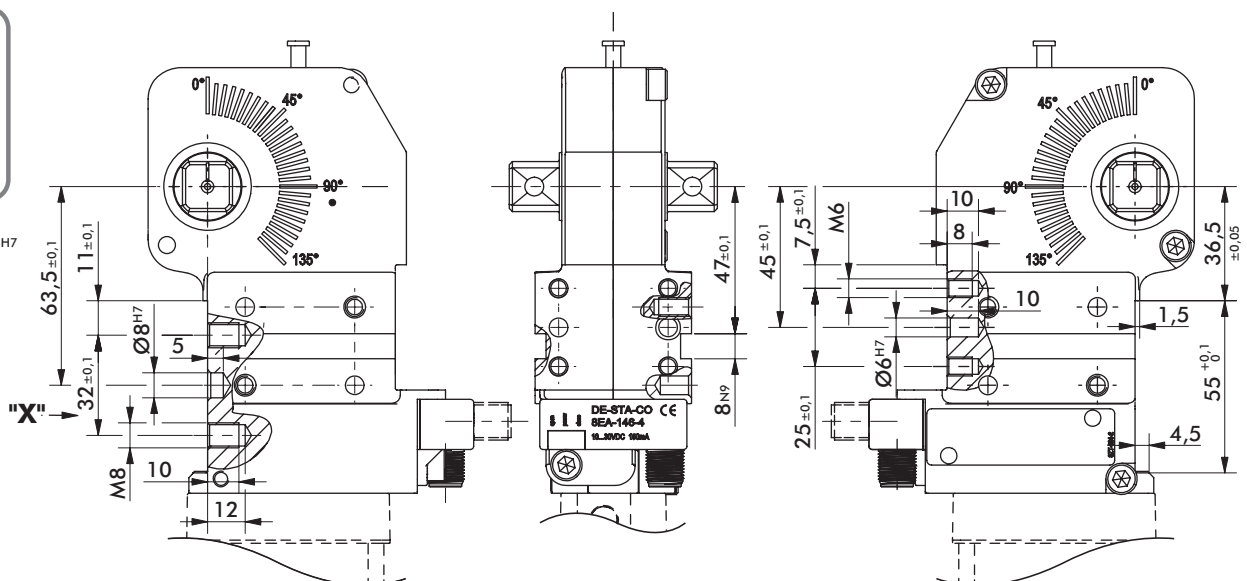
Power by compressed air, max. 6 bar operation with oil-free air is permissible. The connector socket and the cable are not supplied with the unit. Safe "holding/clamping" only under pressurization (for TCC models only).

## 82M-3B/TCC-2B...4.

Dimensions below for "B" mounting surfaces. See above for additional base unit dimensions.



View "X"

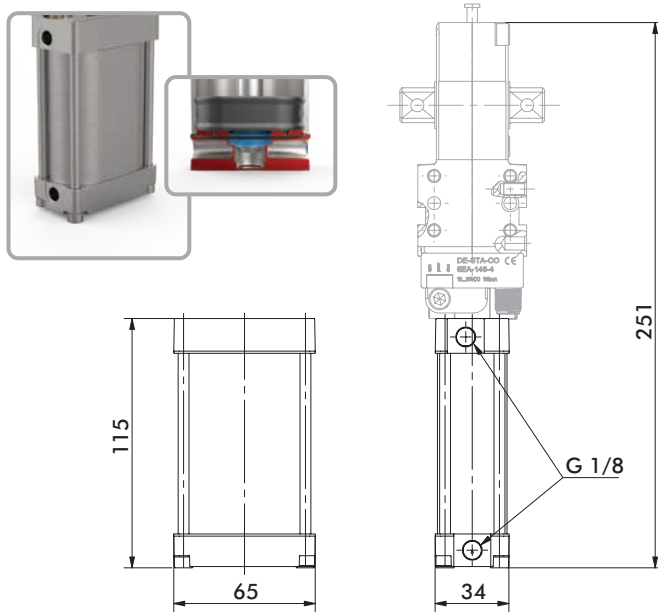


# 82M-3./TCC-2, 40MM

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Cylinder Options Dimensions

## 82M-3/TCC-2.....40

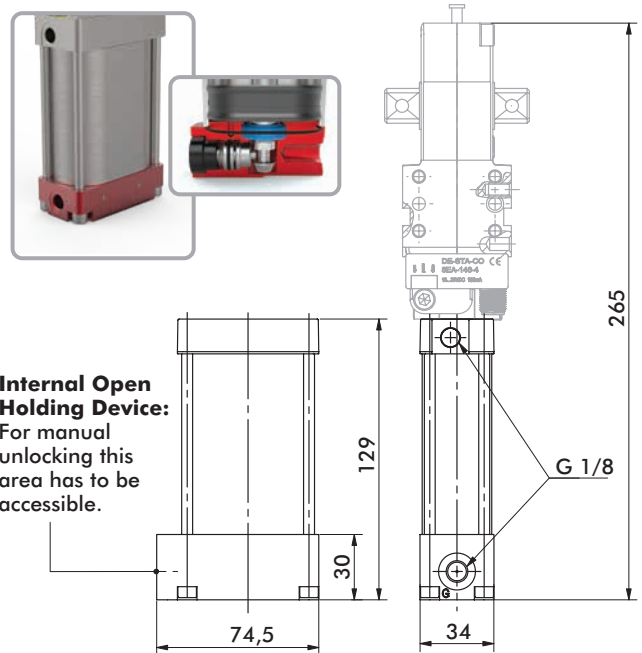
Standard Cylinder



## 82M-3/TCC-2.....4A

Cylinder with Internal Hold Open Device

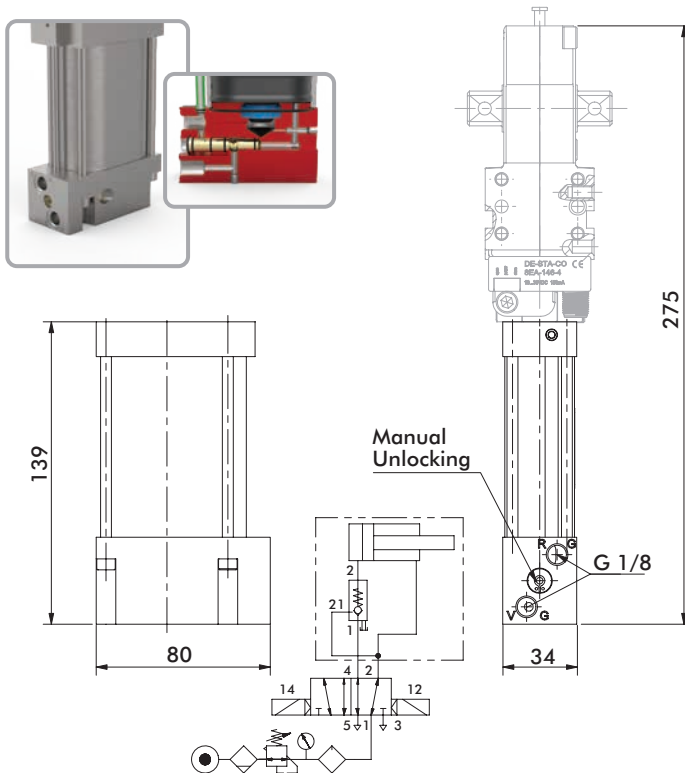
Securely holds clamp in the open position.



## TCC-2.....4C

Cylinder with Unlock-able Return Valve

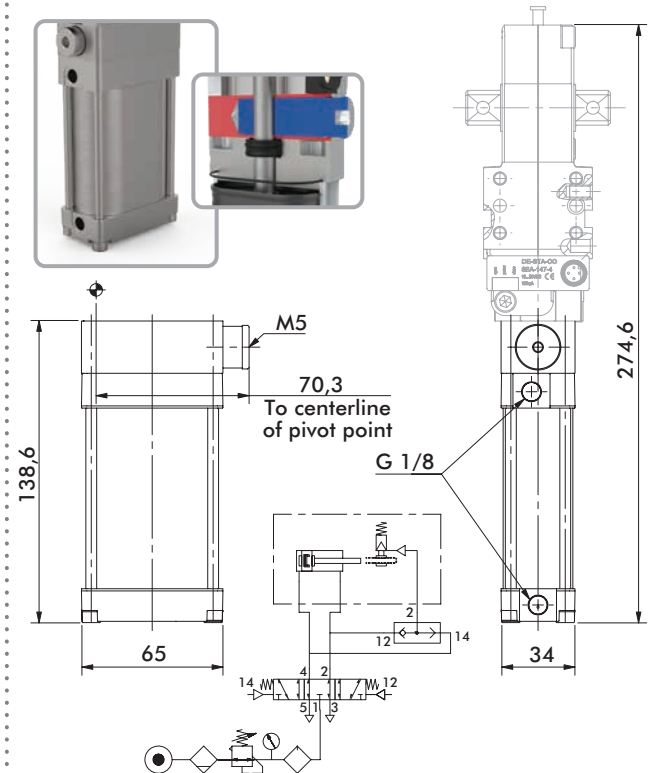
Pneumatically holds clamp arm in the closed position when air is released.



## TCC-2.....4V

Cylinder with Rod Locking Device

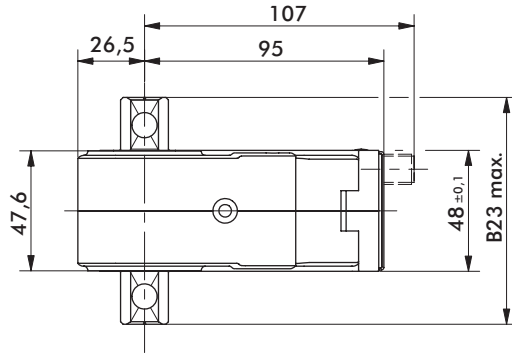
Uses friction to clamp rod at any point between open and closed positions.



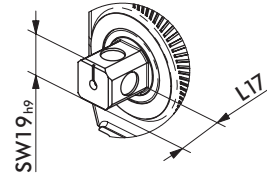
# 82M-3/TCC-2, 50MM

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions

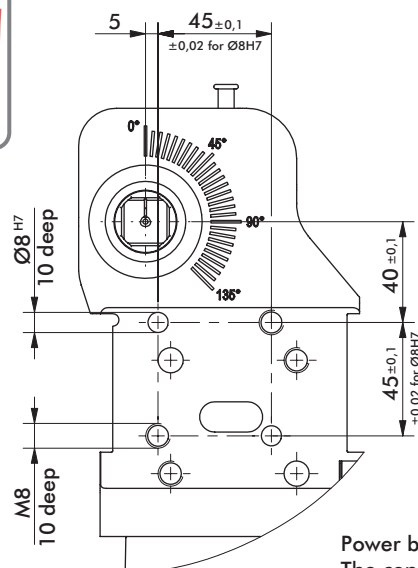
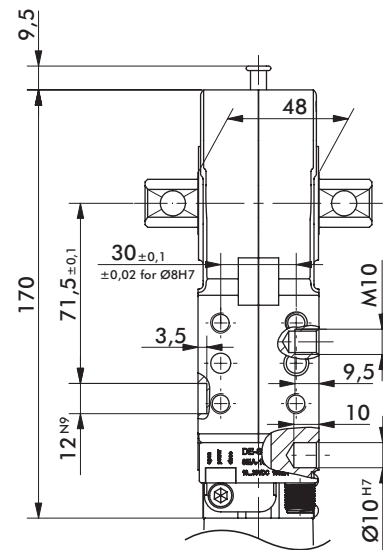
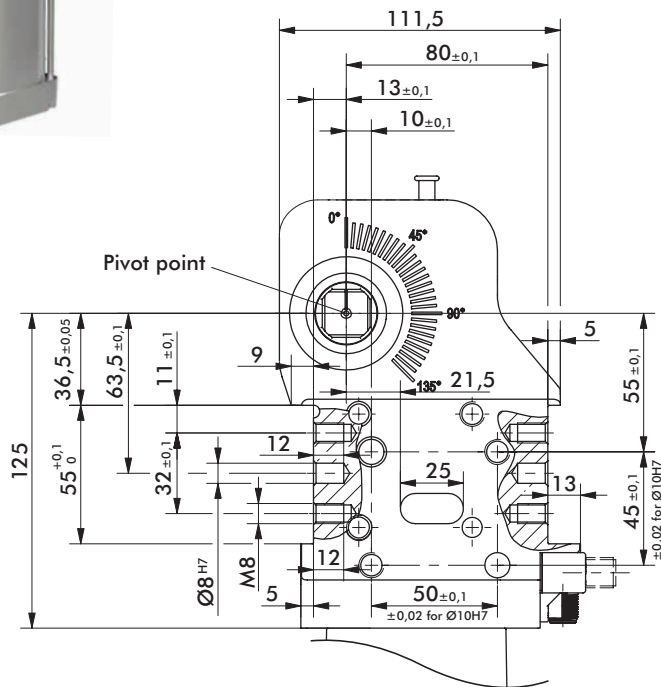
82M-3E/TCC-2E...5.



Dimensions of the driven shaft



Model	B23 Max.	L17
82M-3E03/TCC-2E03..5...	72	12
82M-3E23/TCC-2E23..5...	90	21



mm [INCH]



Power by compressed air, max. 6 bar operation with oil-free air is permissible.  
The connector socket and the cable are not supplied with the unit.  
Safe "holding/clamping" only under pressurization (for TCC models only).

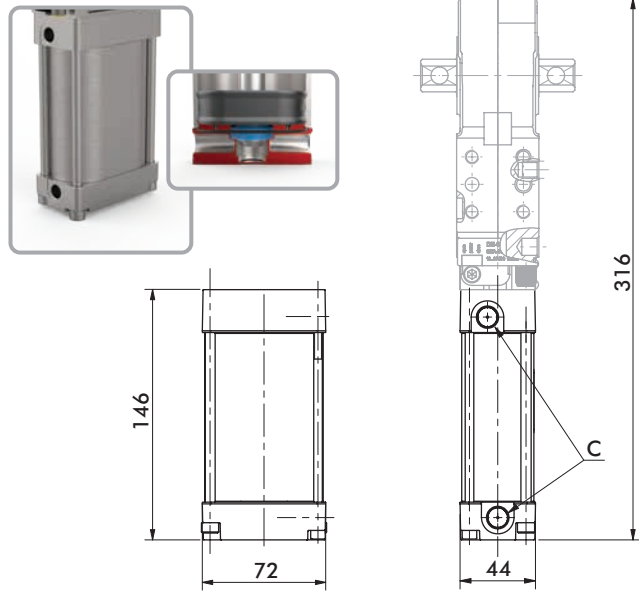


# 82M-3/TCC-2, 50MM

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Cylinder Options Dimension

## 82M-3E/TCC-2E...50/5N

Standard Cylinder



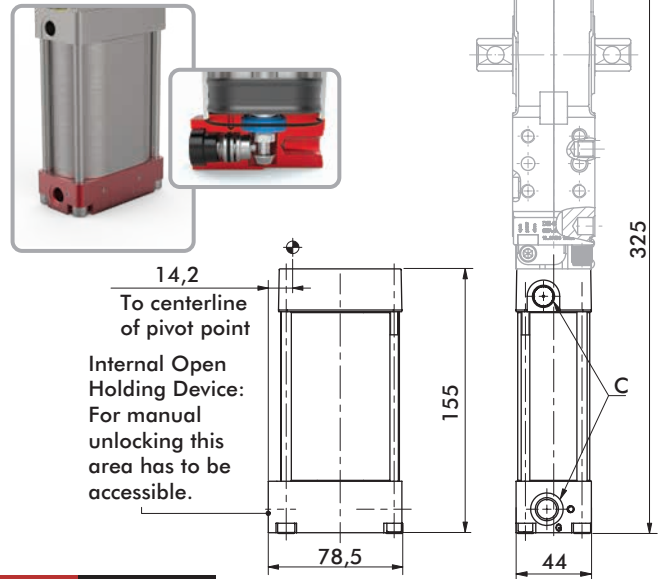
Ports	C
50	G1/4
5N	1/4-18 NPT

**Important!** For optimal cushioning, external pneumatic one-way flow control valves should be used.

## 82M-3E/TCC-2E...5A/5B

Cylinder with Internal Hold Open Device

Securely holds clamp in the open position.



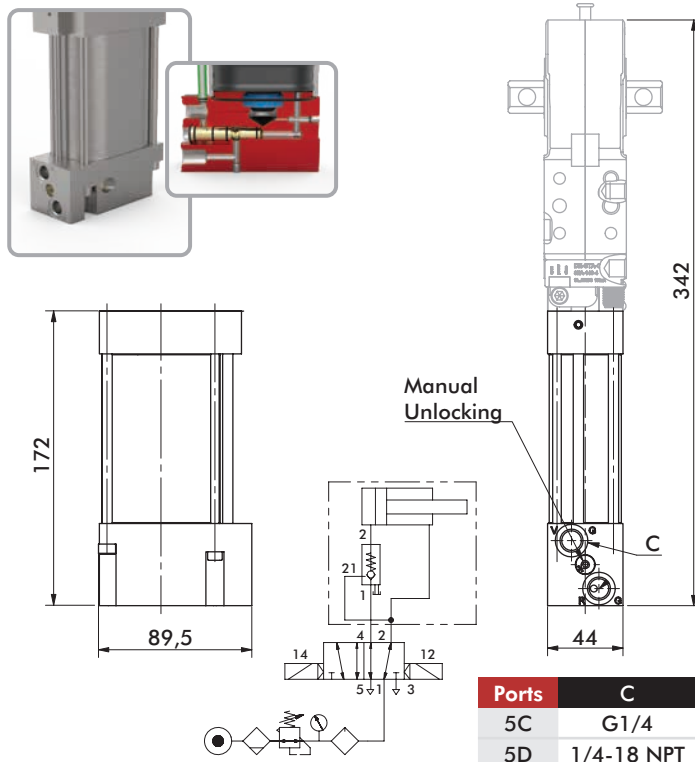
Ports	C
5A	G1/4
5B	1/4-18 NPT

**Important!** For optimal cushioning, external pneumatic one-way flow control valves should be used.

## TCC-2E...5C/5D

Cylinder with Unlock-able Return Valve

Pneumatically holds clamp arm in the closed position when air is released.

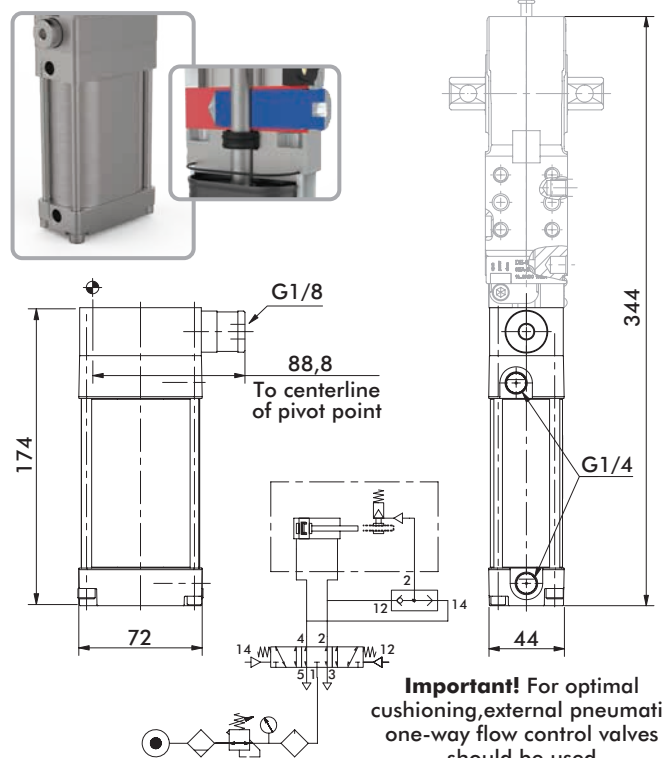


Ports	C
5C	G1/4
5D	1/4-18 NPT

## TCC-2E...5V

Cylinder with Rod Locking Device

Uses friction to clamp rod at any point between open and closed positions.



**Important!** For optimal cushioning, external pneumatic one-way flow control valves should be used.

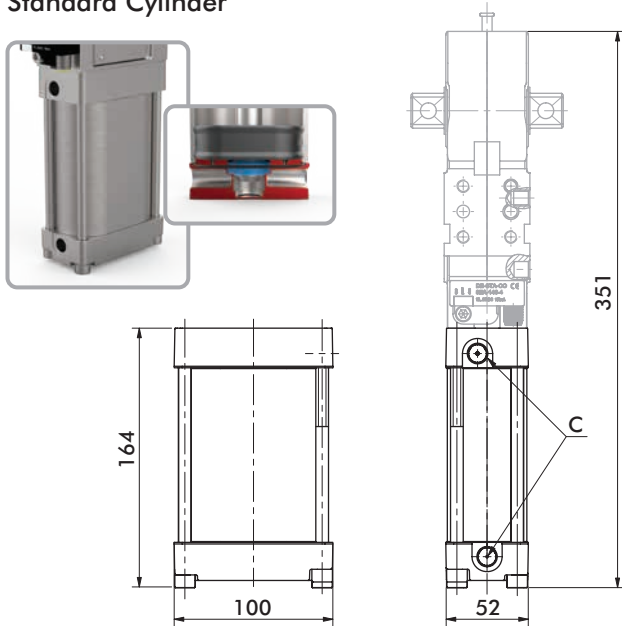


# 82M-3./TCC-2, 63MM

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Cylinder Options Dimension

## 82M-3/TCC-2.....63/6N

Standard Cylinder



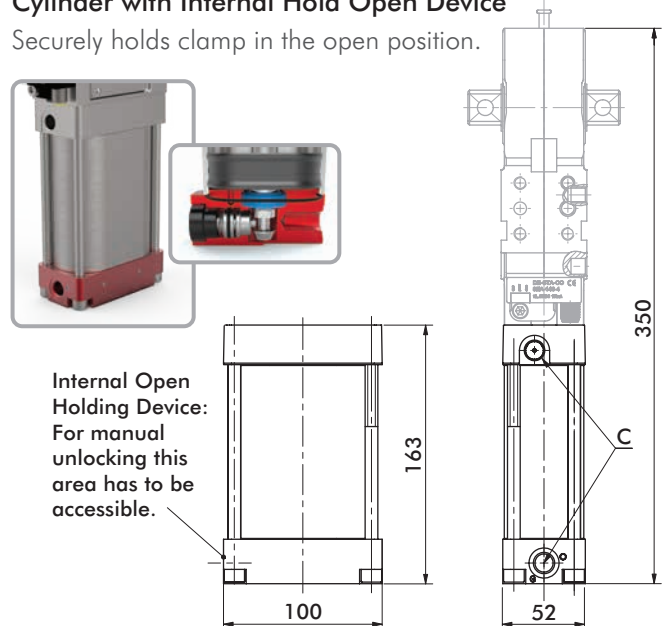
Ports	C
63	G1/4
6N	1/4-18 NPT

**Important!** For optimal cushioning, external pneumatic one-way flow control valves should be used.

## 82M-3/TCC-2.....6A/6B

Cylinder with Internal Hold Open Device

Securely holds clamp in the open position.



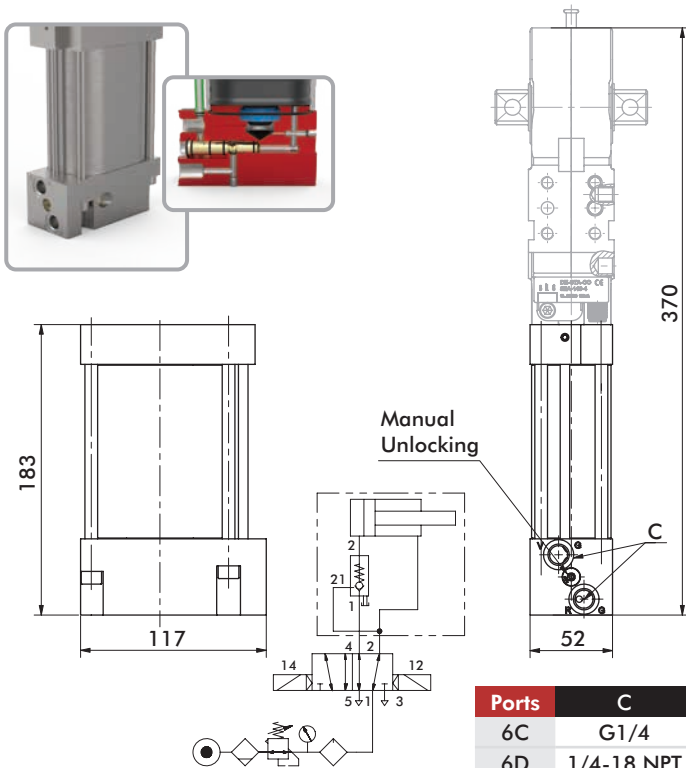
Ports	C
6A	G1/4
6B	1/4-18 NPT

**Important!** For optimal cushioning, external pneumatic one-way flow control valves should be used.

## TCC-2.....6C/6D

Cylinder with Unlock-able Return Valve

Pneumatically holds clamp arm in the closed position when air is released.

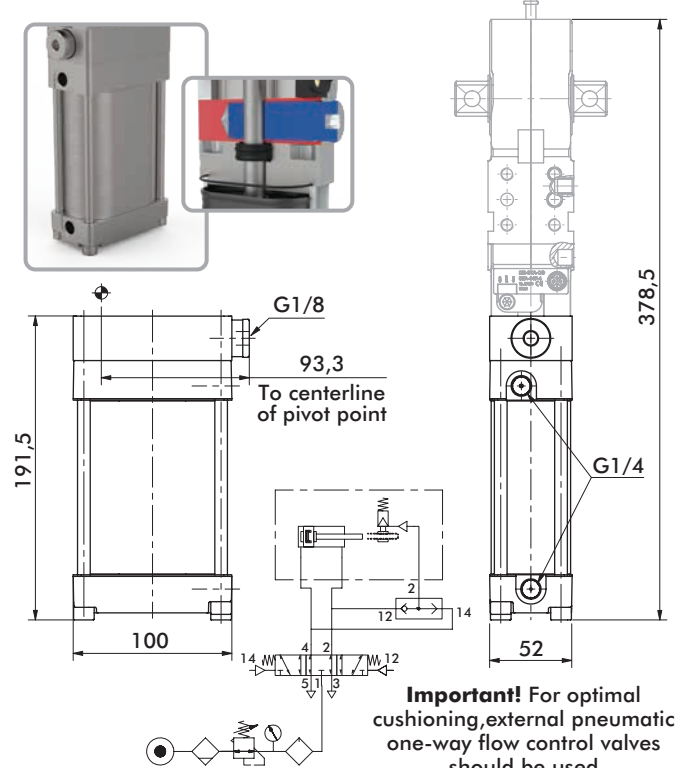


Ports	C
6C	G1/4
6D	1/4-18 NPT

## TCC-2.....6V

Cylinder with Rod Locking Device

Uses friction to clamp rod at any point between open and closed positions.

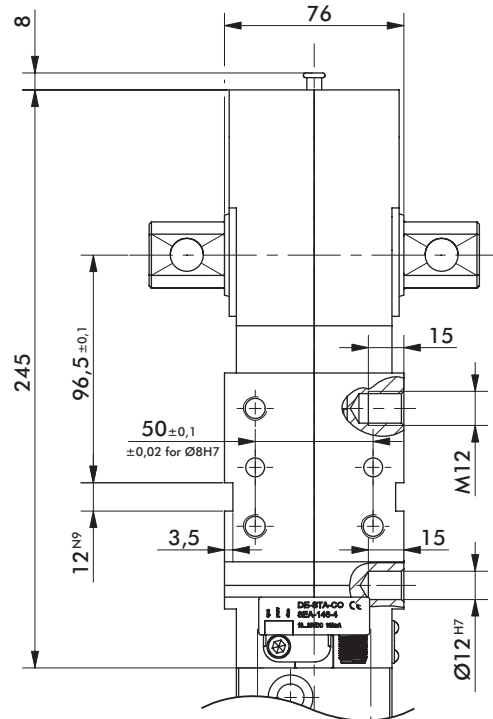
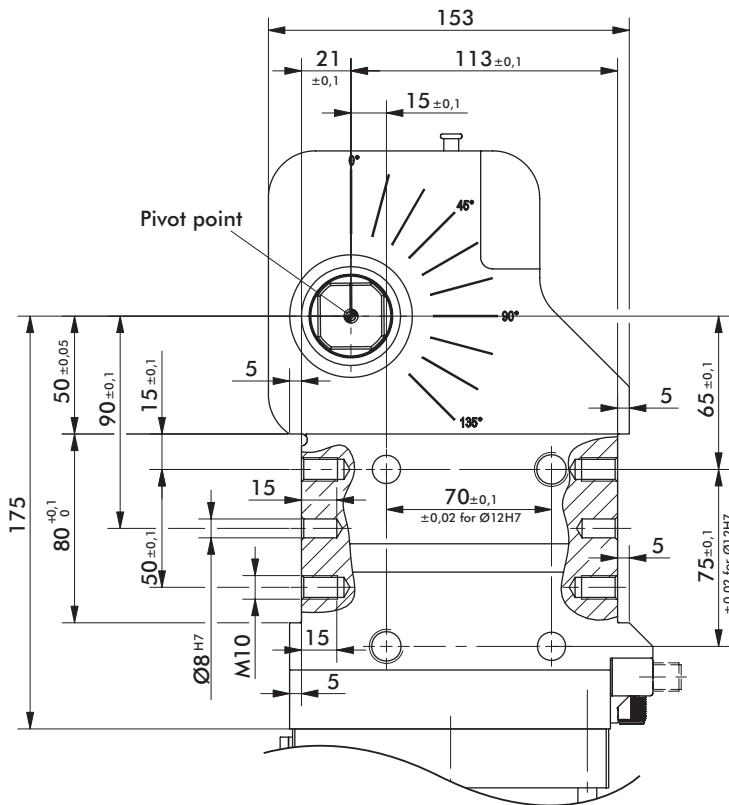
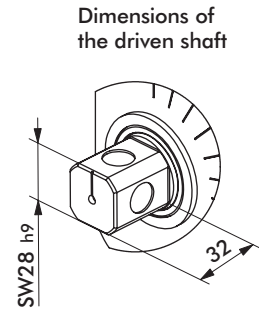
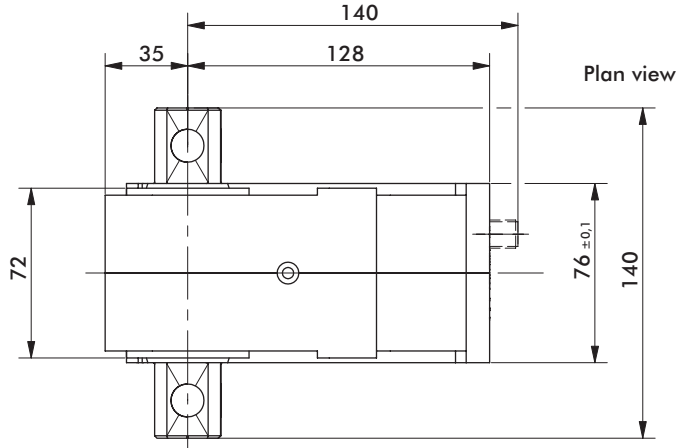


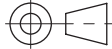
**Important!** For optimal cushioning, external pneumatic one-way flow control valves should be used.

# 82M-3., 80MM

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions

82M-3E....8.



mm [INCH]  
  
 THIRD ANGLE  
 PROJECTION

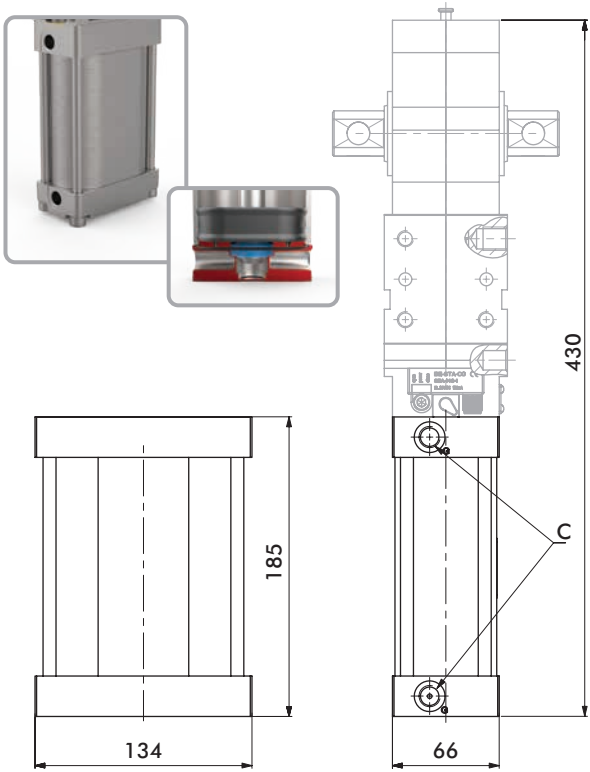
Power by compressed air, max. 6 bar operation with oil-free air is permissible.  
 The connector socket and the cable are not supplied with the unit.

# 82M-3., 80MM

## Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Cylinder Options Dimension

### 82M-3E...80/8N

Standard Cylinder



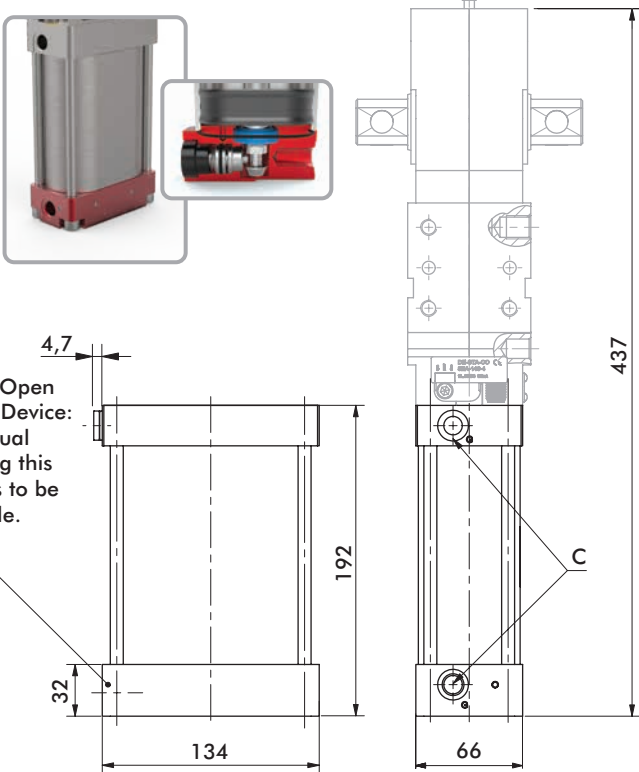
Ports	C
80	G1/4
8N	1/4-18 NPT

**Important!** For optimal cushioning, external pneumatic one-way flow control valves should be used.

### 82M-3E...8A/8B

Cylinder with Internal Hold Open Device

Securely holds clamp in the open position.



Ports	C
8A	G1/4
8B	1/4-18 NPT

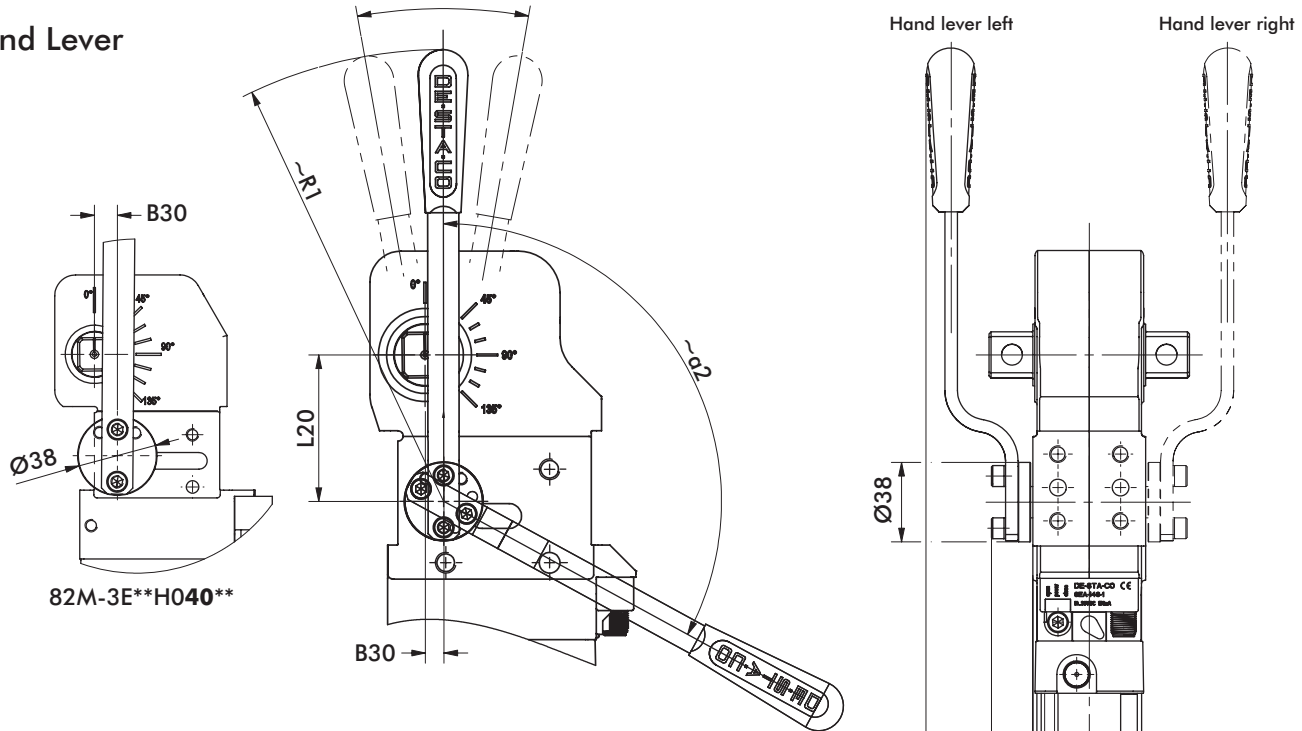
**Important!** For optimal cushioning, external pneumatic one-way flow control valves should be used.

Internal Open Holding Device:  
For manual unlocking this area has to be accessible.

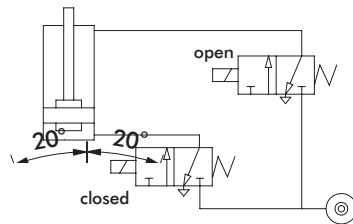
# 82M-3. ACCESSORIES

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

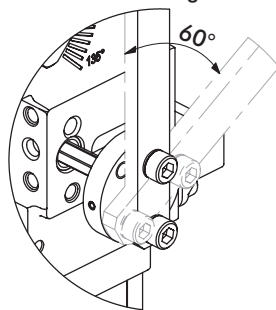
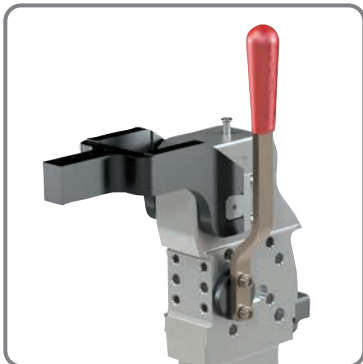
## Hand Lever



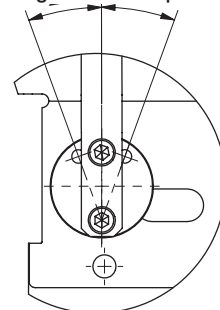
82M-3E\*\*H040\*\*



**Note:** Hand lever is supplied unassembled. Allows for easy, custom left hand or right hand mounting for desired position.



Mounting of the hand lever: rotatable in 60° increments.



Hand lever can be mounted in 3 positions.

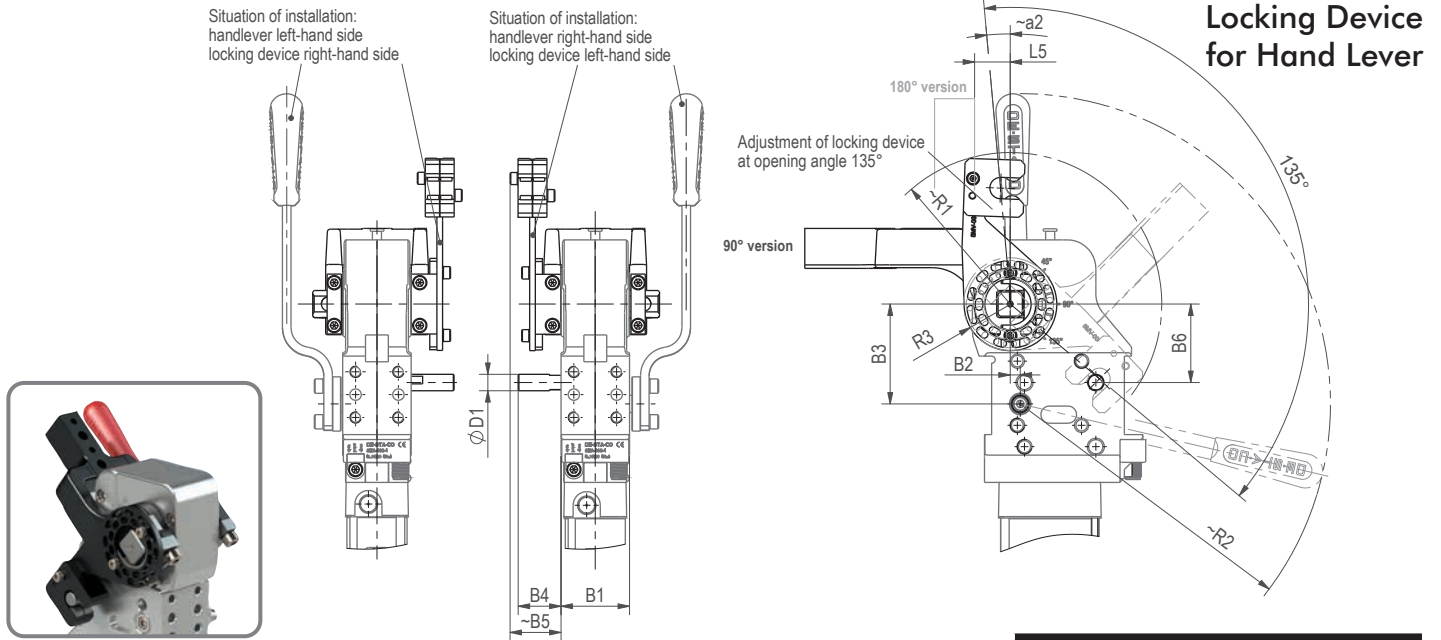


Hand lever position is adjustable to  $\pm 20$  degrees for improved ergonomics.

Model No.	B21	B28	L20	~R1	Swivel Angle $\alpha 2$ (with reference to opening angle of clamp arm)									
					0°	15°	30°	45°	60°	75°	90°	105°	120°	135°
82M-3...H040..	27	24	48,5	160	0°	31°	41°	49°	58°	69°	88°	113°	134°	144°
82M-3...H05...	52	20	70	218	-1°	30°	39°	46°	53°	61°	70°	81°	92°	103°
82M-3...H06..	52	20	70,5	218	0°	30°	39°	47°	56°	66°	79°	94°	108°	119°
82M-3...H08..	56	24	82	268	-1°	28°	37°	45°	53°	63°	75°	92°	107°	117°

# 82M-3. ACCESSORIES

## Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

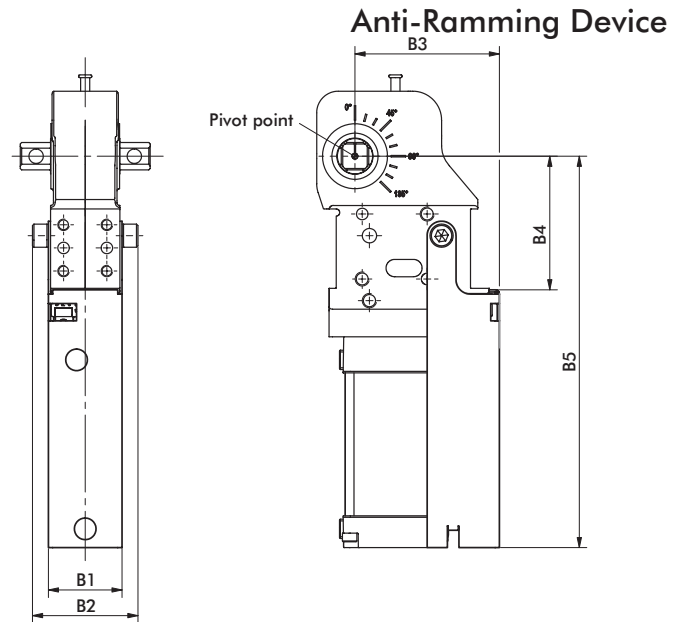


Order No.	For Model	B1	B2	B3	B4	B5	B6	ØD1	R1	R2	R3	α2	Limited Setting Options					
													Height of the clamping arm: L5 max.					
													90° version			180° version		
82ZB-162-1	82M-3...H040..*	50	11	48,5	25	31	38,5	10,5	81	160	27	6	120°	-	105°	120°	120°	120°
82ZB-084-1	82M-3...H05...	48	7	70	30	36	55	11,5	107	218	32,5	6	120°	-	-	105°	120°	-
82ZB-039-1	82M-3...H06...	54	9	70,5	30	36	55	11,5	107	210	32,5	6	110°	105°	-	105°	120°	-

\*Not compatible with Size 40 Option N NAAMS Side Mounting.

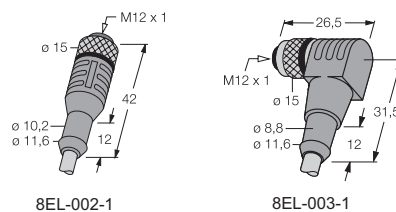


Anti-ramming device is only available for standard cylinder with 82M-3...00..00 and 82M-3...00..L8



Order No.	For Model	B1	B2	B3	B4	B5
8AB-151-1	82M-3.....40..	53	66,5	89,5	65,5	210,5
8AB-152-1	82M-3.....5...	51	73	100	92,5	271
8AB-153-1	82M-3.....6...	57	79	120	104,5	296
8AB-154-1	82M-3.....8...	79	105,5	148	142,5	360

Order No.	Description
8EL-002-1	M12x1, Straight, 5-pin Connector with 5m Cable
8EL-003-1	M12x1, Angular, 4-pin Connector with 5m Cable

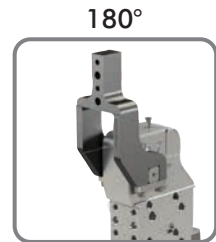
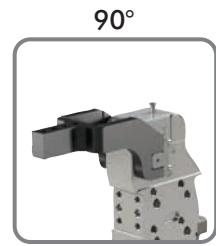
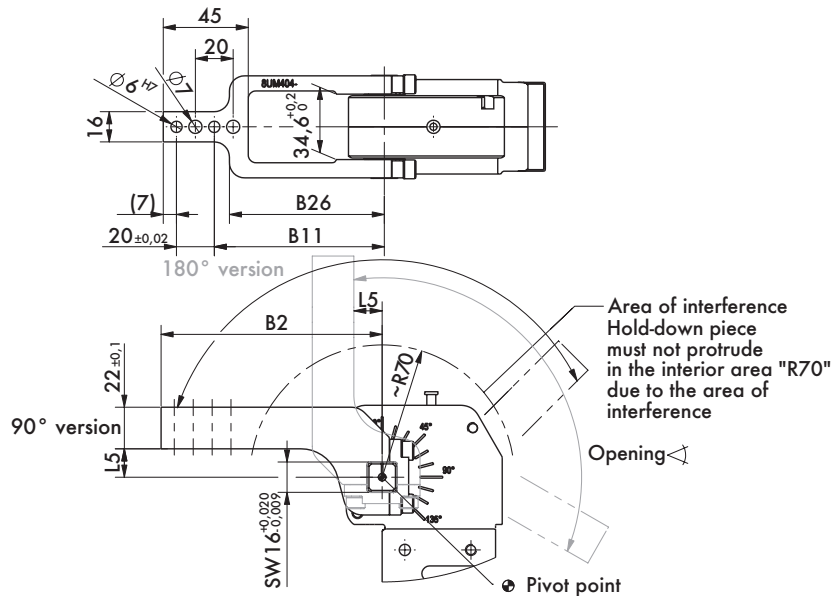


Dimensions and technical information are subject to change without notice

# U-ARMS CENTER (ALUMINUM)

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

For Size 40mm\*

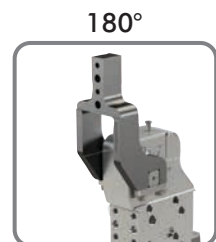
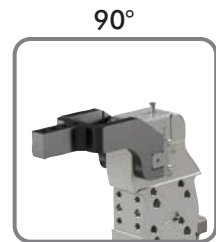
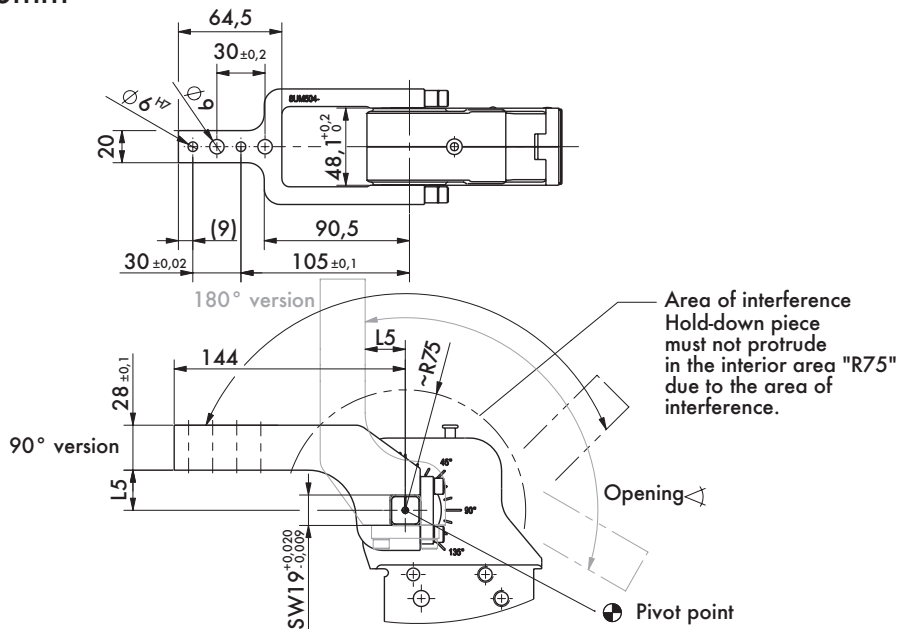


8UM404-00-117  
8UM404-15-117  
8UM404-25-117  
8UM404-45-107

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B11 ±0,1	B26	L5
8UM404-00-117	135°	105°	0,23	117	90	82	0
8UM404-15-117		120°	0,24				15
8UM404-25-117	130°	135°	0,25	107	80	72	25
8UM404-45-107			0,24				45

\*Not compatible with NAAMS Clamp Arm Shaft option 13. See page PC-PPC-38.

For Size 50mm



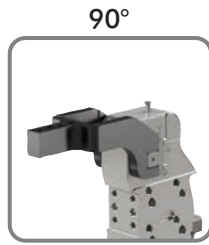
8UM504-15-144  
8UM504-25-144  
8UM504-45-144

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	L5
8UM504-15-144	135°	105°	0,44	15
8UM504-25-144		120°	0,45	25
8UM504-45-144	135°	135°	0,48	45

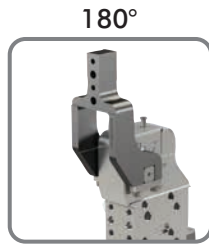


# U-ARMS CENTER (ALUMINUM)

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

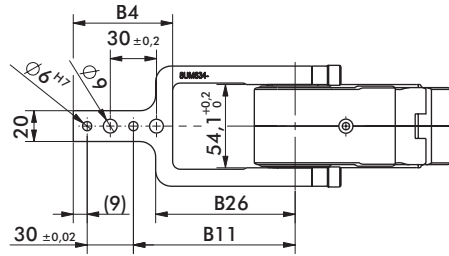


90°

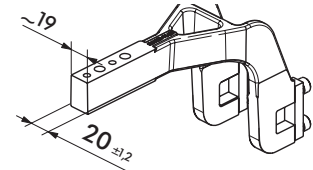


180°

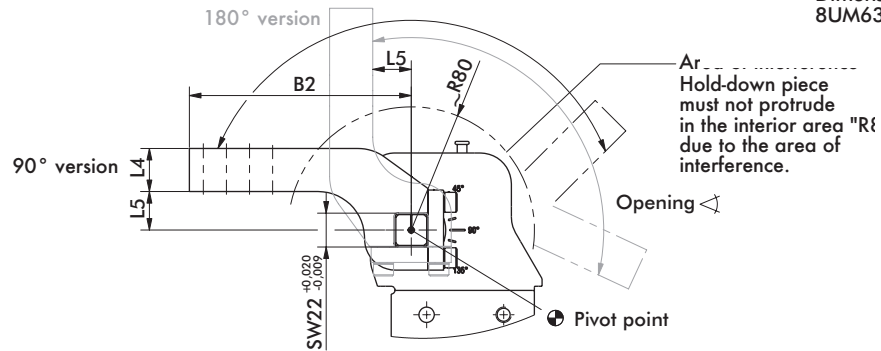
8UM634-15-144  
8UM634-25-144  
8UM634-45-144  
8UM631-75-204\*



For Size 63mm



Dimensions are only for 8UM631-75-204

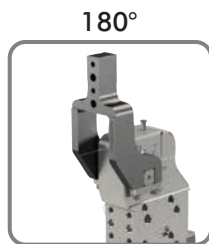


Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B4	B11 ±0,1	B26	L4 ±0,1	L5
8UM634-15-144	135°	105°	0,50						15
8UM634-25-144		120°	0,53	144	64,5	105	90,5	28	25
8UM634-45-144		135°	0,56						45
8UM631-75-204*		1,7	204	82	165	107	30	75	

\*only steel version available.

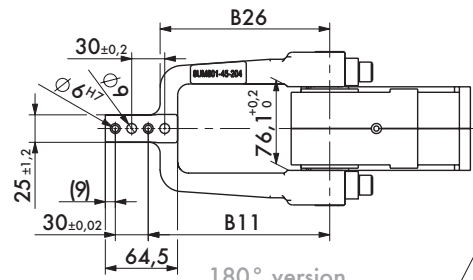


90°

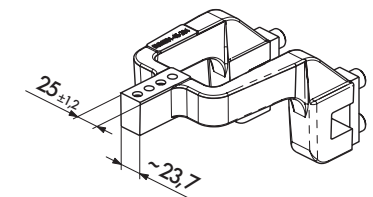
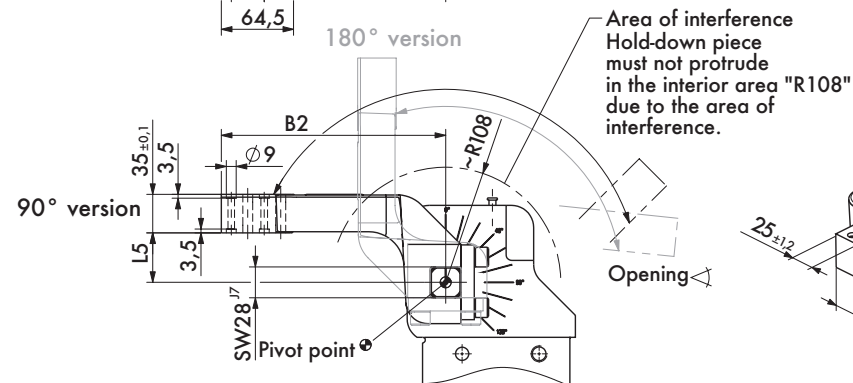


180°

8JG-169-2-01\*  
8UM801-45-204\*



For Size 80mm



Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B11 ±0,1	B26	L5** ±0,2
8JG-169-2-01*	135°	105°	3,5	179	140	129	20
8UM801-45-204*		135°	4,1	204	165	154	45

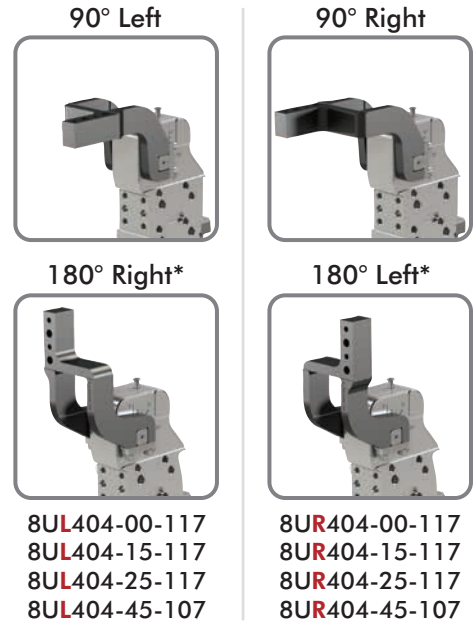
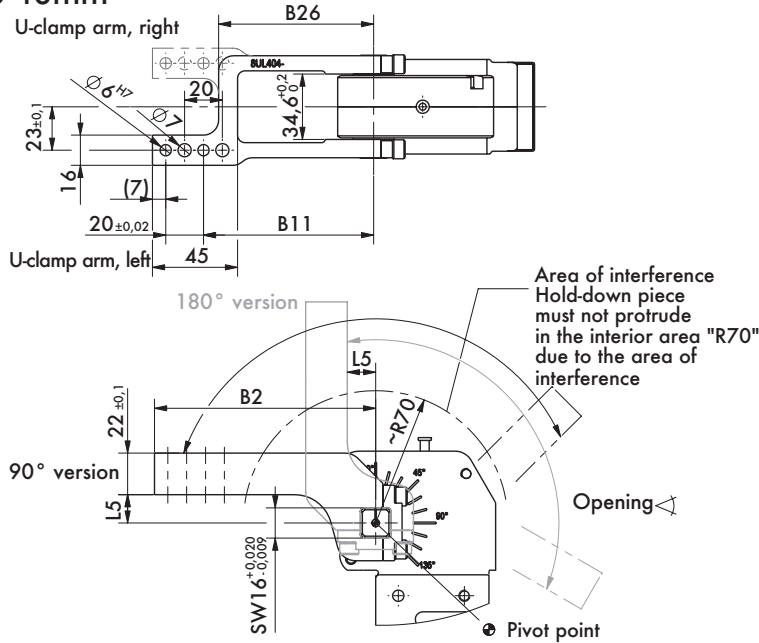
\*only steel version available.

\*\* Tolerance measured 80mm from pivot point.

# U-ARMS OFFSET (ALUMINUM)

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

For Size 40mm\*



8UL404-00-117  
8UL404-15-117  
8UL404-25-117  
8UL404-45-107

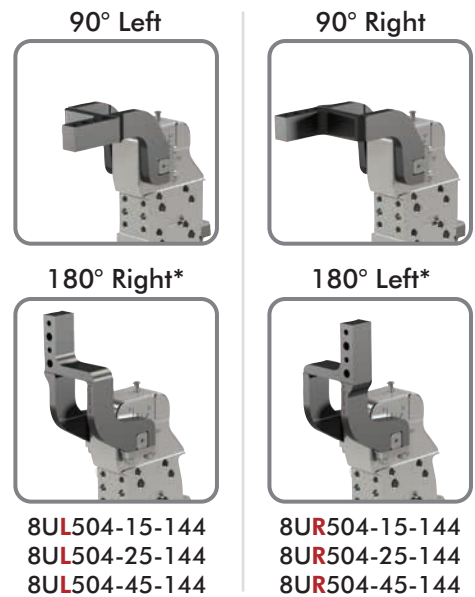
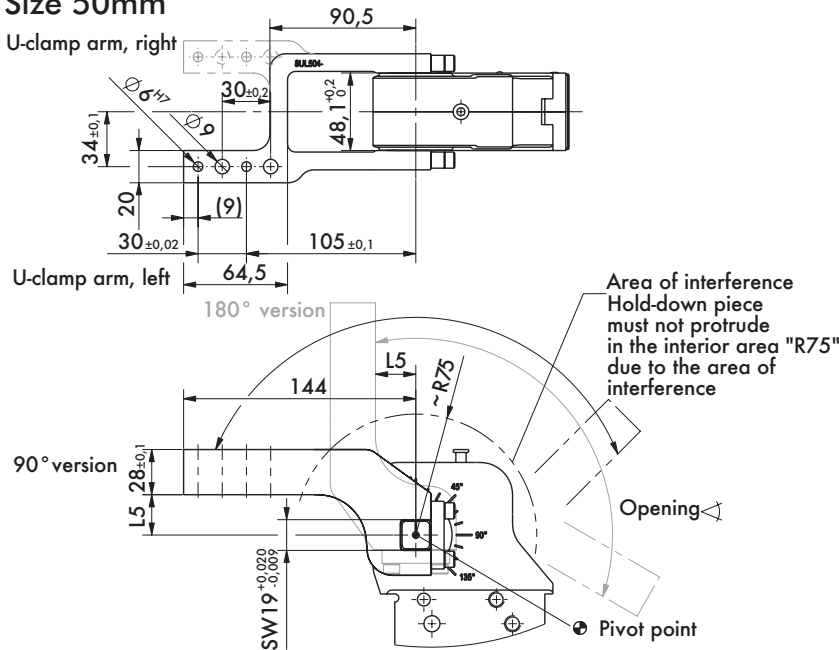
8UR404-00-117  
8UR404-15-117  
8UR404-25-117  
8UR404-45-107

\*90° left/180° right uses same clamp arm.  
90° right/180° left uses same clamp arm.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B11 ±0,1	B26	L5
8U(•)404-00-117		105°	0,23				0
8U(•)404-15-117	135°	120°	0,24	117	90	82	15
8U(•)404-25-117		135°	0,25				25
8U(•)404-45-107			0,25	107	80	72	45

\*Not compatible with NAAMS Clamp Arm Shaft option 13.

For Size 50mm



8UL504-15-144  
8UL504-25-144  
8UL504-45-144

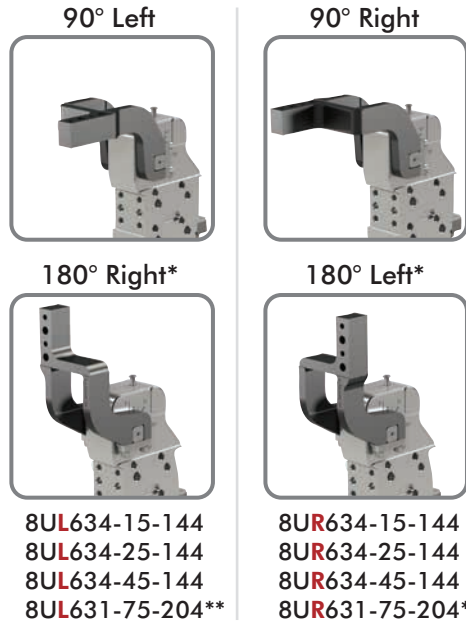
8UR504-15-144  
8UR504-25-144  
8UR504-45-144

\*90° left/180° right uses same clamp arm.  
90° right/180° left uses same clamp arm.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	L5
8U(•)504-15-144		105°	0,45	15
8U(•)504-25-144	135°	120°	0,46	25
8U(•)504-45-144		135°	0,49	45

# U-ARMS OFFSET (ALUMINUM)

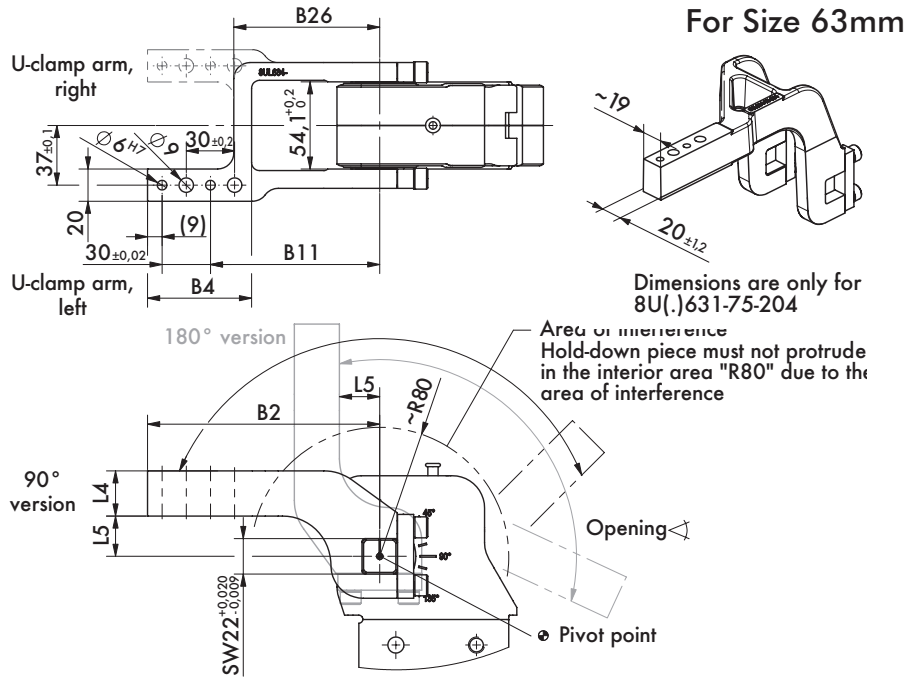
Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications



\*90° left/180° right uses same clamp arm.  
90° right/180° left uses same clamp arm.

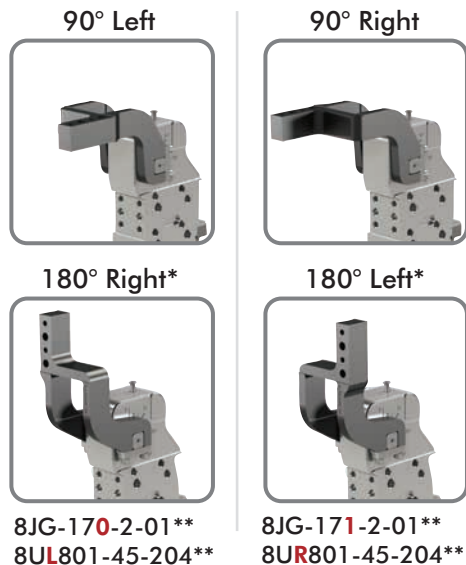
8UL634-15-144  
8UL634-25-144  
8UL634-45-144  
8UL631-75-204\*\*

8UR634-15-144  
8UR634-25-144  
8UR634-45-144  
8UR631-75-204\*\*



Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B4	B11 ±0,1	B26	L4 ±0,1	L5	
8U(.)634-15-144	135°	105°	0,52	144	64,5	105	90,5	28	15	
8U(.)634-25-144		120°	0,54						25	
8U(.)634-45-144		135°	135°	0,58	204	82	165	119	30	45
8U(.)631-75-204**			1,9	75						

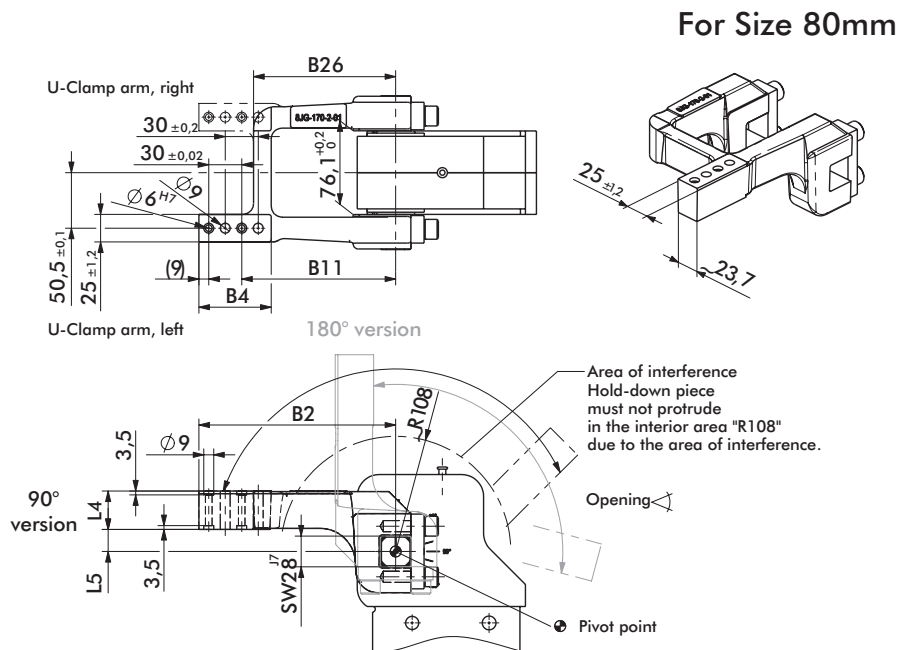
\*\*only steel version available.



\*90° left/180° right uses same clamp arm.  
90° right/180° left uses same clamp arm.

8JG-170-2-01\*\*  
8UL801-45-204\*\*

8JG-171-2-01\*\*  
8UR801-45-204\*\*



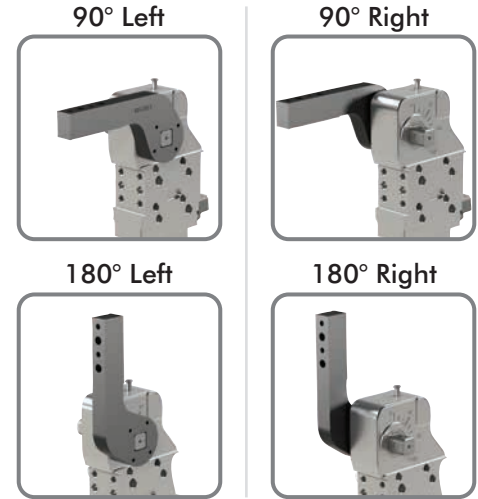
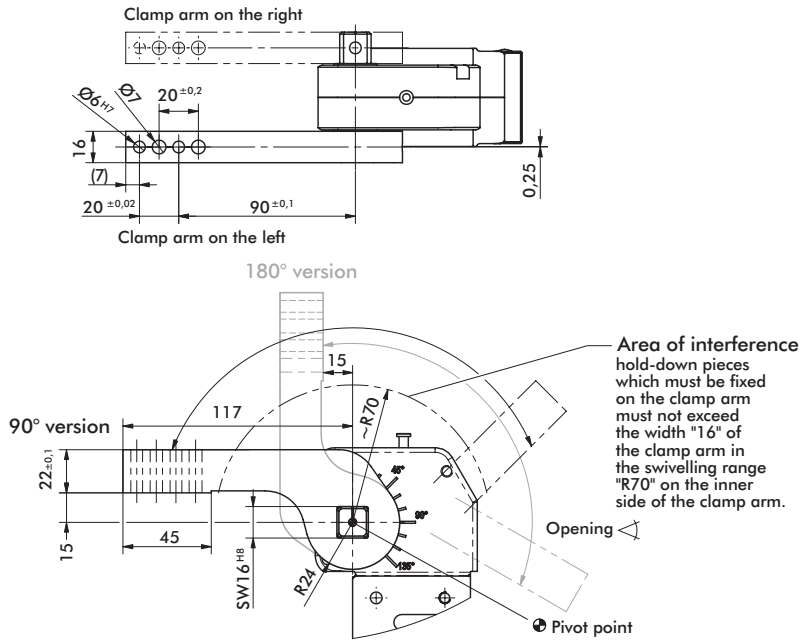
Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B4	B11 ±0,1	B26	L4 ±0,1	L5
8JG-17(.)-2-01**	135°	135°	3,5	179	65	140	129	35	20
8U(.)801-45-204**			4,3	204	66	165	154		45

\*\*only steel version available.

# LATERAL (SIDE) ARMS

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

For Size 40mm\*

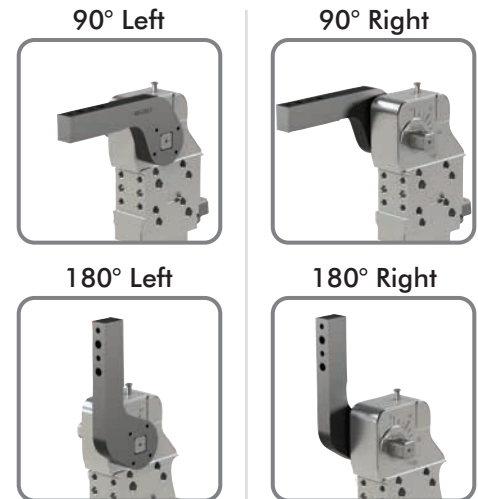
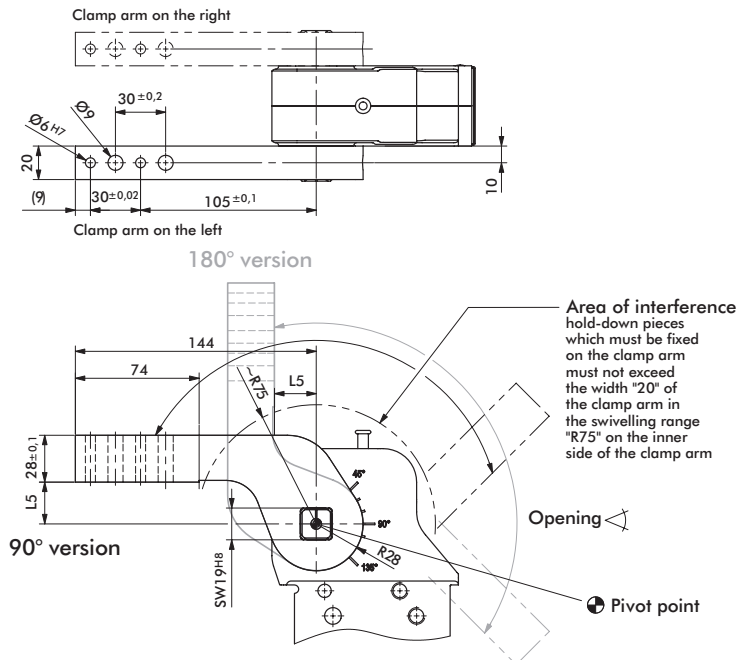


8S401-15-117

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)
8S401-15-117	135°	120°	0,5

1 clamp arm per set. Models with 2 lateral clamp arms requires 2 clamp arm sets.  
\*Not compatible with NAAMS Clamp Arm Shaft option 13.

For Size 50mm



8JG-070-1-01  
8S501-25-144

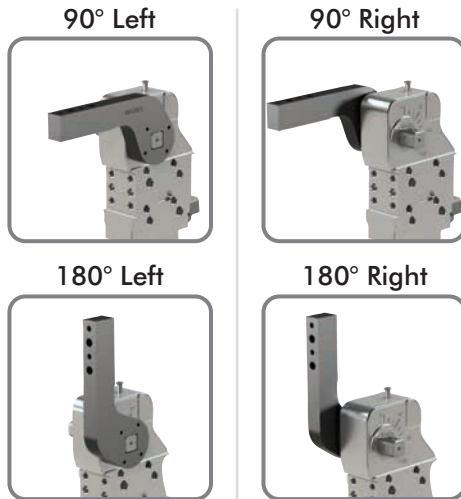
Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	L5
8JG-070-1-01	135°	135°	0,9	15
8S501-25-144			1,0	25

1 clamp arm per set. Models with 2 lateral clamp arms requires 2 clamp arm sets.

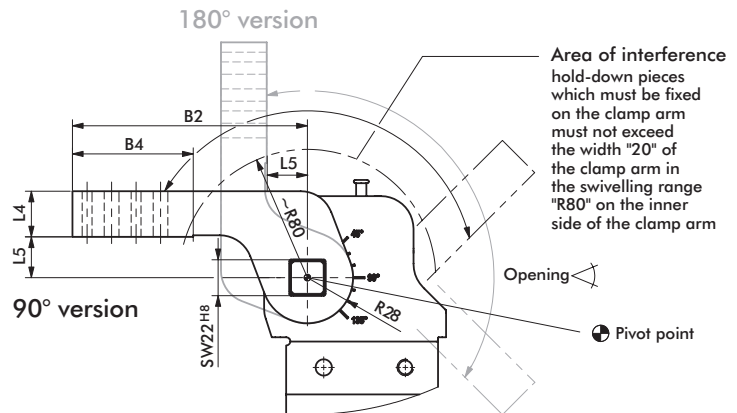
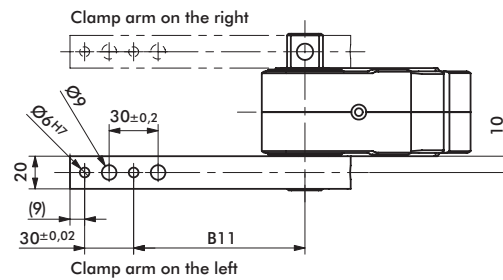
# LATERAL (SIDE) ARMS

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

For Size 63mm



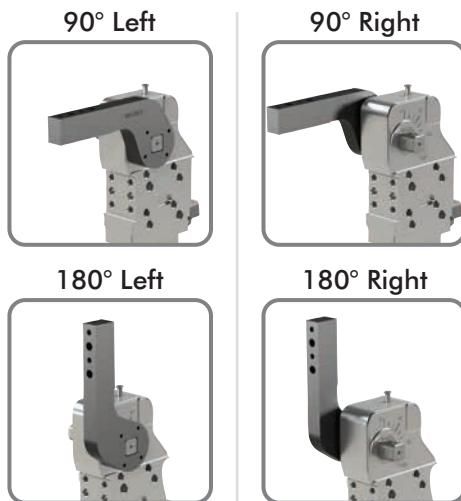
8JG-080-1-01  
8S631-25-144  
8S631-45-144  
8S631-75-204



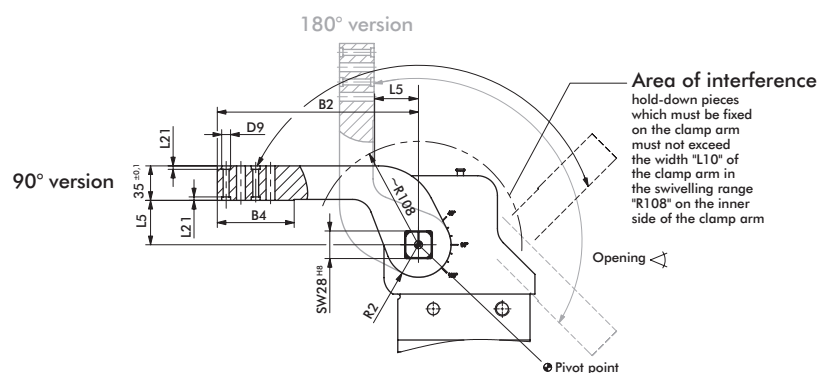
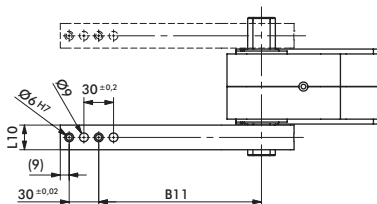
Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B4	B11 ±0,1	L4 ±0,1	L5
8JG-080-1-01	135°	135°	0,9	144	74	105	28	15
8S631-25-144			1,0					25
8S631-45-144			1,1					45
8S631-75-204			1,5					75

1 clamp arm per set. Models with 2 lateral clamp arms requires 2 clamp arm sets.

For Size 80mm



8JG-1179-1-01  
8S801-45-204



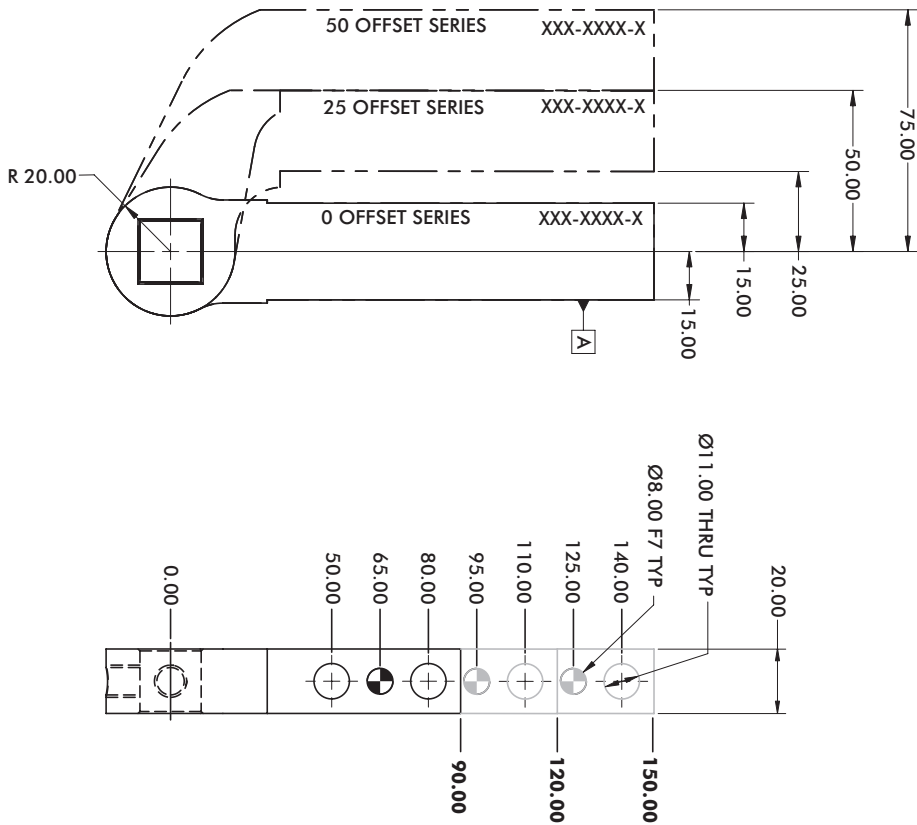
Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B4	D9	B11 ±0,1	L5	L10	L21	R2
8JG-1179-1-01	135°	135°	2,1	179	74	-	140	20	30	-	35
8S801-45-204			204	78	9	165	45	25	3,5	33	

1 clamp arm per set. Models with 2 lateral clamp arms requires 2 clamp arm sets.

# LATERAL (SIDE) ARMS, NAAMS-STYLE

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

For Size 50mm



## 9mm Thru Hole (6.00 H7 Dowel)

90mm [3.54"] Arm Length

Series	Arm Style	Model
50 Offset	▲ • 3256	B8JG-3256-1
25 Offset	▲ • 3246	B8JG-3246-1
0 Offset	▲ • 3236	B8JG-3236-1

120mm [4.72"] Arm Length

Series	Arm Style	Model
50 Offset	▲ • 3257	B8JG-3257-1
25 Offset	▲ • 3247	B8JG-3247-1
0 Offset	▲ • 3237	B8JG-3237-1

150mm [5.90"] Arm Length

Series	Arm Style	Model
50 Offset	▲ • 3258	B8JG-3258-1
25 Offset	▲ • 3248	B8JG-3248-1
0 Offset	▲ • 3238	B8JG-3238-1

## 11mm Thru Hole (8.00 F7 Dowel)

90mm [3.54"] Arm Length

Series	Arm Style	Model
50 Offset	▲ • 1226	B8JG-1226-1
25 Offset	▲ • 1216	B8JG-1216-1
0 Offset	▲ • 1206	B8JG-1206-1

120mm [4.72"] Arm Length

Series	Arm Style	Model
50 Offset	▲ • 1227	B8JG-1227-1
25 Offset	▲ • 1217	B8JG-1217-1
0 Offset	▲ • 1207	B8JG-1207-1

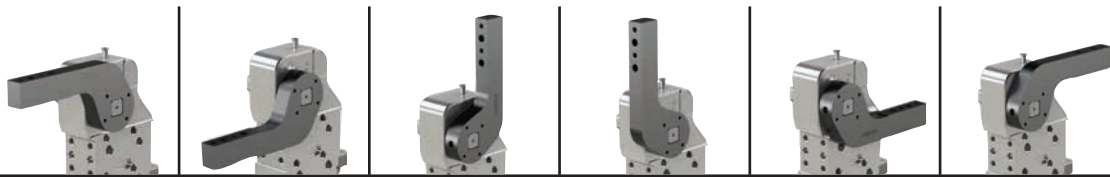
150mm [5.90"] Arm Length

Series	Arm Style	Model
50 Offset	▲ • 1228	B8JG-1228-1
25 Offset	▲ • 1218	B8JG-1218-1
0 Offset	▲ • 1208	B8JG-1208-1

▲ Common in North America

(•) STANDARD ARM OFFERING

## Maximum Opening Angle (shown in locked position)

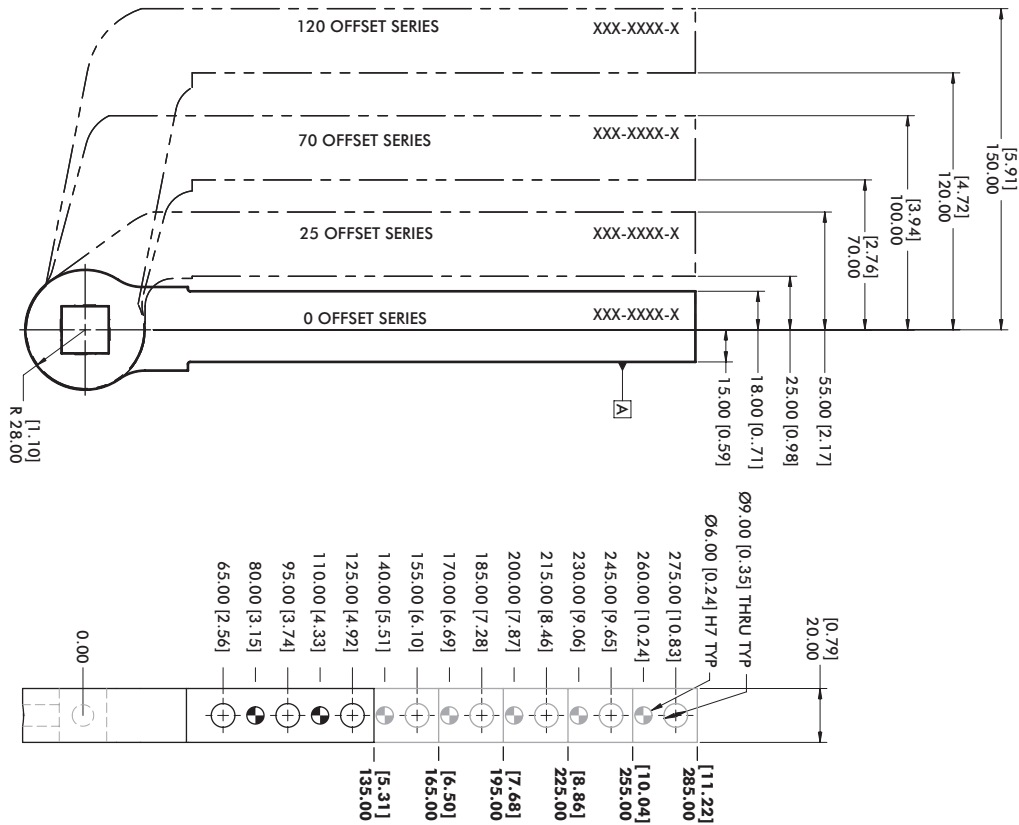


Arm Styles	135°	135°	100°	100°	N/A	N/A
1206-1208/3236-3238	135°	135°	100°	100°	N/A	N/A
1216-1218/3246-3248	135°	N/A	50°	125°	N/A	30°
1226-1228/3256-3258	125°	N/A	35°	135°	N/A	50°

# LATERAL (SIDE) ARMS, NAAMS-STYLE

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

For Size 63mm with 23 Clamp Arm Shaft Option



### 135mm [5.31"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1543	B8JG-1543-1
70 Offset	▲ 1531	B8JG-1531-1
25 Offset	▲ 1519	B8JG-1519-1
0 Offset	▲ 1507	B8JG-1507-1

### 165mm [6.50"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1544	B8JG-1544-1
70 Offset	▲ 1532	B8JG-1532-1
25 Offset	▲ 1520	B8JG-1520-1
0 Offset	▲ 1508	B8JG-1508-1

### 195mm [7.68"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1545	B8JG-1545-1
70 Offset	▲ 1533	B8JG-1533-1
25 Offset	▲ 1521	B8JG-1521-1
0 Offset	▲ 1509	B8JG-1509-1

### 225mm [8.86"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1546	B8JG-1546-1
70 Offset	▲ 1534	B8JG-1534-1
25 Offset	▲ 1522	B8JG-1522-1
0 Offset	▲ 1510	B8JG-1510-1

### 255mm [10.04"] Arm Length

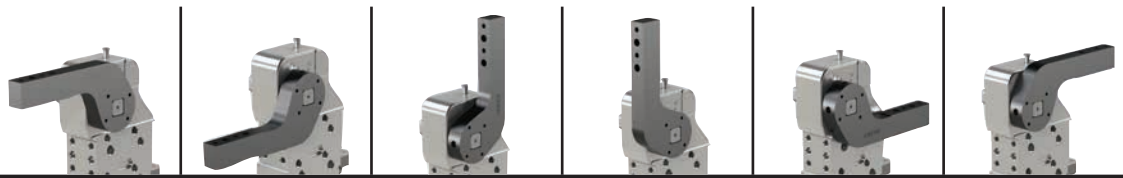
Series	Arm Style	Model
120 Offset	▲ 1547	B8JG-1547-1
70 Offset	▲ 1535	B8JG-1535-1
25 Offset	▲ 1523	B8JG-1523-1
0 Offset	▲ 1511	B8JG-1511-1

### 285mm [11.22"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1548	B8JG-1548-1
70 Offset	▲ 1536	B8JG-1536-1
25 Offset	▲ 1524	B8JG-1524-1
0 Offset	▲ 1512	B8JG-1512-1

▲ Common in North America

### Maximum Opening Angle (shown in locked position)

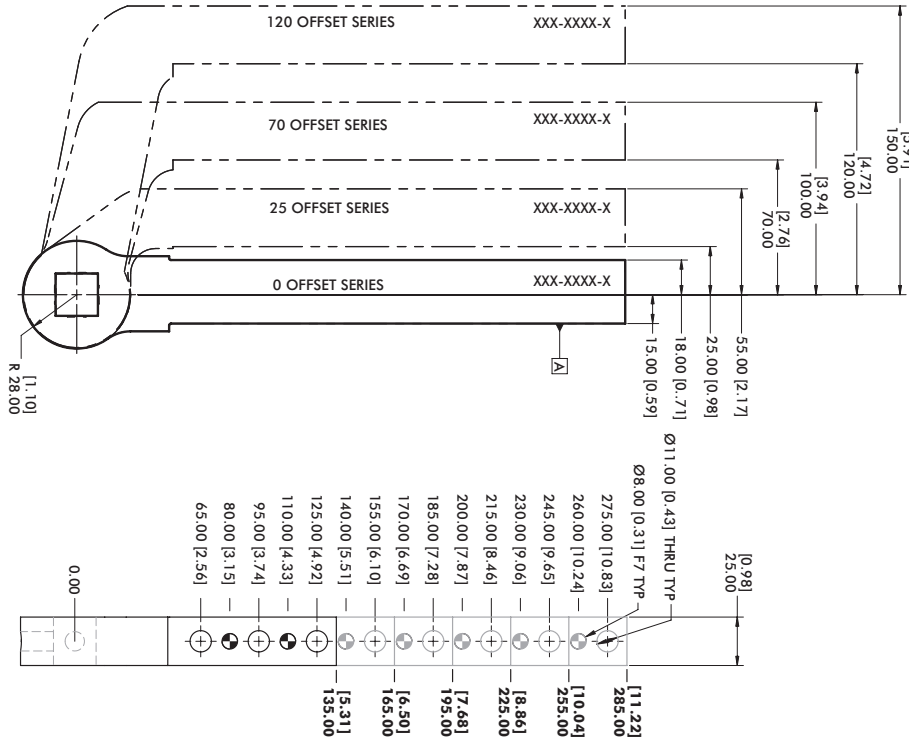


Arm Styles	135°	135°	100°	100°	N/A	N/A
1510-1512/1507-1509	135°	135°	100°	100°	N/A	N/A
1522-1524/1519-1521	135°	N/A	50°	130°	N/A	40°
1534-1536/1531-1533	115°	N/A	25°	135°	N/A	75°
1546-1548/1543-1545	110°	N/A	20°	135°	N/A	85°

# LATERAL (SIDE) ARMS, NAAMS-STYLE

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

For Size 63mm with D0 Clamp Arm Shaft Option



### 135mm [5.31"] Arm Length

Series	Arm Style	Model
120 Offset	▲ • 1043	B8JG-1043-1
70 Offset	▲ • 1031	B8JG-1031-1
25 Offset	▲ • 1019	B8JG-1019-1
0 Offset	▲ • 1007	B8JG-1007-1

### 165mm [6.50"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1044	B8JG-1044-1
70 Offset	▲ • 1032	B8JG-1032-1
25 Offset	▲ • 1020	B8JG-1020-1
0 Offset	▲ • 1008	B8JG-1008-1

### 195mm [7.68"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1045	B8JG-1045-1
70 Offset	▲ • 1033	B8JG-1033-1
25 Offset	▲ ⓘ 1021	B8JG-1021-1
0 Offset	▲ • 1009	B8JG-1009-1

### 225mm [8.86"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1046	B8JG-1046-1
70 Offset	▲ • 1034	B8JG-1034-1
25 Offset	▲ ⓘ 1022	B8JG-1022-1
0 Offset	▲ ⓘ 1010	B8JG-1010-1

### 255mm [10.04"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1047	B8JG-1047-1
70 Offset	▲ • 1035	B8JG-1035-1
25 Offset	▲ ⓘ 1023	B8JG-1023-1
0 Offset	▲ ⓘ 1011	B8JG-1011-1

### 285mm [11.22"] Arm Length

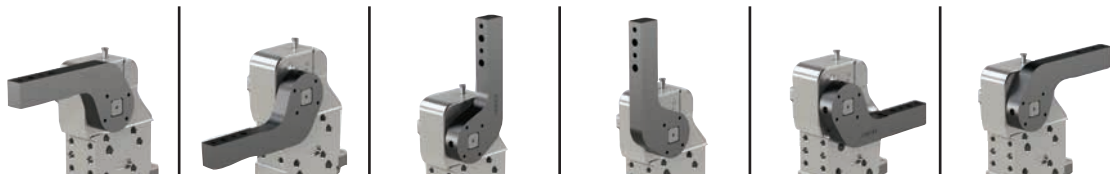
Series	Arm Style	Model
120 Offset	▲ ⓘ 1048	B8JG-1048-1
70 Offset	▲ ⓘ 1036	B8JG-1036-1
25 Offset	▲ ⓘ 1024	B8JG-1024-1
0 Offset	▲ ⓘ 1012	B8JG-1012-1

▲ Common in North America

(•) STANDARD ARM OFFERING

(ⓘ) NON-STANDARD ARM OFFERING (extended leadtimes apply)

### Maximum Opening Angle (shown in locked position)



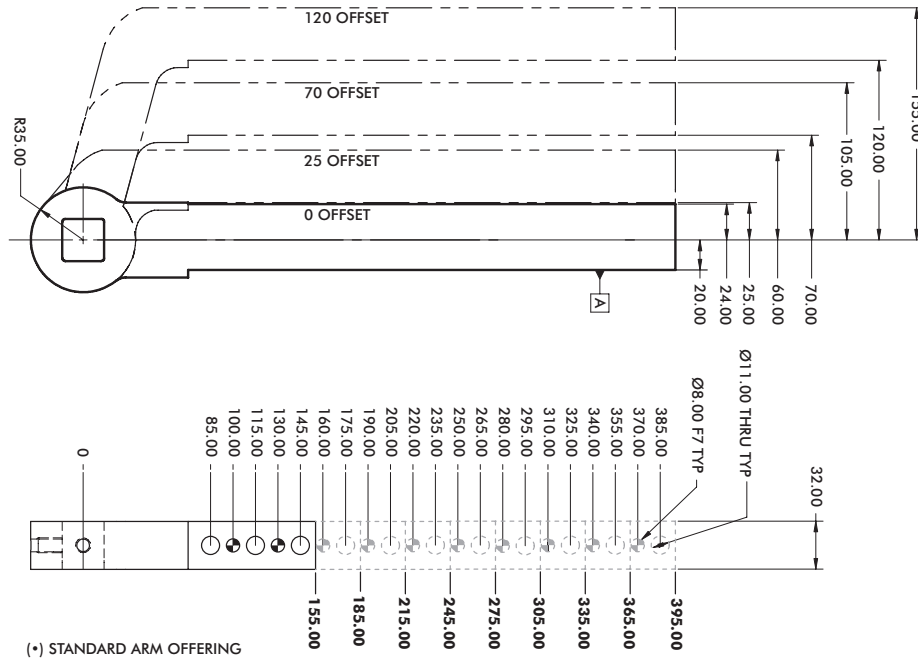
Arm Styles	135°	135°	100°	100°	N/A	N/A
1010-1012/1007-1009	135°	135°	100°	100°	N/A	N/A
1022-1024/1019-1021	135°	N/A	50°	130°	N/A	40°
1034-1036/1031-1033	115°	N/A	25°	135°	N/A	75°
1046-1048/1043-1045	110°	N/A	20°	135°	N/A	85°



# LATERAL (SIDE) ARMS, NAAMS-STYLE

Enclosed Pneumatic Power Clamps | Heavy-Duty Modular | Dimensions and Technical Specifications

For Size 80mm



### 155mm [4.53"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1170	B8JG-1170-1
70 Offset	▲ • 1150	B8JG-1150-1
25 Offset	▲ ⓘ 1130	B8JG-1130-1
0 Offset	▲ ⓘ 1110	B8JG-1110-1

### 185mm [7.28"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1171	B8JG-1171-1
70 Offset	▲ ⓘ 1151	B8JG-1151-1
25 Offset	▲ ⓘ 1131	B8JG-1131-1
0 Offset	▲ ⓘ 1111	B8JG-1111-1

### 215mm [8.46"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1172	B8JG-1172-1
70 Offset	▲ ⓘ 1152	B8JG-1152-1
25 Offset	▲ ⓘ 1132	B8JG-1132-1
0 Offset	▲ • 1112	B8JG-1112-1

### 245mm [9.65"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1173	B8JG-1173-1
70 Offset	▲ ⓘ 1153	B8JG-1153-1
25 Offset	▲ ⓘ 1133	B8JG-1133-1
0 Offset	▲ ⓘ 1113	B8JG-1113-1

### 275mm [10.83"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1174	B8JG-1174-1
70 Offset	▲ ⓘ 1154	B8JG-1154-1
25 Offset	▲ • 1134	B8JG-1134-1
0 Offset	▲ ⓘ 1114	B8JG-1114-1

### 305mm [12.00"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1175	B8JG-1175-1
70 Offset	▲ • 1155	B8JG-1155-1
25 Offset	▲ ⓘ 1135	B8JG-1135-1
0 Offset	▲ ⓘ 1115	B8JG-1115-1

### 335mm [13.19"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1176	B8JG-1176-1
70 Offset	▲ ⓘ 1156	B8JG-1156-1
25 Offset	▲ ⓘ 1136	B8JG-1136-1
0 Offset	▲ ⓘ 1116	B8JG-1116-1

### 365mm [14.37"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ⓘ 1177	B8JG-1177-1
70 Offset	▲ ⓘ 1157	B8JG-1157-1
25 Offset	▲ ⓘ 1137	B8JG-1137-1
0 Offset	▲ ⓘ 1117	B8JG-1117-1

### 395mm [15.55"] Arm Length

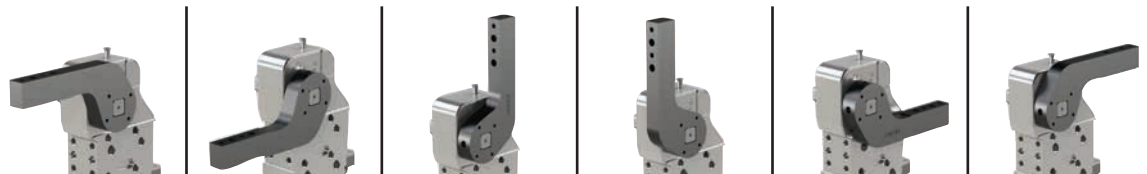
Series	Arm Style	Model
120 Offset	▲ ⓘ 1178	B8JG-1178-1
70 Offset	▲ • 1158	B8JG-1158-1
25 Offset	▲ ⓘ 1138	B8JG-1138-1
0 Offset	▲ • 1118	B8JG-1118-1

▲ Common in North America

(\*) STANDARD ARM OFFERING

ⓘ NON-STANDARD ARM OFFERING (extended leadtimes apply)

### Maximum Opening Angle (shown in locked position)



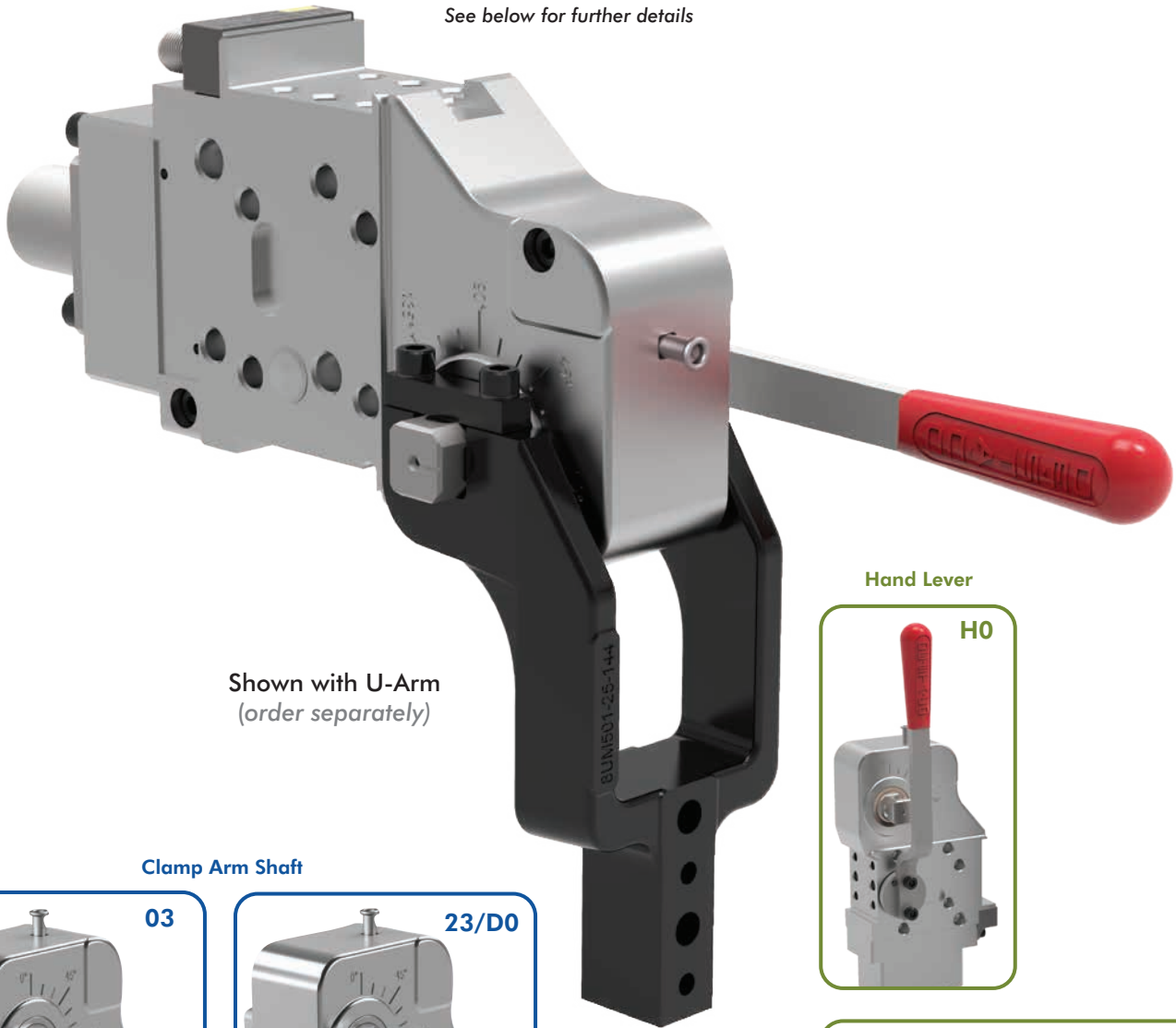
Arm Styles	1110 - 1118	1130 - 1138	1150 - 1158	1170 - 1178	1190 - 1198	1210 - 1218
1110 - 1118	135°	135°	100°	100°	N/A	N/A
1130 - 1138	135°	N/A	60°	120°	N/A	30°
1150 - 1158	125°	N/A	35°	135°	N/A	55°
1170 - 1178	115°	N/A	25°	135°	N/A	80°

# 52H-3

## Enclosed Modular Manual Power Clamps | Heavy-Duty | Ordering Information

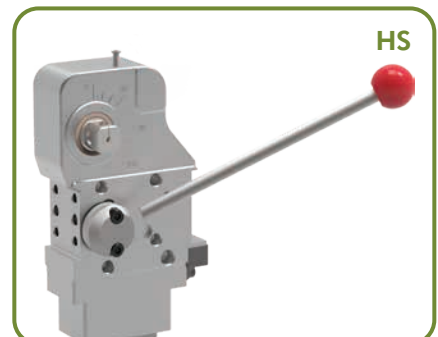
52H-3		E		23		H0		50		L8	
<b>Mounting</b>	<b>Description</b>	<b>Clamp Arm Shaft</b>	<b>Description</b>	<b>Handle Lever</b>	<b>Description</b>						
E	Standard	03	for U-Arms	H0	Hand lever						
N	NAAMS (Size 63 only)	23	for Lateral Arms	HS	Hand Lever (Weldable)						
		D0	for Lateral Arms (size 63 only)								

See below for further details



Shown with U-Arm  
(order separately)

Hand Lever



Clamp Arm Shaft



**Size** Shaft Length (L17)  
50 12 mm [0.47 in]  
63 12 mm [0.47 in]

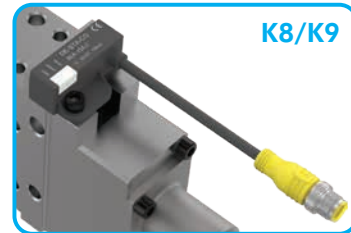
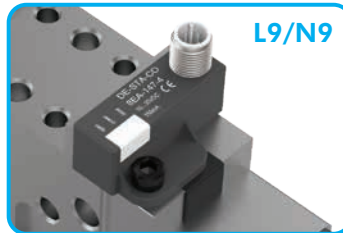
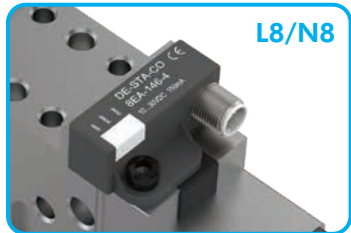
**23**  
**Size** Shaft Length (L17)  
50 21 mm [0.83 in]  
63 21 mm [0.83 in]

**D0**  
**Size** Shaft Length (L17)  
D0 26 mm [1.02 in]

## Enclosed Modular Manual Power Clamps | Heavy-Duty | Ordering Information

Sensor	Description
00	Without Sensing System
L8	PNP Sensor with In-line M12x1 Connector (8EA-146-4-B)
N8	NPN Sensor with In-line M12x1 Connector (8EA-154-4-B)
L9	PNP Sensor with 90° M12x1 Connector (8EA-147-4-B)
N9	NPN Sensor with 90° M12x1 Connector (8EA-155-4-B)
K8	PNP Sensor with M12x1 Cable Connector (8EA-158-4-B)
K9	NPN Sensor with M12x1 Cable Connector (8EA-167-4-B)

See page 69 for replacement sensor kits and components.



Size	Description
50	Size 50 mm
63	Size 63 mm



**50**

Max Holding Torque  
1300 Nm [959 ft-lb]



**63**

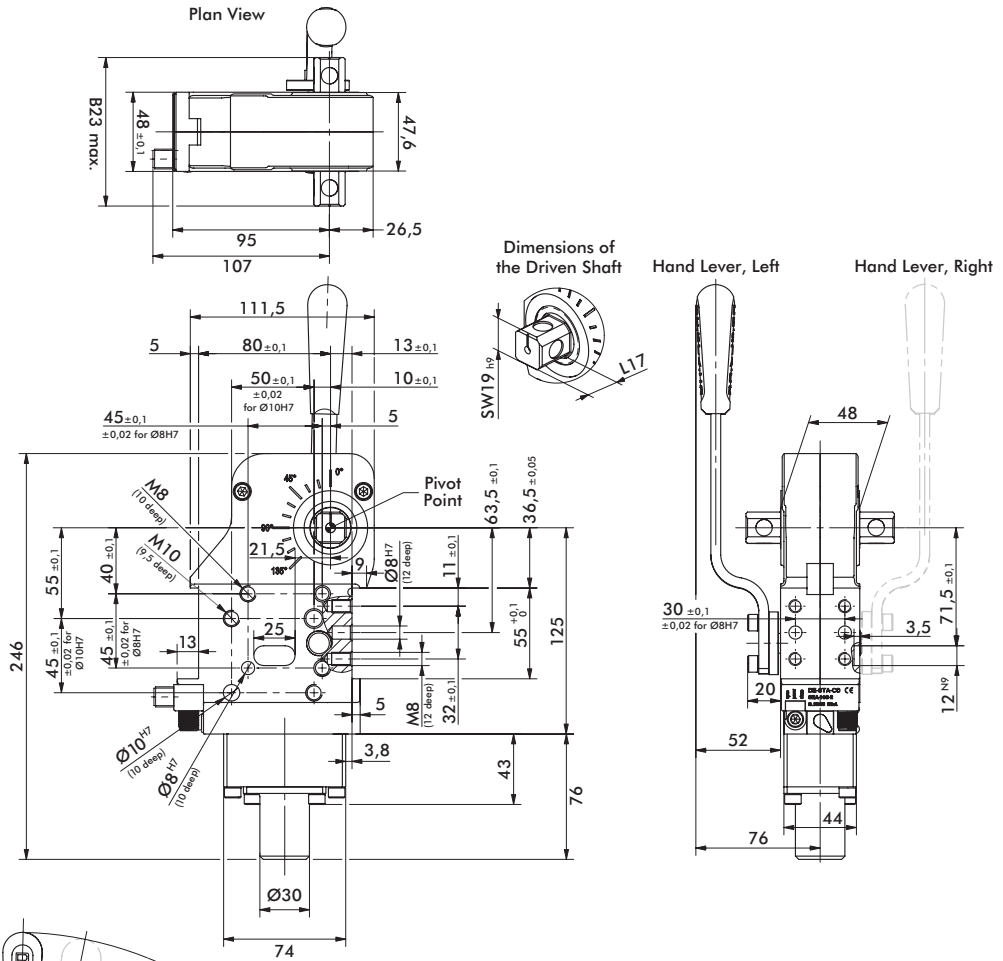
Max Holding Torque  
1800 Nm [1328 ft-lb]

**52H-3E..H.50/63**  
Modular manual  
clamp, interchangeable  
with 82M-3E...50/63

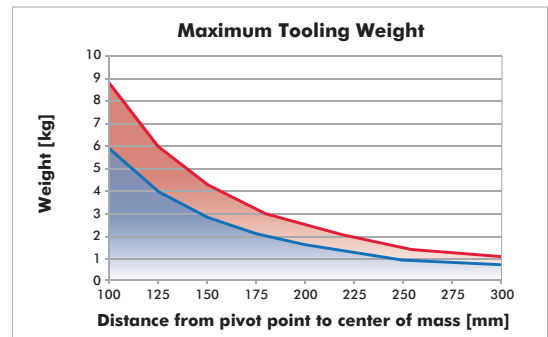
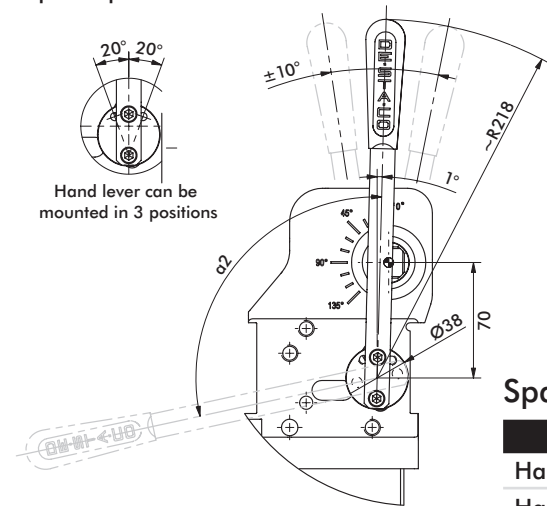
# 52H-3E 50MM

## Enclosed Modular Manual Power Clamps | Heavy-Duty | Dimensions and Technical Specifications

Model	Max. Holding Torque (Nm)	Weight (kg)	B23 max.	L17	Swivel Angle $\alpha_2$ (with reference to opening angle of clamping arm)									
					0°	15°	30°	45°	60°	75°	90°	105°	120°	135°
52H-3E03H050..	1300	2,75	72	12	-1°	30°	39°	46°	53°	61°	70°	81°	92°	103°
52H-3E23H050..		2,79	90	21										



**Notice!**  
The hand lever is supplied loose enclosed. Easy custom left hand or right hand mounting in required position.



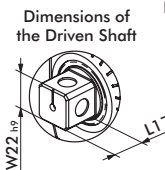
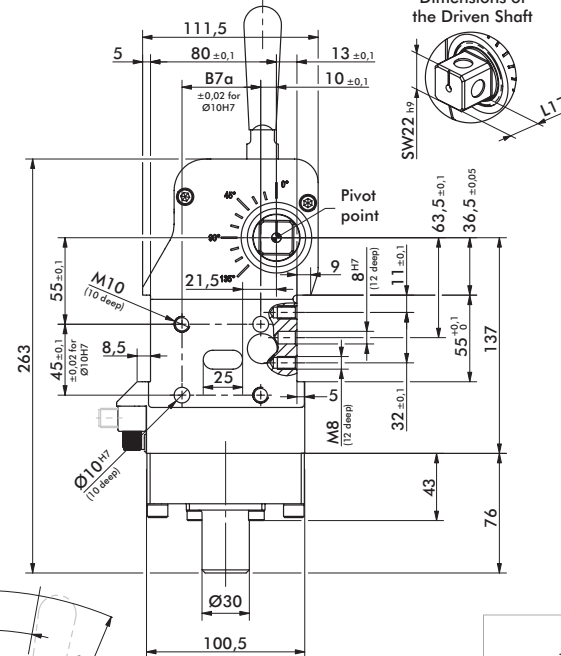
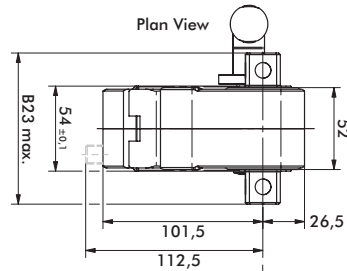
### Spare parts

Specification	Base component	Order no.	Comment
Hand lever set	52H-3E...50	8KB-098-1	
Hand lever set (weldable)		8KB-102-1	
Sensor box		8EA-146-2 (L8) 8EA-147-2 (L9) 8EA-158-2 (K8)	Connector 180° Connector 90° Cable Connection

# 52H-3E 63MM

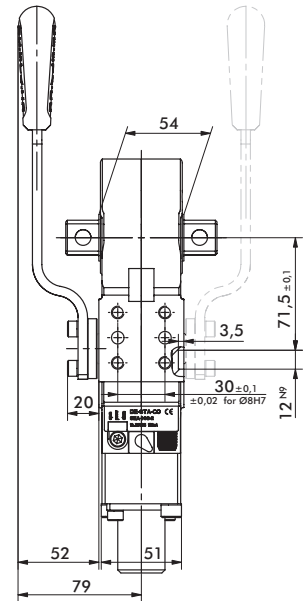
## Enclosed Modular Manual Power Clamps | Heavy-Duty | Dimensions and Technical Specifications

Model	Max. Holding Torque (Nm)	Weight (kg)	B7a	B23 max.	L17	Swivel Angle $\alpha_2$ (with reference to opening angle of clamping arm)										
						0°	15°	30°	45°	60°	75°	90°	105°	120°	135°	
52H-3E03H06...	1800	3,5	50	78	12											
52H-3N03H06...			55		21											
52H-3E23H06...		3,6	50	96	12	0°	30°	39°	47°	56°	66°	79°	94°	108°	119°	
52H-3N23H06...			55		21											
52H-3ND0H06...			55	106	26											



Hand lever, Left

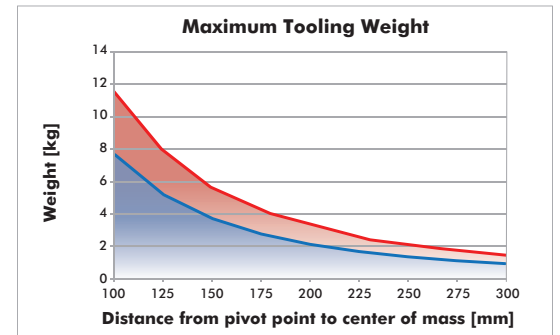
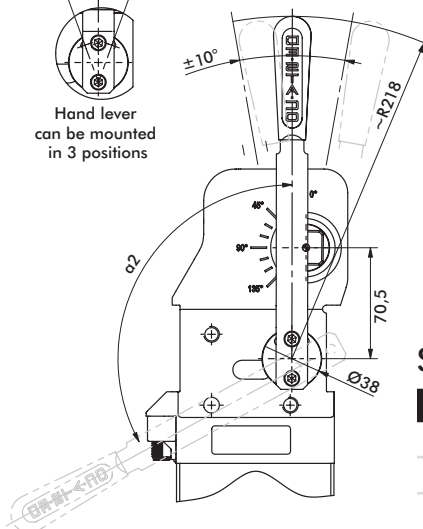
Hand lever, Right



**Notice!**  
The hand lever is supplied loose enclosed. Easy custom left hand or right hand mounting in required position.



Hand lever can be mounted in 3 positions



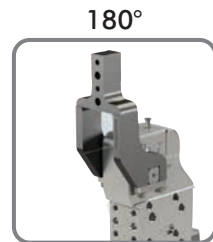
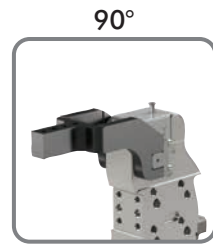
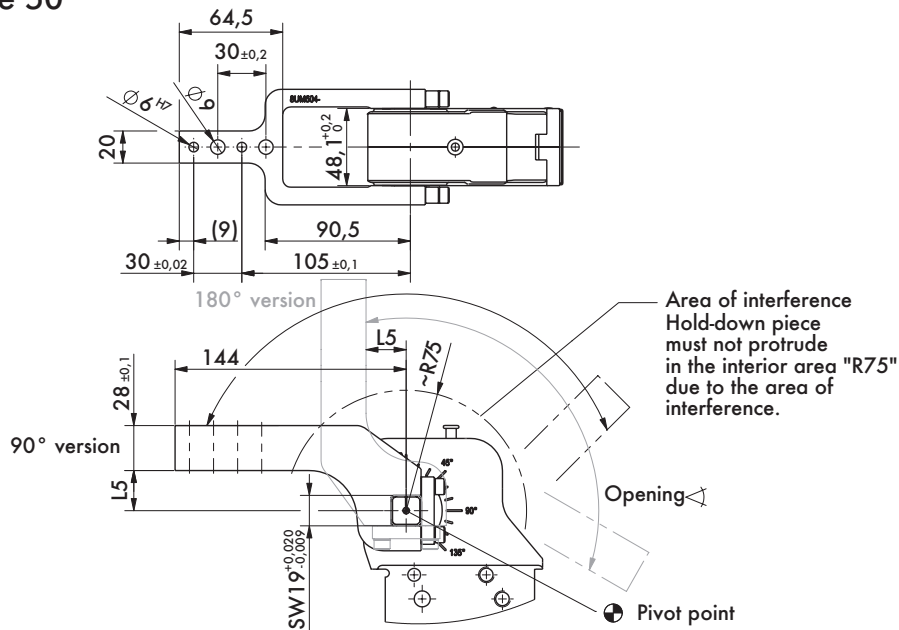
### Spare parts

Specification	Base component	Order no.	Comment
Hand lever set	52H-3E...63	8KB-099-1	
Hand lever set (weldable)		8KB-103-1	
Sensor box		8EA-146-2 (L8)	Connector 180°
		8EA-147-2 (L9)	Connector 90°
	8EA-158-2 (K8)	Cable Connection	

# U-ARMS CENTER (ALUMINUM)

Enclosed Modular Manual Power Clamps | Heavy-Duty | Dimensions and Technical Specifications

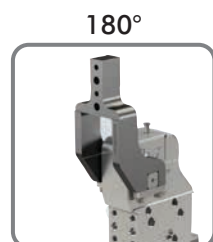
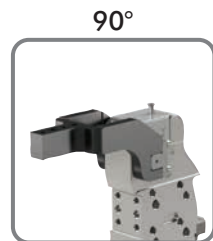
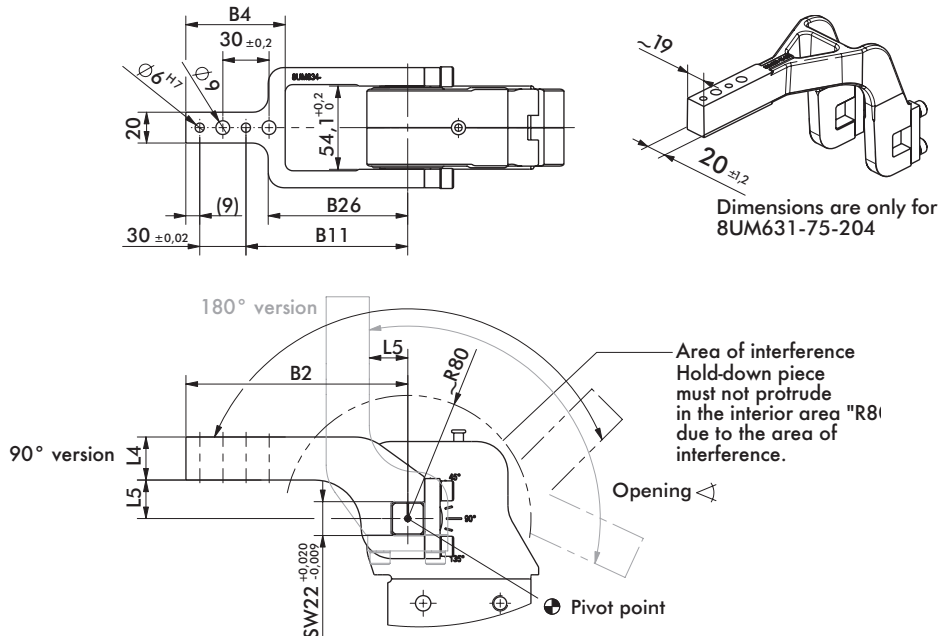
For Size 50



8UM504-15-144  
8UM504-25-144  
8UM504-45-144

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight	L5
8UM504-15-144		105°	0,44	15
8UM504-25-144	135°	120°	0,45	25
8UM504-45-144		135°	0,48	45

For Size 60



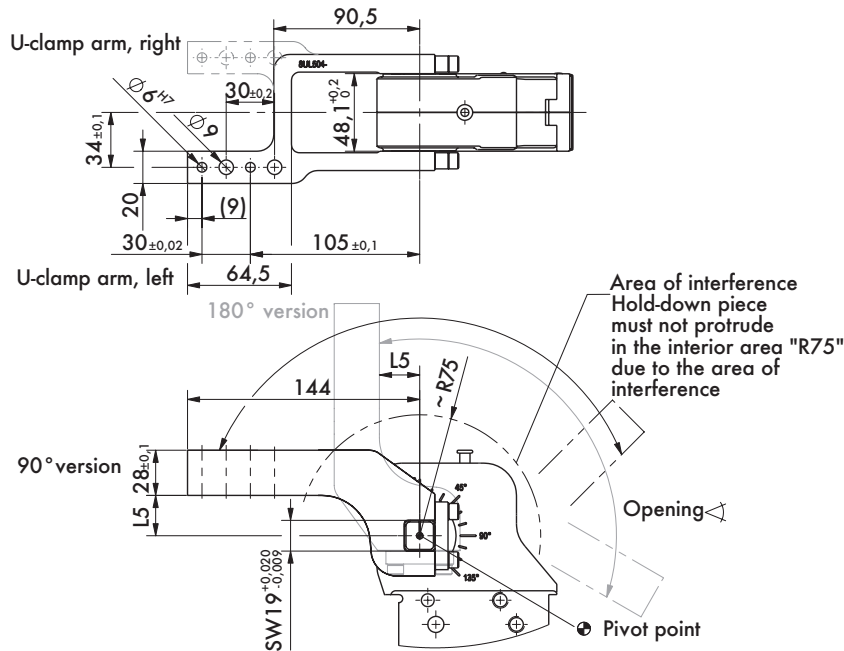
8UM634-15-144  
8UM634-25-144  
8UM634-45-144  
8UM631-75-204\*\*

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight	B2	B4	B11 ±0,1	B26	L4 ±0,1	L5
8UM634-15-144		105°	0,50						15
8UM634-25-144	135°	120°	0,53	144	64,5	105	90,5	28	25
8UM634-45-144		135°	0,56						45
8UM631-75-204**			1,7	204	82	165	107	30	75

\*\* only steel version available.

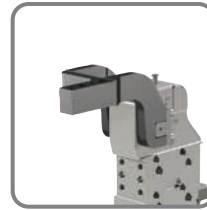
# U-ARMS OFFSET (ALUMINUM)

Enclosed Modular Manual Power Clamps | Heavy-Duty | Dimensions and Technical Specifications



For Size 50

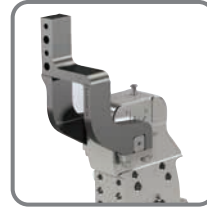
90° Left



90° Right



180° Right\*



180° Left\*

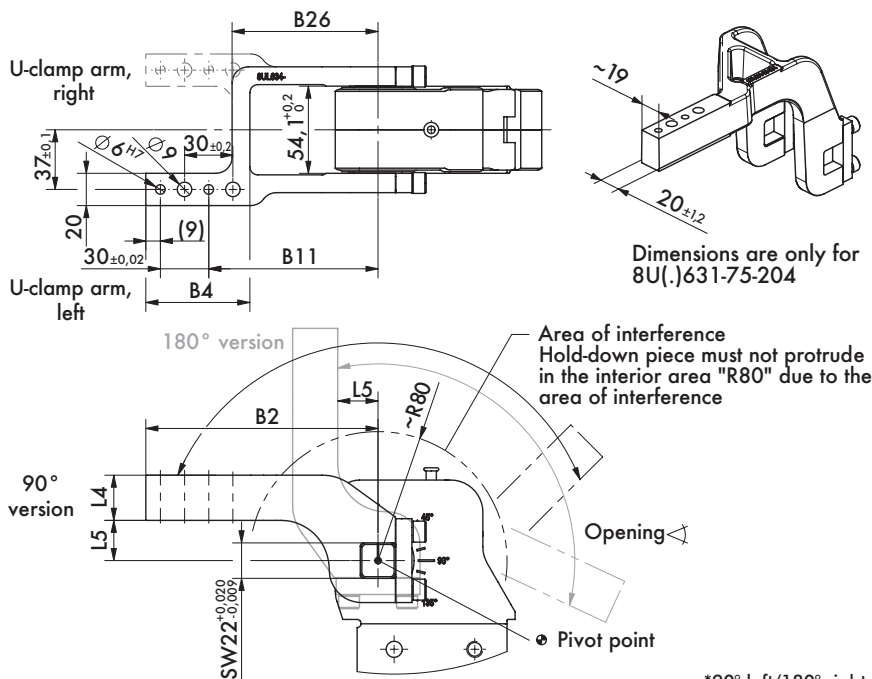


8UL504-15-144  
8UL504-25-144  
8UL504-45-144

8UR504-15-144  
8UR504-25-144  
8UR504-45-144

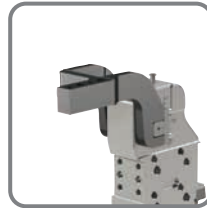
\*90° left/180° right uses same clamp arm. 90° right/180° left uses same clamp arm.

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight	L5
8U(•)504-15-144	135°	105°	0,45	15
8U(•)504-25-144		120°	0,46	25
8U(•)504-45-144		135°	0,49	45



For Size 63

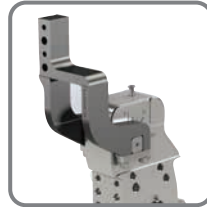
90° Left



90° Right



180° Right\*



180° Left\*



8UL634-15-144  
8UL634-25-144  
8UL634-45-144  
8UL631-75-204\*\*

8UR634-15-144  
8UR634-25-144  
8UR634-45-144  
8UR631-75-204\*\*

\*90° left/180° right uses same clamp arm. 90° right/180° left uses same clamp arm.

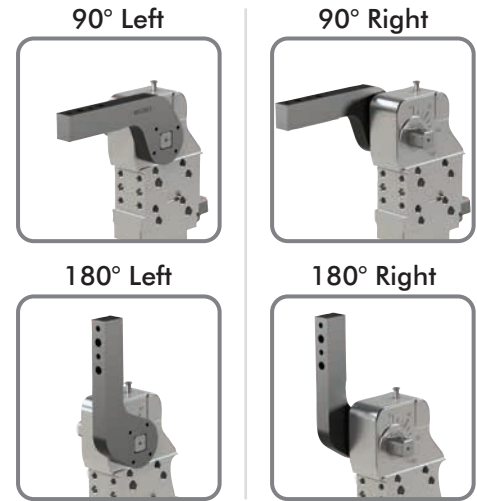
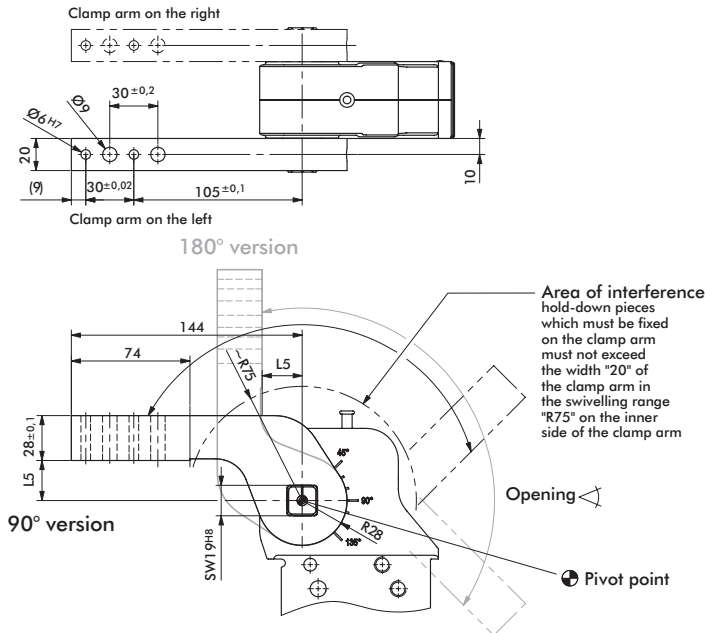
Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight	B2	B4	B11 ±0,1	B26	L4 ±0,1	L5
8U(•)634-15-144	135°	105°	0,52						15
8U(•)634-25-144		120°	0,54	144	64,5	105	90,5	28	25
8U(•)634-45-144		135°	0,58						45
8U(•)631-75-204**		135°	1,9	204	82	165	119	30	75

\*\* only steel version available.

# LATERAL (SIDE) ARMS

Enclosed Modular Manual Power Clamps | Heavy-Duty | Dimensions and Technical Specifications

For Size 50

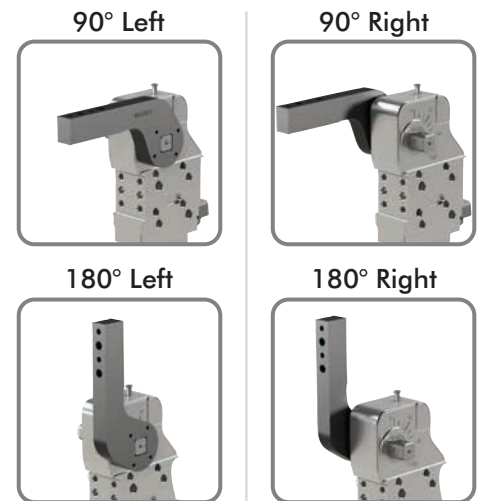
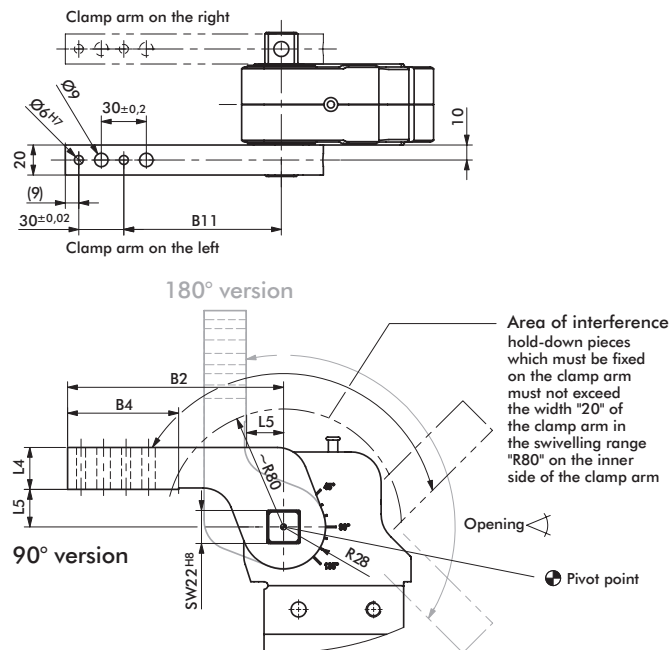


8JG-070-1-01  
8S501-25-144

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	L5
8JG-070-1-01	135°	135°	0,9	15
8S501-25-144			1,0	25

Models with 2 lateral clamp arms requires 2 clamp arm sets.

For Size 63



8JG-080-1-01  
8S631-25-144  
8S631-45-144  
8S631-75-204

Arm Model No.	Max. Opening 90° Version	Max. Opening 180° Version	Weight (kg)	B2	B4	B11 ±0,1	L4 ±0,1	L5
8JG-080-1-01	135°	135°	0,9	144	74	105	28	15
8S631-25-144			1,0					25
8S631-45-144			1,1					45
8S631-75-204			1,5					204

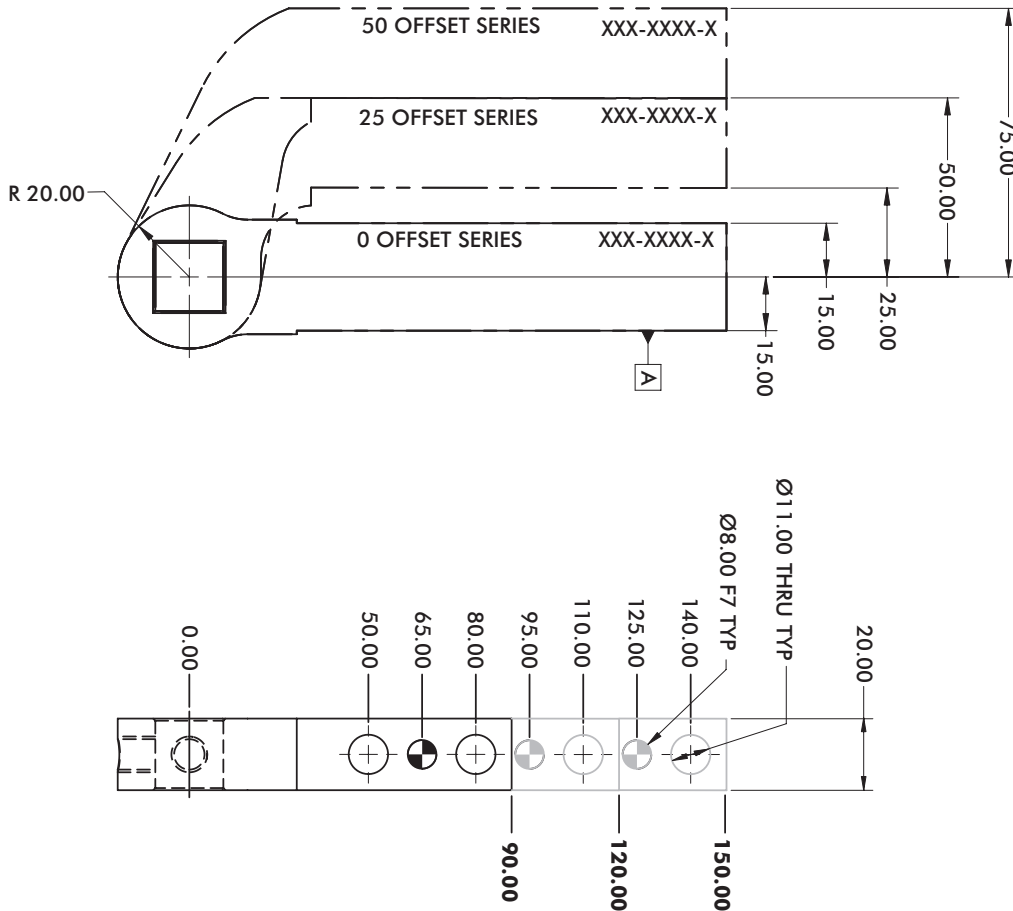
Models with 2 lateral clamp arms requires 2 clamp arm sets.



# LATERAL (SIDE) ARMS, NAAMS-STYLE

Enclosed Modular Manual Power Clamps | Heavy-Duty | Dimensions and Technical Specifications

For Size 50



## 9mm Thru Hole (6.00 H7 Dowel)

90mm [3.54"] Arm Length			120mm [4.72"] Arm Length			150mm [5.90"] Arm Length		
Series	Arm Style	Model	Series	Arm Style	Model	Series	Arm Style	Model
50 Offset	▲ • 3256	B8JG-3256-1	50 Offset	▲ • 3257	B8JG-3257-1	50 Offset	▲ • 3258	B8JG-3258-1
25 Offset	▲ • 3246	B8JG-3246-1	25 Offset	▲ • 3247	B8JG-3247-1	25 Offset	▲ • 3248	B8JG-3248-1
0 Offset	▲ • 3236	B8JG-3236-1	0 Offset	▲ • 3237	B8JG-3237-1	0 Offset	▲ • 3238	B8JG-3238-1

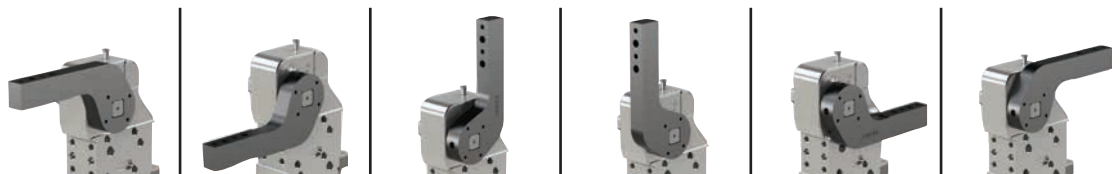
## 11mm Thru Hole (8.00 F7 Dowel)

90mm [3.54"] Arm Length			120mm [4.72"] Arm Length			150mm [5.90"] Arm Length		
Series	Arm Style	Model	Series	Arm Style	Model	Series	Arm Style	Model
50 Offset	▲ • 1226	B8JG-1226-1	50 Offset	▲ • 1227	B8JG-1227-1	50 Offset	▲ • 1228	B8JG-1228-1
25 Offset	▲ • 1216	B8JG-1216-1	25 Offset	▲ • 1217	B8JG-1217-1	25 Offset	▲ • 1218	B8JG-1218-1
0 Offset	▲ • 1206	B8JG-1206-1	0 Offset	▲ • 1207	B8JG-1207-1	0 Offset	▲ • 1208	B8JG-1208-1

▲ Common in North America

(•) STANDARD ARM OFFERING

## Maximum Opening Angle (shown in locked position)

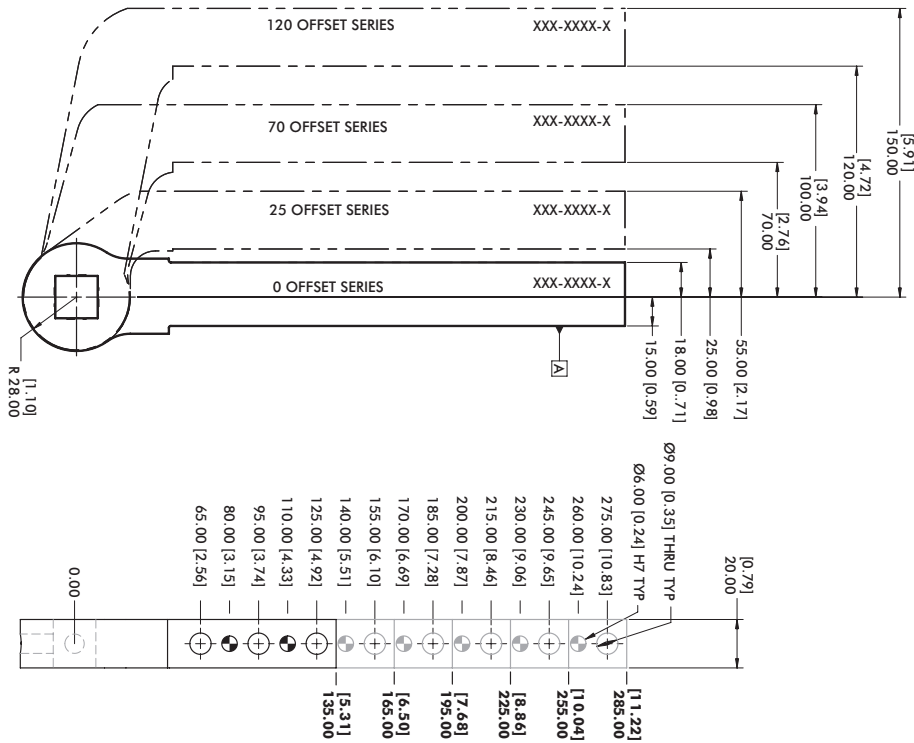


Arm Styles	135°	135°	100°	100°	N/A	N/A
1206-1208/3236-3238	135°	135°	100°	100°	N/A	N/A
1216-1218/3246-3248	135°	N/A	50°	125°	N/A	30°
1226-1228/3256-3258	125°	N/A	35°	135°	N/A	50°

# LATERAL (SIDE) ARMS, NAAMS-STYLE

Enclosed Modular Manual Power Clamps | Heavy-Duty | Dimensions and Technical Specifications

For Size 63mm for 23 Clamp Arm Shaft Option



## 135mm [5.31"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1543	B8JG-1543-1
70 Offset	▲ 1531	B8JG-1531-1
25 Offset	▲ 1519	B8JG-1519-1
0 Offset	▲ 1507	B8JG-1507-1

## 165mm [6.50"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1544	B8JG-1544-1
70 Offset	▲ 1532	B8JG-1532-1
25 Offset	▲ 1520	B8JG-1520-1
0 Offset	▲ 1508	B8JG-1508-1

## 195mm [7.68"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1545	B8JG-1545-1
70 Offset	▲ 1533	B8JG-1533-1
25 Offset	▲ 1521	B8JG-1521-1
0 Offset	▲ 1509	B8JG-1509-1

## 225mm [8.86"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1546	B8JG-1546-1
70 Offset	▲ 1534	B8JG-1534-1
25 Offset	▲ 1522	B8JG-1522-1
0 Offset	▲ 1510	B8JG-1510-1

## 255mm [10.04"] Arm Length

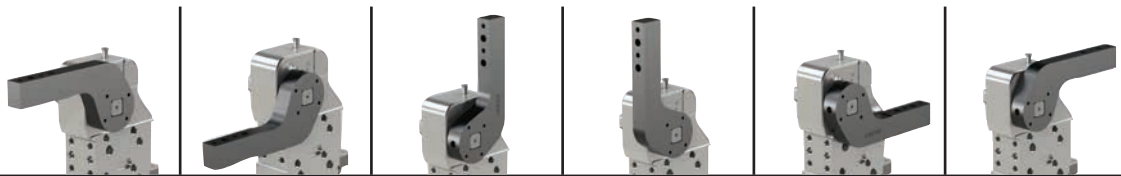
Series	Arm Style	Model
120 Offset	▲ 1547	B8JG-1547-1
70 Offset	▲ 1535	B8JG-1535-1
25 Offset	▲ 1523	B8JG-1523-1
0 Offset	▲ 1511	B8JG-1511-1

## 285mm [11.22"] Arm Length

Series	Arm Style	Model
120 Offset	▲ 1548	B8JG-1548-1
70 Offset	▲ 1536	B8JG-1536-1
25 Offset	▲ 1524	B8JG-1524-1
0 Offset	▲ 1512	B8JG-1512-1

▲ Common in North America

## Maximum Opening Angle (shown in locked position)

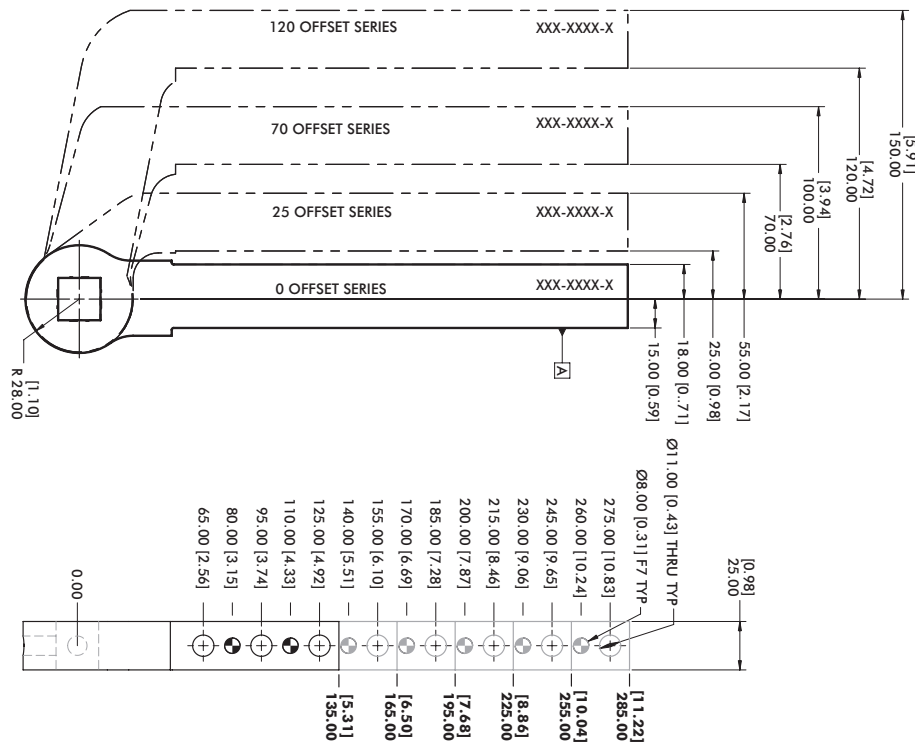


Arm Styles	135°	135°	100°	100°	N/A	N/A
1510-1512/1507-1509	135°	135°	100°	100°	N/A	N/A
1522-1524/1519-1521	135°	N/A	50°	130°	N/A	40°
1534-1536/1531-1533	115°	N/A	25°	135°	N/A	75°
1546-1548/1543-1545	110°	N/A	20°	135°	N/A	85°

# LATERAL (SIDE) ARMS, NAAMS-STYLE

Enclosed Modular Manual Power Clamps | Heavy-Duty | Dimensions and Technical Specifications

For Size 63mm for DO Clamp Arm Shaft Option



### 135mm [5.31"] Arm Length

Series	Arm Style	Model
120 Offset	▲ • 1043	B8JG-1043-1
70 Offset	▲ • 1031	B8JG-1031-1
25 Offset	▲ • 1019	B8JG-1019-1
0 Offset	▲ • 1007	B8JG-1007-1

### 165mm [6.50"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ① 1044	B8JG-1044-1
70 Offset	▲ • 1032	B8JG-1032-1
25 Offset	▲ • 1020	B8JG-1020-1
0 Offset	▲ • 1008	B8JG-1008-1

### 195mm [7.68"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ① 1045	B8JG-1045-1
70 Offset	▲ • 1033	B8JG-1033-1
25 Offset	▲ ① 1021	B8JG-1021-1
0 Offset	▲ • 1009	B8JG-1009-1

### 225mm [8.86"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ① 1046	B8JG-1046-1
70 Offset	▲ • 1034	B8JG-1034-1
25 Offset	▲ ① 1022	B8JG-1022-1
0 Offset	▲ ① 1010	B8JG-1010-1

### 255mm [10.04"] Arm Length

Series	Arm Style	Model
120 Offset	▲ ① 1047	B8JG-1047-1
70 Offset	▲ • 1035	B8JG-1035-1
25 Offset	▲ ① 1023	B8JG-1023-1
0 Offset	▲ ① 1011	B8JG-1011-1

### 285mm [11.22"] Arm Length

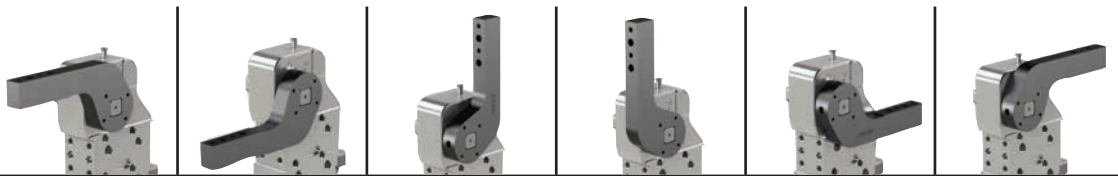
Series	Arm Style	Model
120 Offset	▲ ① 1048	B8JG-1048-1
70 Offset	▲ ① 1036	B8JG-1036-1
25 Offset	▲ ① 1024	B8JG-1024-1
0 Offset	▲ ① 1012	B8JG-1012-1

▲ Common in North America

(•) STANDARD ARM OFFERING

① NON-STANDARD ARM OFFERING (extended leadtimes apply)

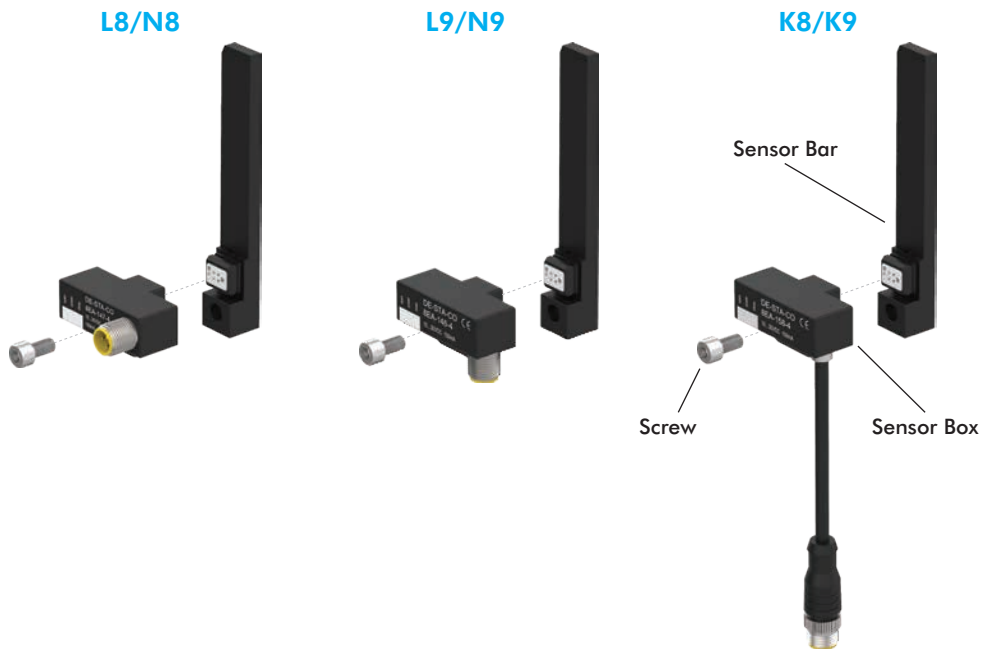
### Maximum Opening Angle (shown in locked position)



Arm Styles	135mm	165mm	195mm	225mm	255mm	285mm
1010-1012/1007-1009	135°	135°	100°	100°	N/A	N/A
1022-1024/1019-1021	135°	N/A	50°	130°	N/A	40°
1034-1036/1031-1033	115°	N/A	25°	135°	N/A	75°
1046-1048/1043-1045	110°	N/A	20°	135°	N/A	85°

# TCC-2, 82M-3, 52H-3 SENSORS

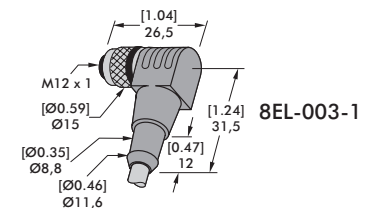
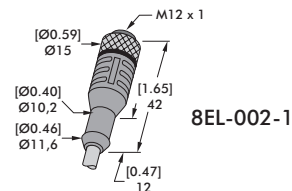
## Replacement Sensor Kits and Components

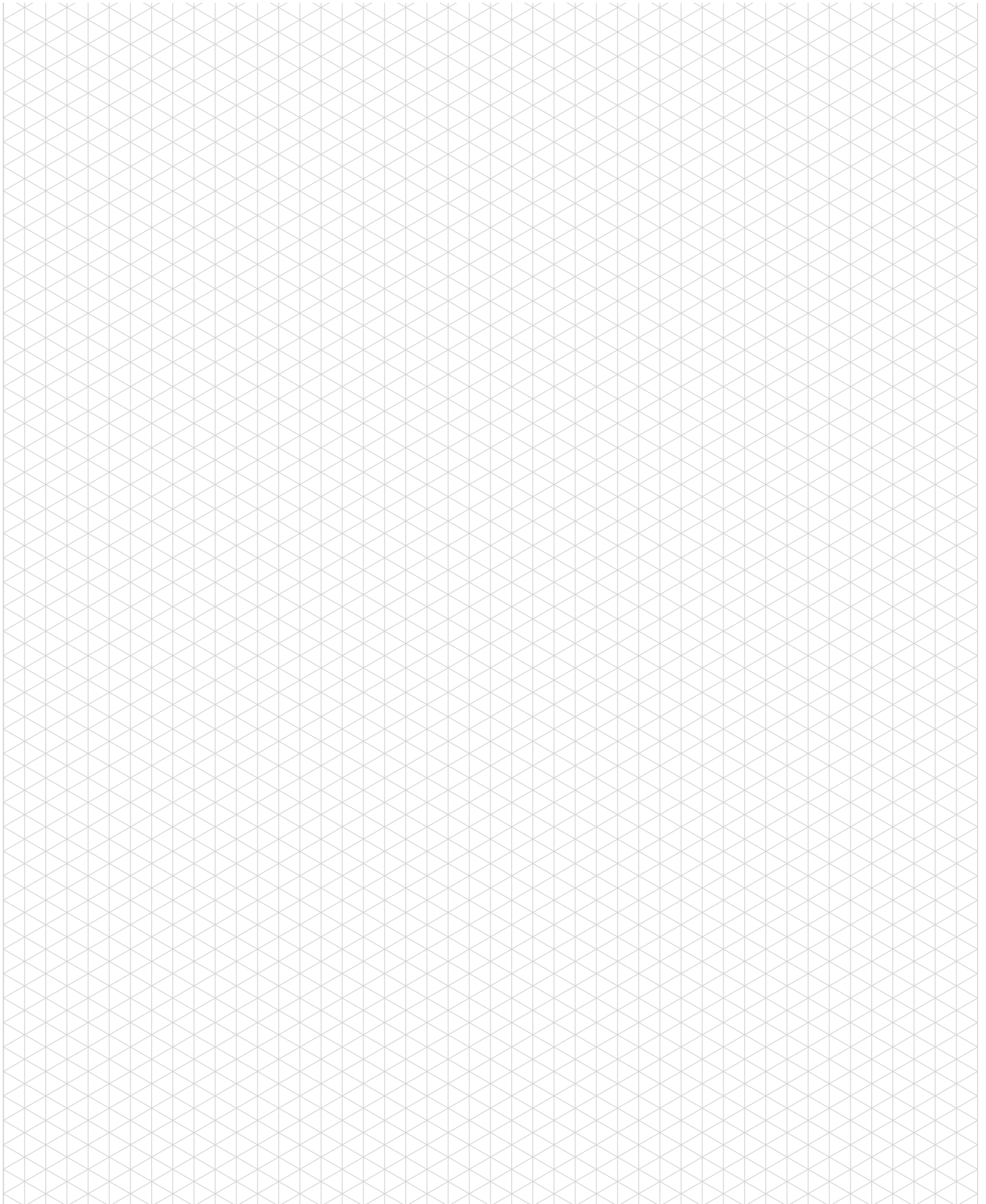


Fits Base Models	Complete Sensor Kits (Includes Sensor Box, Sensor Bar, Screw)			Component Part No.		
	Order No.	Description	Replacement Kit	Sensor Box	Sensor Bar	Screw
TCC-2.....4.	L8	PNP w/In-line M12x1 Connector	8EA-146-4-B-03	8EA-146-4-B	8EA-168-4-G	M6X12-912-ZN
	N8	NPN w/In-line M12x1 Connector	8EA-154-4-B-03	8EA-154-4-B		
	L9	PNP w/90° M12x1 Connector	8EA-147-4-B-03	8EA-147-4-B		
	N9	NPN w/90° M12x1 Connector	8EA-155-4-B-03	8EA-155-4-B		
	K8	PNP w/M12x1 Cable Connector	8EA-158-4-B-03	8EA-158-4-B		
	K9	NPN w/M12x1 Cable Connector	8EA-167-4-B-03	8EA-167-4-B		
TCC-2.....5., 6. 82M-3.....4., 5., 6. 52H-3.....50, 63	L8	PNP w/In-line M12x1 Connector	8EA-146-4-B-01	8EA-146-4-B	8EA-148-4-G	M6X12-912-ZN
	N8	NPN w/In-line M12x1 Connector	8EA-154-4-B-01	8EA-154-4-B		
	L9	PNP w/90° M12x1 Connector	8EA-147-4-B-01	8EA-147-4-B		
	N9	NPN w/90° M12x1 Connector	8EA-155-4-B-01	8EA-155-4-B		
	K8	PNP w/M12x1 Cable Connector	8EA-158-4-B-01	8EA-158-4-B		
	K9	NPN w/M12x1 Cable Connector	8EA-167-4-B-01	8EA-167-4-B		
82M-3.....8.	L8	PNP w/In-line M12x1 Connector	8EA-146-4-B-02	8EA-146-4-B	8EA-149-4-G	M6X12-912-ZN
	N8	NPN w/In-line M12x1 Connector	8EA-154-4-B-02	8EA-154-4-B		
	L9	PNP w/90° M12x1 Connector	8EA-147-4-B-02	8EA-147-4-B		
	N9	NPN w/90° M12x1 Connector	8EA-155-4-B-02	8EA-155-4-B		
	K8	PNP w/M12x1 Cable Connector	8EA-158-4-B-02	8EA-158-4-B		
	K9	NPN w/M12x1 Cable Connector	8EA-167-4-B-02	8EA-167-4-B		

Sensor Cables Order separately

Order No.	Description
8EL-002-1	M12x1, Straight, 5-pin Connector with 5 m [16 ft] Cable
8EL-003-1	M12x1, Angular, 4-pin Connector with 5 m [16 ft] Cable





# 82D40-2/82D63-5

## Enclosed Pneumatic Power Clamps | Dual Arm | Features and Benefits | Technical Information

**Base Model**

Base Model	Description
82D40-2	40 mm Cylinder (G1/4 Port)
82D63-5	63 mm Cylinder (G1/4 Port)

**Hand Lever**

Hand Lever	Description
0	Hand Lever not available

**Clamp Arms**

**B**

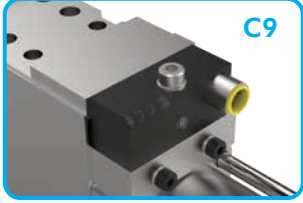
Description  
Base model only. Order clamps arms separately. See below.

**Clamp Arm Shaft**

Clamp Arm Shaft	Description
23	includes long drive shaft ends on both sides fit for all clamping arms (standard)

**Sensor**

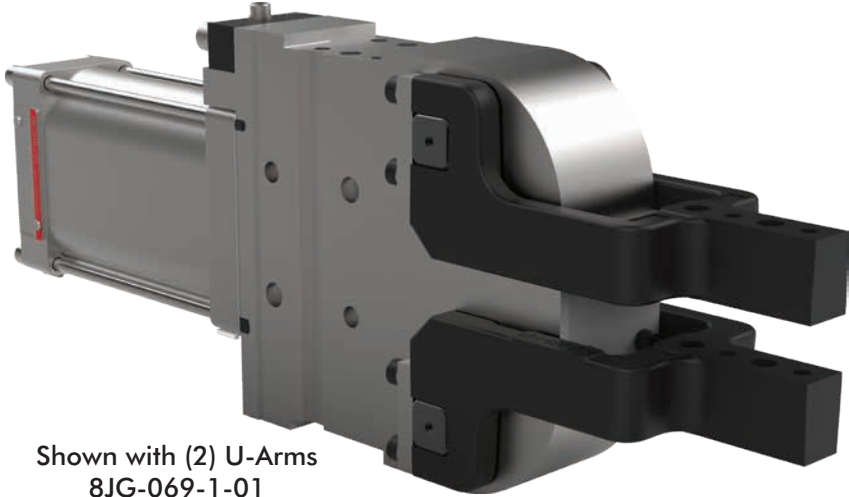
Sensor	Description
C9	includes Sensing System with M12x1 Connector (8EA-024-2) Standard




**Opening Angle**

Opening Angle	Opening Angle
0	180° (standard)
1	160°
2	140°
3	120°
4	100°
5	80°
6	60°
7	40°
8	20°


*Reduced opening angles available upon request.*



Shown with (2) U-Arms  
8JG-069-1-01  
(order separately)




**82D63-5**  
Max Holding  
400 Nm [295 ft-lb]  
Max Clamping Torque  
120 Nm [88 ft-lb]  
at 5 bar [72 psi]

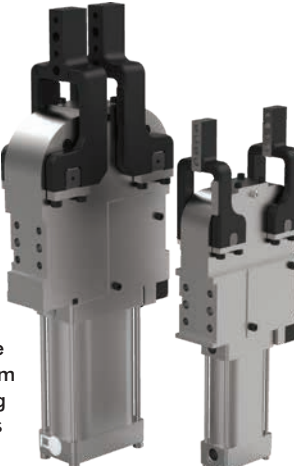


**82D40-2**  
Max Holding  
140 Nm [103 ft-lb]  
Max Clamping Torque  
60 Nm [44 ft-lb]  
at 5 bar [72 psi]

### U-type Central Clamping Arm




Model	Order No. (1 clamp arm)
82D40-223C900B	8JG-065-2-01
82D63-523C900B	8JG-069-1-01



Alternate Clamp Arm mounting positions

### Lateral Clamping Arm

Clamp Arm Variants  
Left Side, Right Side, Both Sides



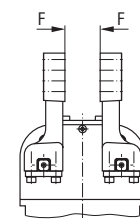
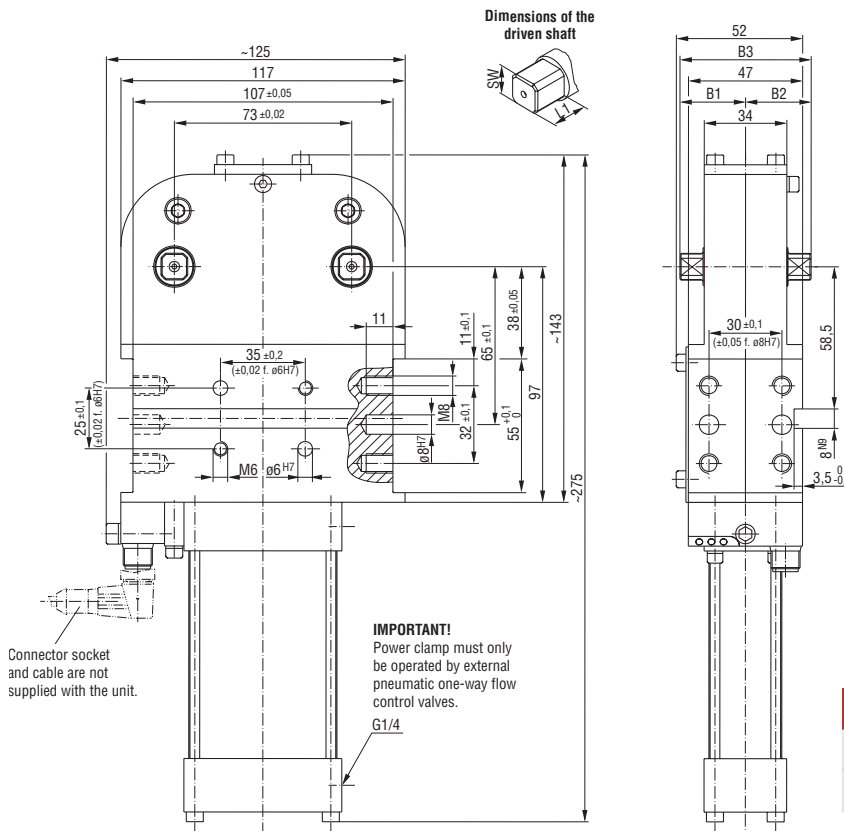
Model	Order No. (1 clamp arm)
82D40-223C900B	8JG-066-1-01
82D63-523C900B	8JG-070-1-01

# 82D40-2/82D63-5

## Enclosed Pneumatic Power Clamps | Dual Arm | Dimensions

Model	Clamping position	Standard opening angle	Driveshaft	Max. holding torque Nm [ft-lb]	Clamping torque at 5 bar Nm [ft-lb]	Cylinder Ø mm [in]	Air consumption per double stroke at 5 bar dm <sup>3</sup> [ft <sup>3</sup> ]	Weight ~ kg [lbs]
82D40-223C900B	vertical	180°	lateral, both sides U-type clamping arms	55 [40]	55 [40]	40 [1.57]	1,2 [0.04]	2,5 [5.50]
82D63-523C900B				120 [88]	120 [88]	63 [2.48]	3,8 [0.13]	4,5 [9.90]

### 82D40-223C900B



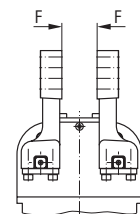
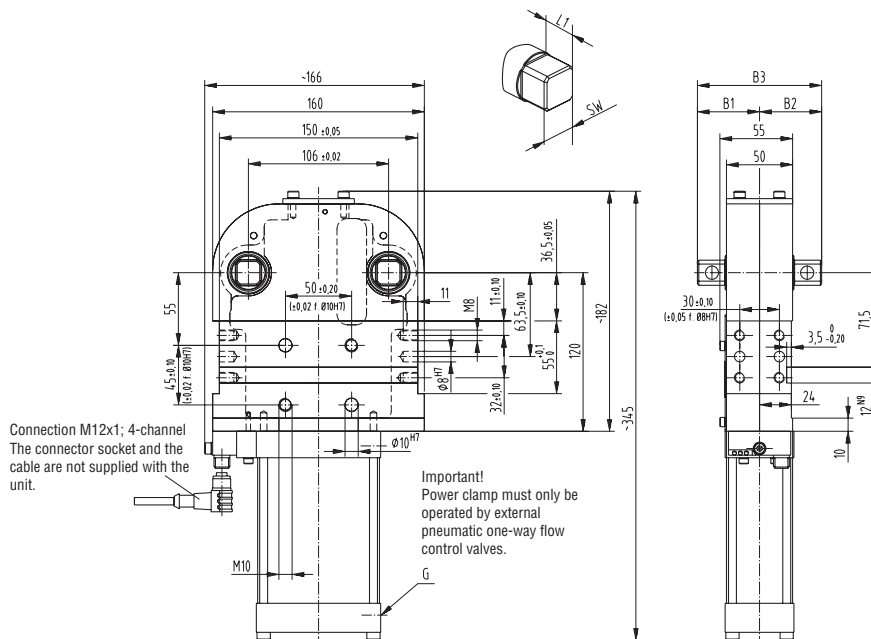
#### Safety notice:

The load on the clamping arms must always point towards the clamping direction. Single load of one arm is prohibited

Medium: air, max. 6 bar, operation with oil-free air is permissible

Model	B1	B2	B3	L1	SW	G
82D40-223C900B	30	30	60	12,5	11	1/4
82D63-523C900B	47	47	94	21	19	

### 82D63-523C900B



#### Safety notice:

The load on the clamping arms must always point towards the clamping direction. Single load of one arm is prohibited

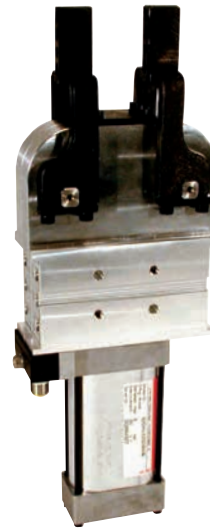
Medium: air, max. 6 bar, operation with oil-free air is permissible

# U-ARMS CENTER (STEEL)

Enclosed Pneumatic Power Clamps | Dual Arm | Dimensions and Technical Specifications

- Clamping arm variants for **82D40-2**

Clamping arm variant U-type central clamping arm

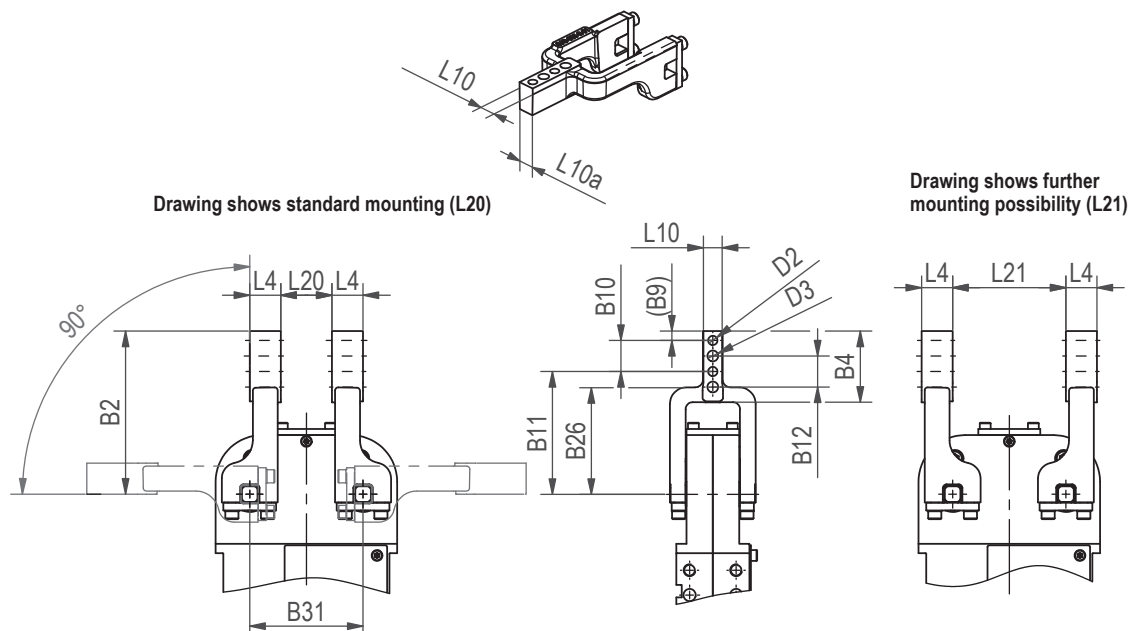


Base model with 2 U-type clamping arms, small gap between clamping arms

## U-type central clamping arm | Technical Information

Model	Order no. for U-type clamping arm set (1 clamping arm)	Clamping position	Standard opening angle	B2	B4	B9	B10	B11	B12	B26			
82D40-223C900B	8JG-065-2-01	vertical	180°	105	45,3	6	±0,02	+0,1	±0,2	20	79	20	68,2

Model	Order no. for U-type clamping arm set (1 clamping arm)	B31	D2	D3	L4	L10	L10a	L20	L21
82D40-223C900B	8JG-065-2-01	±0,02	H7 ∅	∅		±1,1	~		
82D40-223C900B	8JG-065-2-01	73	6	7	20	12	11,3	33	73



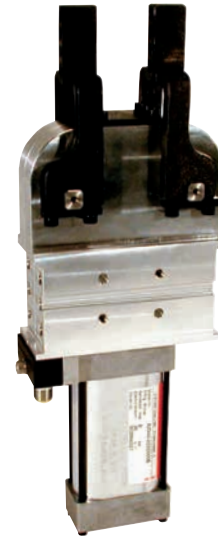


# U-ARMS CENTER (STEEL)

Enclosed Pneumatic Power Clamps | Dual Arm | Dimensions and Technical Specifications

- Clamping arm variants for **82D63-5**

Clamping arm variant U-type central clamping arm

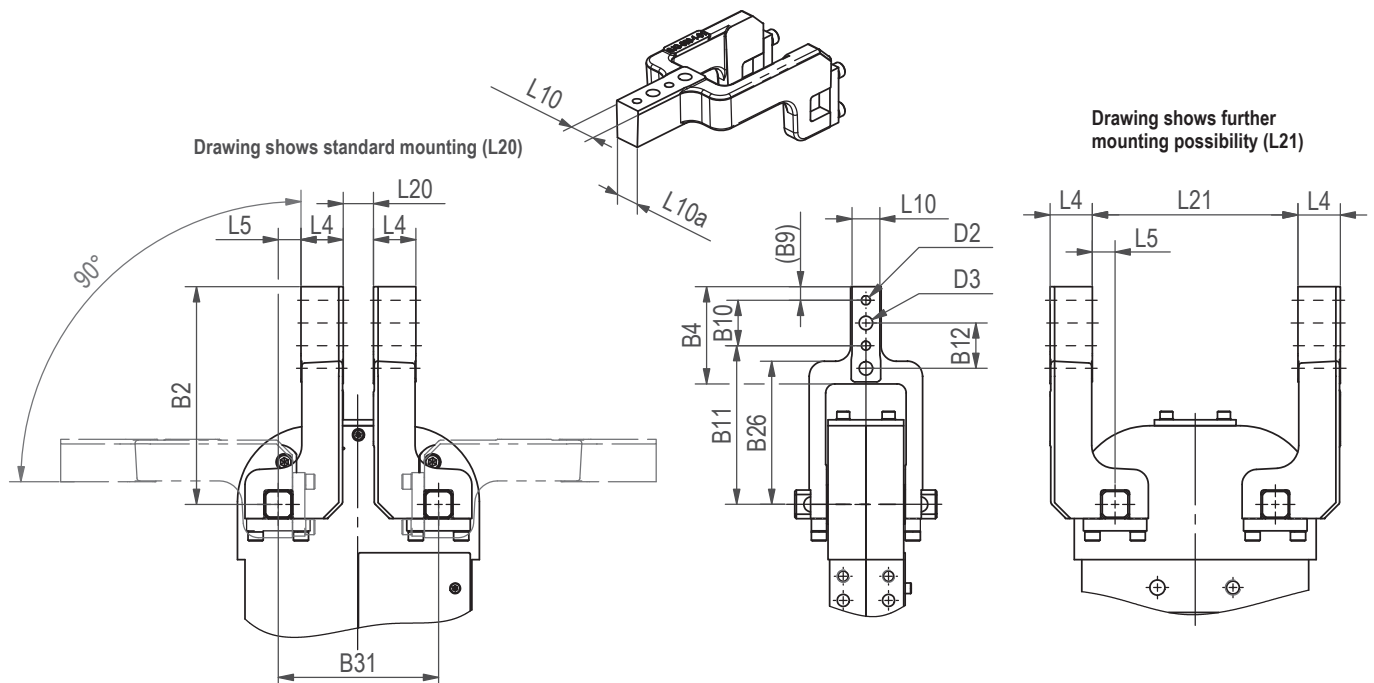


Base model with 2 U-type clamping arms, small gap between clamping arms

## U-type central clamping arms | Technical Information

Model	Order no. for U-type clamping arm set (1 clamping arm)	Clamping position	Standard opening angle	B2	B4	B9	B10	B11	B12	B26
82D63-523C900B	8JG-069-1-01	vertical	180°	144	64,3	9	±0,02	+0,1	±0,2	95

Model	Order no. for U-type clamping arm set (1 clamping arm)	B31	D2	D3	L4	L5	L10	L10a	L20	L21
82D63-523C900B	8JG-069-1-01	±0,02	H7 ∅	∅	28	15	±1,2	~	20	136



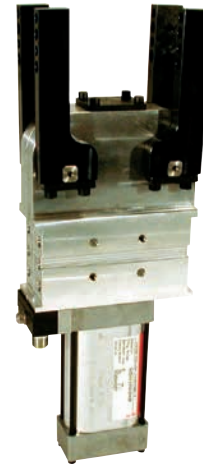
# LATERAL (SIDE) ARMS

## Enclosed Pneumatic Power Clamps | Dual Arm | Dimensions and Technical Specifications

- Clamping arm variants for **82D40-2**

### Clamping arm variant

- Lateral clamping arm left
- Lateral clamping arm right
- Lateral clamping arm both sides



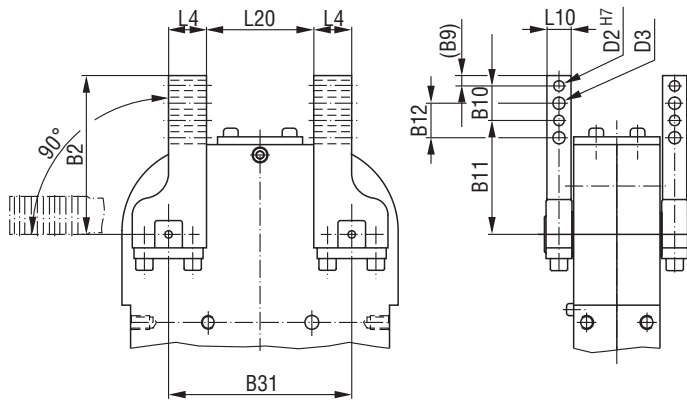
Base model with 4 lateral clamping arms, large gap between clamping arms

### Lateral clamping arm | Technical Information

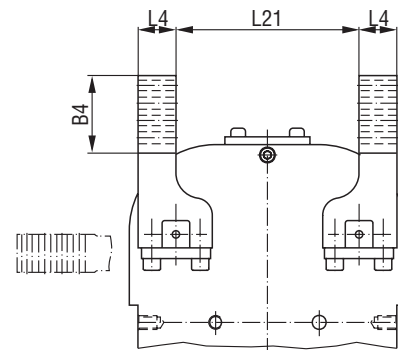
Model	Clamping arm variant	Order no. for 1 set of lateral clamping arms (1 clamping arm)	Clamping position	Standard opening angle	B2	B4	B9	B10	B11	B12
82D40-223C900B	lateral, left lateral, right lateral, both sides	8JG-066-1-01	vertical	180°	105	45	6	±0,02	+0,1	±0,2

Model	Clamping arm variant	Order no. for 1 set of lateral clamping arms (1 clamping arm)	B31	D2	D3	L4	L10	L20	L21
82D40-223C900B	lateral, left lateral, right lateral, both sides	8JG-066-1-01	±0,02	H7 ∅	∅		-0,1		
82D40-223C900B	lateral, left lateral, right lateral, both sides	8JG-066-1-01	73	6	7	20	12	33	73

Drawing shows standard mounting (L20) with four lateral clamp arms



Drawing shows further mounting possibility (L21)



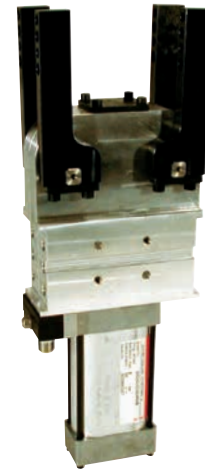
# LATERAL (SIDE) ARMS

## Enclosed Pneumatic Power Clamps | Dual Arm | Dimensions and Technical Specifications

- Clamping arm variants for **82D63-5**

### Clamping arm variant

- Lateral clamping arm left
- Lateral clamping arm right
- Lateral clamping arm both sides



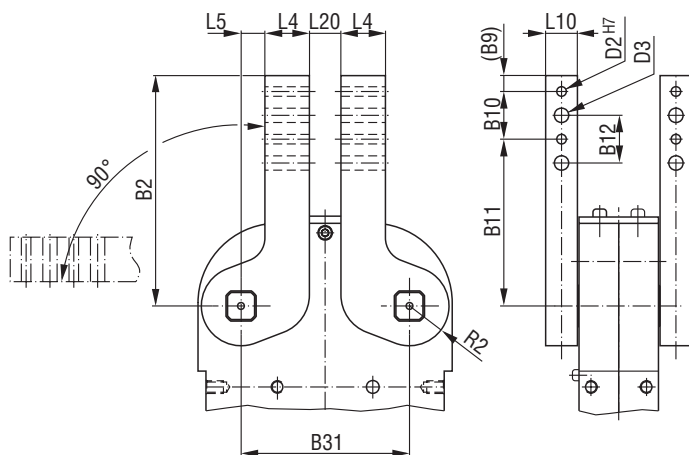
Base model with 4 lateral clamping arms, large gap between clamping arms

### Lateral clamping arms | Technical Information

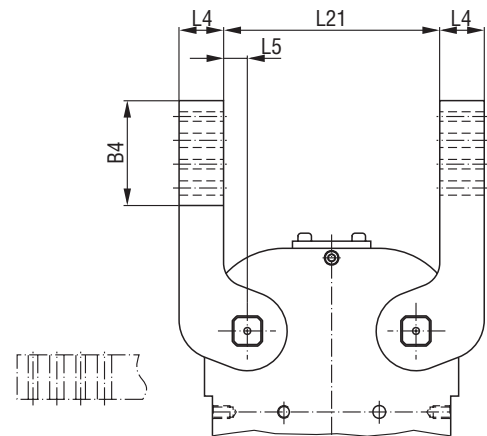
Model	Clamping arm variant	Order no. for 1 set of lateral clamping arms (1 clamping arm)	Clamping position	Standard opening angle	B2	B4	B9	B10	B11	B12
82D63-523C900B	lateral, left lateral, right lateral, both sides	8JG-070-1-01	vertical	180°	144	74	9	30	105	30

Model	Clamping arm variant	Order no. for 1 set of lateral clamping arms (1 clamping arm)	B31	D2	D3	L4	L5	L10	L20	L21	R2
82D63-523C900B	lateral, left lateral, right lateral, both sides	8JG-070-1-01	±0,02	H7 ∅	∅	28	15	20	20	136	28

Drawing shows standard mounting (L20) with four lateral clamp arms



Drawing shows further mounting possibility (L21)

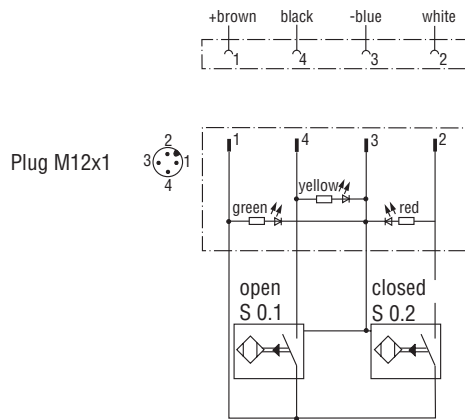


# 82D40-2/82D63-5

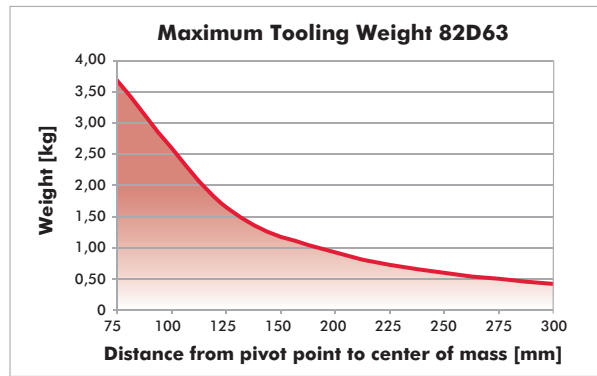
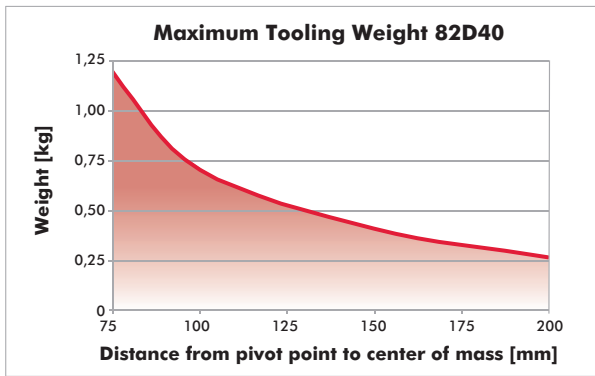
## Enclosed Pneumatic Power Clamps | Dual Arm | Technical Specifications

### Wiring diagram of electrical sensing system

Sensing system immune to interference from d.c. arc welding and a.c. arc welding

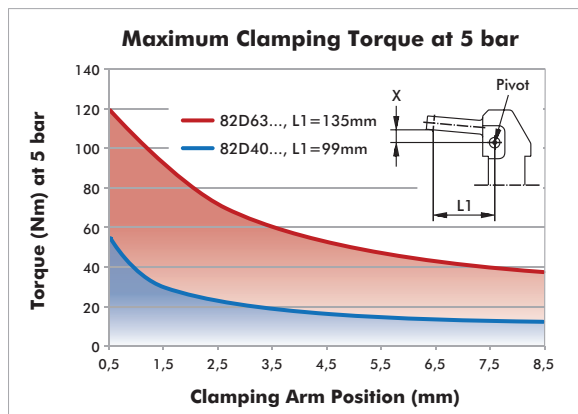


### Concept guideline (with reference to axis of clamping arm rotation)



All details apply under an air pressure of 6 bar and opening and closure times of 1 second each

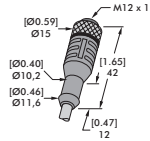
### Diagram of clamping torque



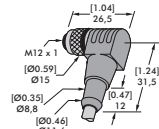
# 82D40-2/82D63-5 ACCESSORIES

## Enclosed Pneumatic Power Clamps | Dual Arm | Ordering Information

Clamping Arms		Order no. for Structural component		Comment
Clamping are variant	Clamping position	82D40-223C900B	82D63-523C900B	
U-central	vertical	<b>8JG-065-1-01</b>	<b>8JG-069-1-01</b>	sets of U-type clamping arms consist of clamping arm, links and screws
lateral right/left	vertical	<b>8JG-066-1-01<sup>1)</sup></b>	<b>8JG-070-1-01<sup>2)</sup></b>	sets of lateral clamping arms consist of 1) clamping arm, links and screws 2) clamping arm and set screws you need 2 sets of clamping arms
lateral both sides	vertical	<b>8JG-066-1-01<sup>1)</sup></b>	<b>8JG-070-1-01<sup>2)</sup></b>	you need 4 sets of clamping arms



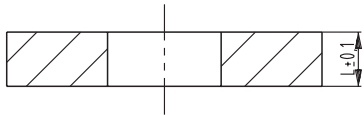
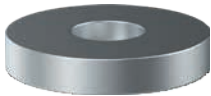
Connector socket  
M12x1 straight, 5-pin



Connector socket  
M12x1 angular, 4-pin

Connector Cable (includes 1 connector socket & 5 m cable)	Order no. for Structural component	
	82D40-223C900	82D63-523C900
Connector socket M12x1 straight, 5-pin	<b>8EL-002-1</b>	<b>8EL-002-1</b>
Connector socket M12x1 angular, 4-pin	<b>8EL-003-1</b>	<b>8EL-003-1</b>

Opening Angle Limiter	Order no. for Structural component			
	82D40-223C900		82D63-523C900	
Angle	Length	Order No.	Length	Order No.
180° (Standard)	11,4mm	<b>8CE-342-1</b>	14,4mm	<b>8CE-362-1</b>
160°	15,1mm	<b>8CE-340-1</b>	20,0mm	<b>8CE-360-1</b>
140°	18,5mm	<b>8CE-338-1</b>	24,8mm	<b>8CE-358-1</b>
120°	22,2mm	<b>8CE-336-1</b>	29,6mm	<b>8CE-356-1</b>
100°	25,8mm	<b>8CE-334-1</b>	34,3mm	<b>8CE-354-1</b>
80°	28,0mm	<b>8CE-332-1</b>	39,0mm	<b>8CE-352-1</b>
60°	33,0mm	<b>8CE-330-1</b>	43,8mm	<b>8CE-350-1</b>
40°	37,0mm	<b>8CE-328-1</b>	49,1mm	<b>8CE-348-1</b>
20°	41,8mm	<b>8CE-326-1</b>	56,2mm	<b>8CE-346-1</b>



Shim Plates (for clamping arm)	Fit for model 82D40-2								Fit for model 82D63-5									
	Model	A1	A2	D2	D3	B9	B10	B12	L10	Model	A1	A2	D2	D3	B9	B10	B12	L10
	<b>82ZB-SH4001</b>		0,1							<b>82ZB-SH5001</b>		0,1						
	<b>82ZB-SH4002</b>		0,2							<b>82ZB-SH5002</b>		0,2						
	<b>82ZB-SH4005</b>	42	0,5	6,5	7	6	20	20	12	<b>82ZB-SH5005</b>	65	0,5	6,5	9	10	30	30	16
	<b>82ZB-SH4010</b>		1,0							<b>82ZB-SH5010</b>		1,0						
	<b>82ZB-SH4020</b>		2,0							<b>82ZB-SH5020</b>		2,0						
	<b>82ZB-SH4050</b>		5,0							<b>82ZB-SH5050</b>		5,0						

Spare Parts	Order no. for Structural component	
	82D40-2	82D63-5
Cylinder	<b>8PW-016-1</b>	<b>8PW-024-2</b>
Integrated sensing system C9 Connector plug M12x1	<b>8EA-024-2</b>	<b>8EA-024-2</b>

# 84A

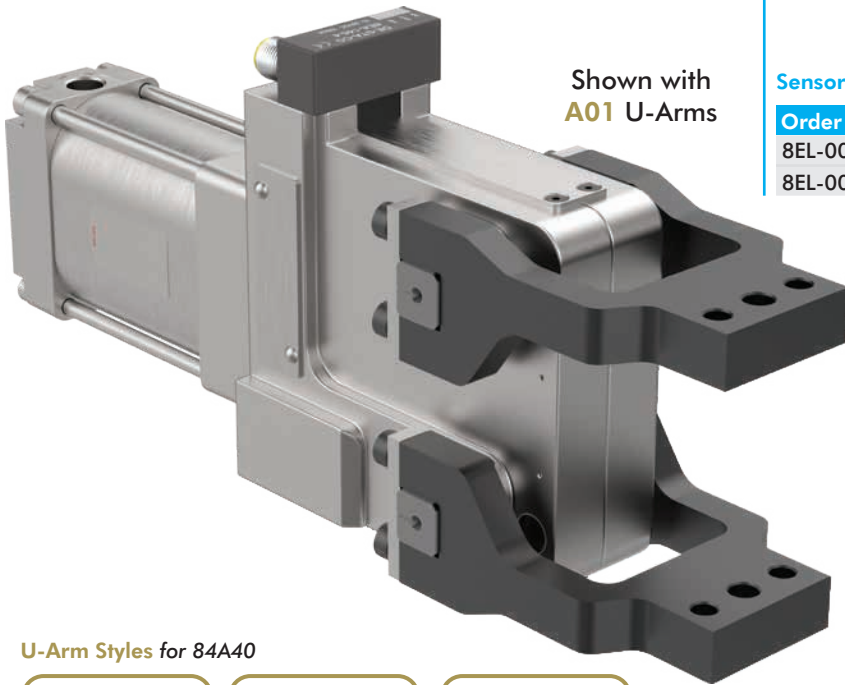
## Enclosed Pneumatic Power Clamps | Dual Arm, Tolerance Compensation | Ordering Information

84A 50-1 A01 L8

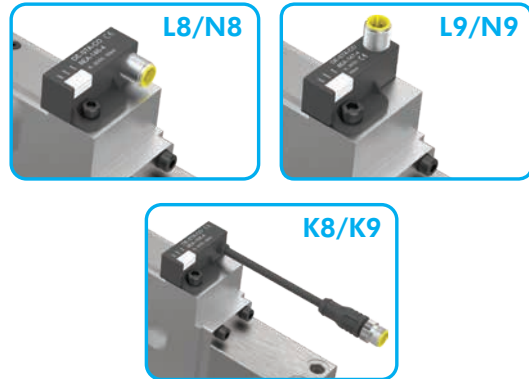
Size	Description
40-1	32 mm Cylinder (G1/8 Port)
50-1	50 mm Cylinder (G1/4 Port)

U-Arm Style	Description
000	Without Clamping Arms
A01	Double Tip, Surface Clamping
A02	Single Tip, Point Clamping
A03	Double Tip, Surface Clamping (Standard Profile 84A40, Wide Profile 84A50)
A04	Double Tip, Surface Clamping, Wide Profile for 84A50 only

Shown with  
A01 U-Arms

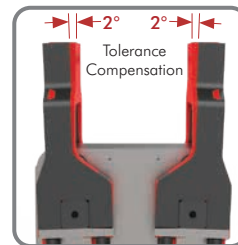


Sensor	Description
00	Without Sensing System
L8	PNP Sensor with In-line M12x1 Connector (8EA-146-4-B)
N8	NPN Sensor with In-line M12x1 Connector (8EA-154-4-B)
L9	PNP Sensor with 90° M12x1 Connector (8EA-147-4-B)
N9	NPN Sensor with 90° M12x1 Connector (8EA-155-4-B)
K8	PNP Sensor with M12x1 Cable Connector (8EA-158-4-B)
K9	NPN Sensor with M12x1 Cable Connector (8EA-167-4-B)



Sensor Cables Order separately

Order No.	Description
8EL-002-1	M12x1, Straight, 5-pin Connector w/5 m [16 ft.] Cable
8EL-003-1	M12x1, Angular, 4-pin Connector w/5 m [16 ft.] Cable



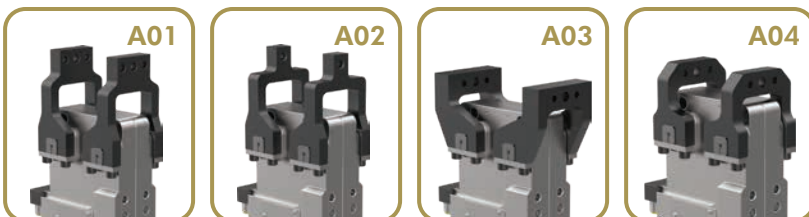
### Dual Arm Compensation

- 2° of tolerance compensation per clamp arm
- Compensates for variable sheet metal thicknesses
- There is no need for shimming

### U-Arm Styles for 84A40



### U-Arm Styles for 84A50

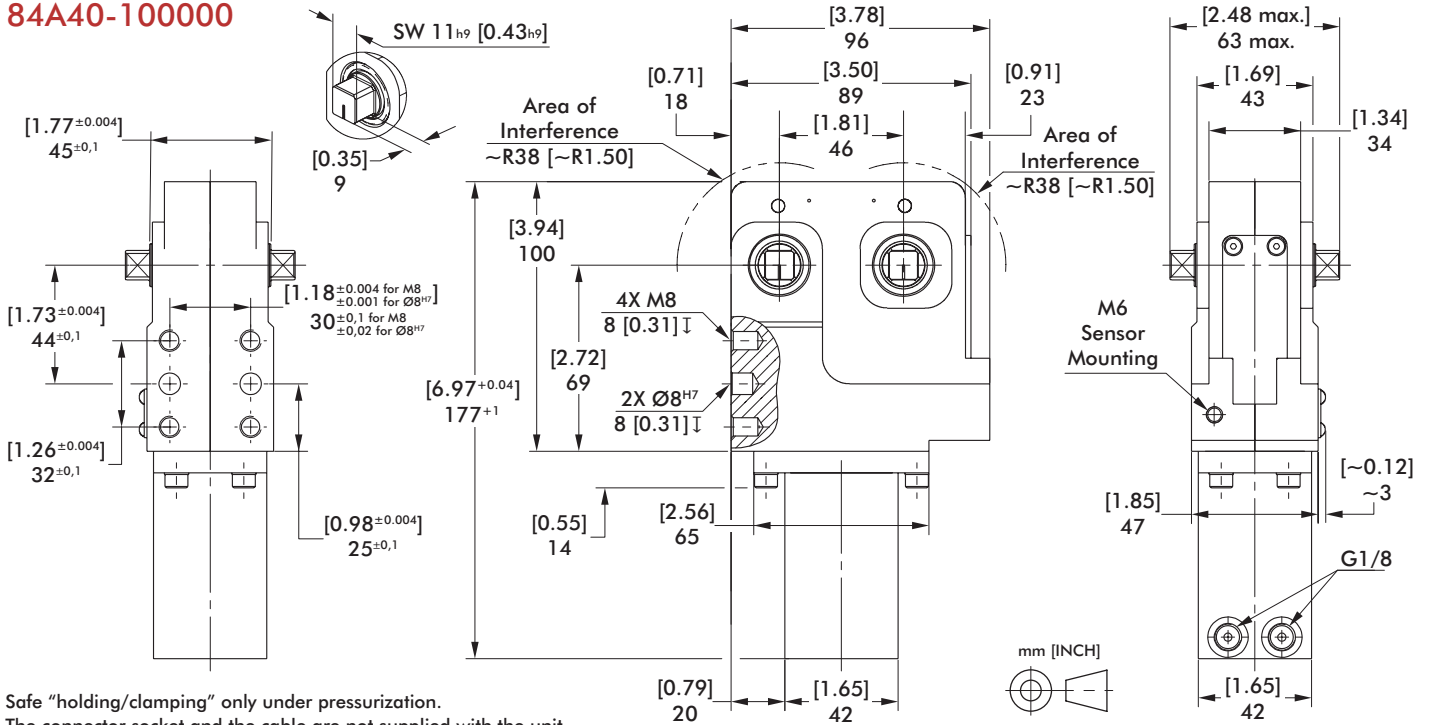


84A40-1

84A50-1

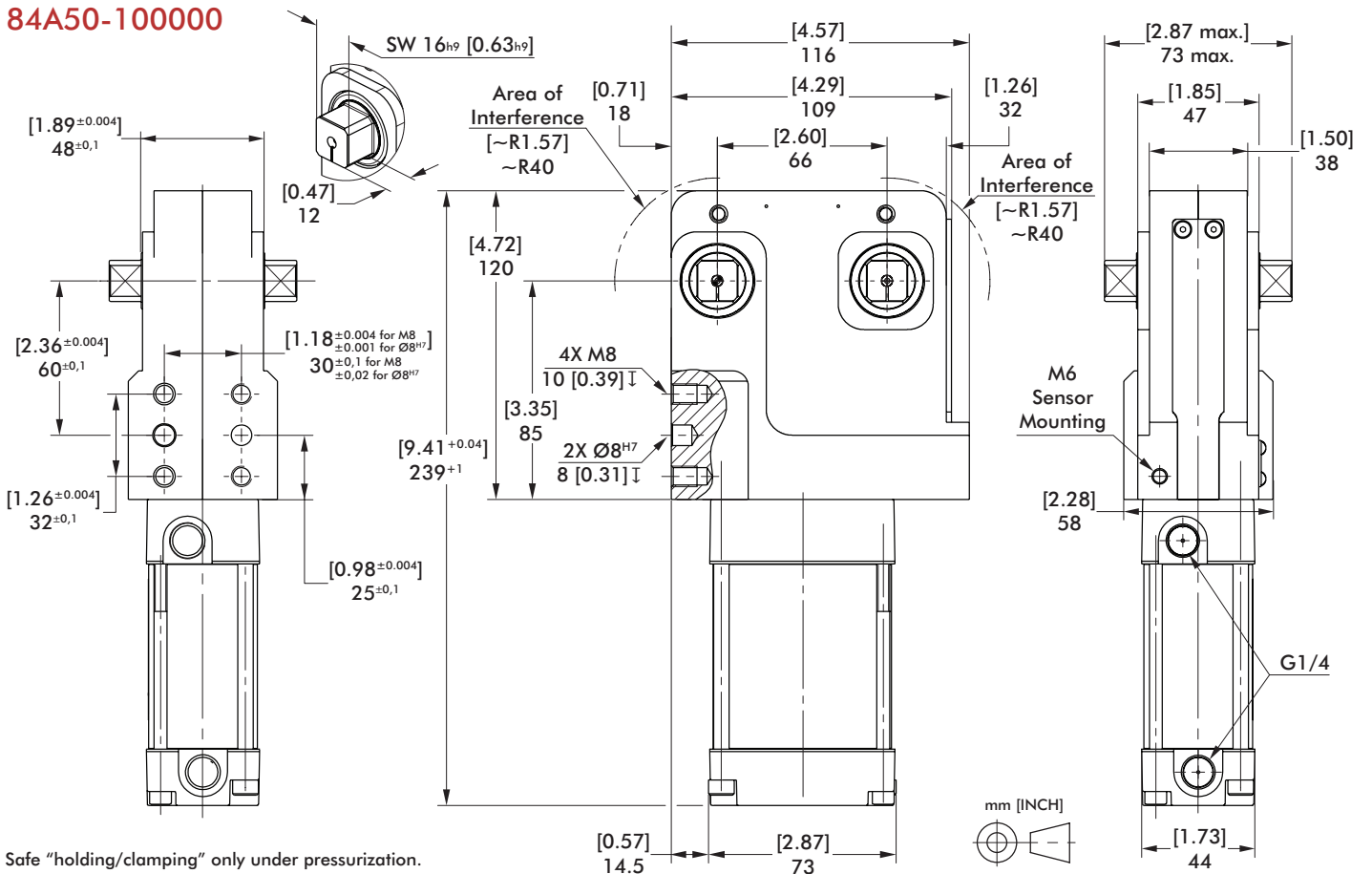
Enclosed Pneumatic Power Clamps | Dual Arm, Tolerance Compensation | Dimensions

84A40-100000



Safe "holding/clamping" only under pressurization.  
 The connector socket and the cable are not supplied with the unit.  
 Power by compressed air, max. 6 bar operation with oil-free air is permissible.

84A50-100000

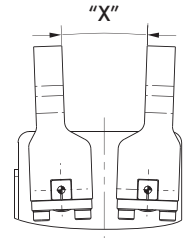
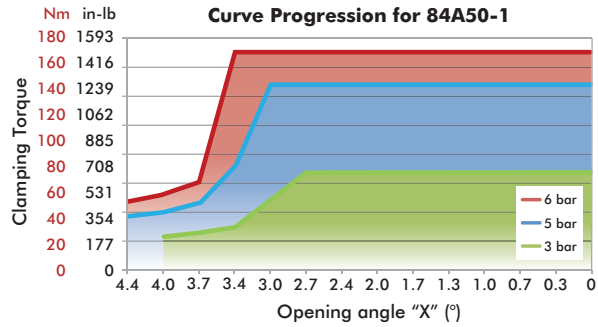
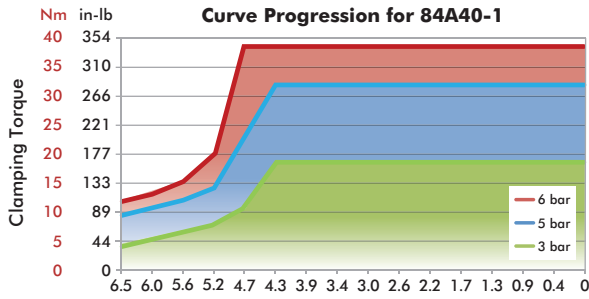


Safe "holding/clamping" only under pressurization.  
 The connector socket and the cable are not supplied with the unit.  
 Power by compressed air, max. 6 bar operation with oil-free air is permissible.

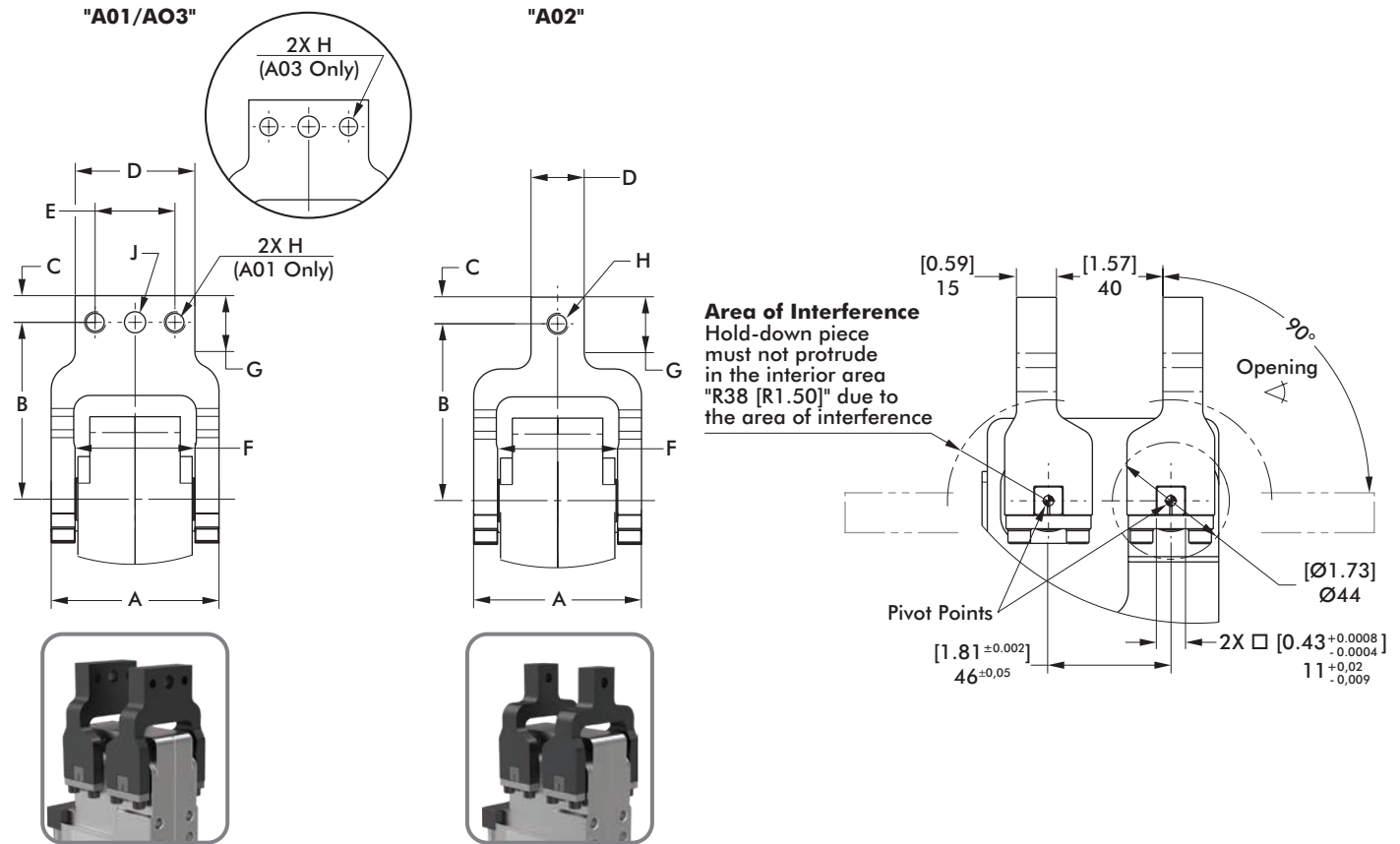
# 84A

## Enclosed Pneumatic Power Clamps | Dual Arm, Tolerance Compensation | Technical Specifications

Model	Connection	Max. Holding Torque at 5 bar [72psi] Nm [in-lb]	Max. Clamping Torque at 5 bar [72psi] Nm [in-lb]	Piston Ø mm [in]	~Weight kg [lbs]	Air Consumption per double stroke at 5 bar [72 psi] liter [in <sup>3</sup> ]
84A40-1.....	G1/8	29 [257]	29 [257]	40 [1.57]	1,5 [3.31]	0,45 [27]
84A50-1.....	G1/4	136 [1200]	136 [1200]	50 [1.97]	2,4 [5.29]	0,72 [44]



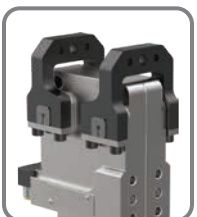
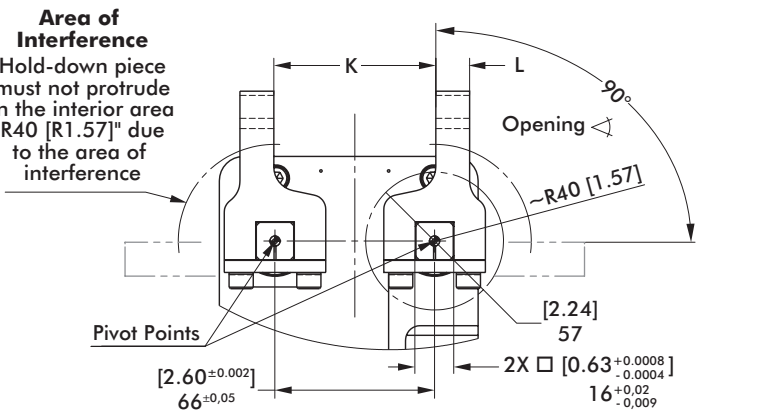
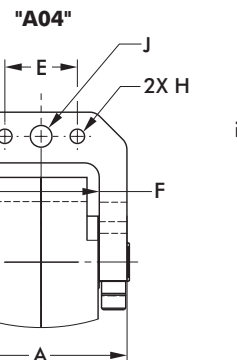
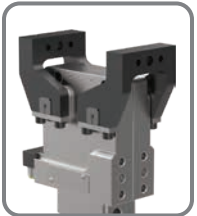
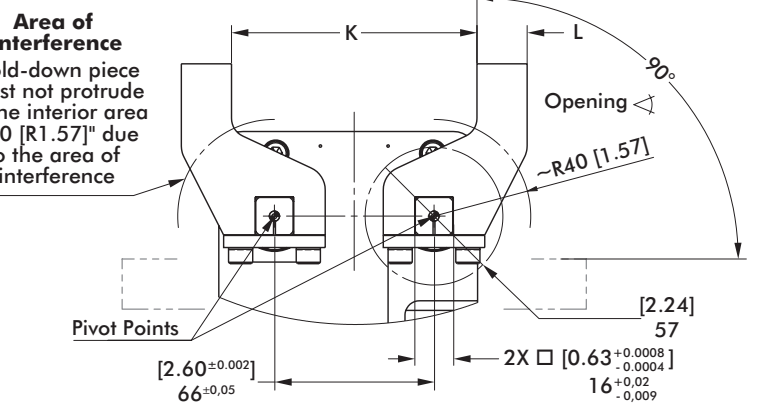
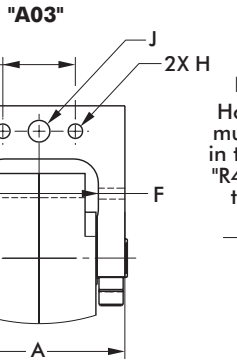
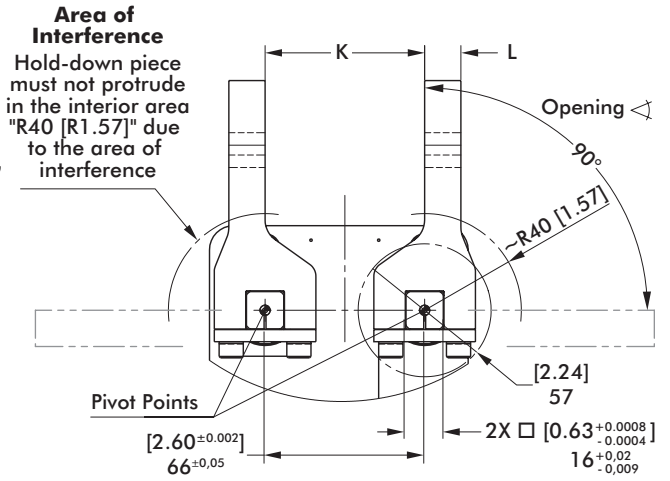
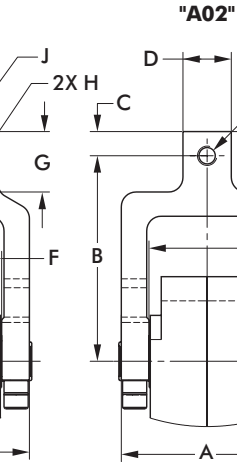
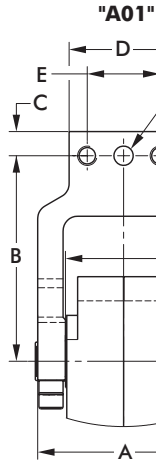
### U-Type Central Clamping Arms (Aluminum) - For Size 84A40



Arm Model No.	Arm Order No.	Weight kg [lbs]	A ±0,5 [±0.02]	B ±0,1 [±0.004]	C -0,05 [-0.002]	D	E +0,2 [+0.008]	F	G	ØH	ØJ
A01	8AM801-40-066	0,17 [0.37]	[2.48]	[2.62]	[0.39]	45 [1.77]	30 [1.18] ±0,1 [±0.004]	[1.78]	[0.83]	M8	8 <sup>H7</sup> [0.31 <sup>H7</sup> ]
A03	8AM803-40-001		63,1	66,5	10		30 [1.18] ±0,02 [±0.008]	45,1	21	[0.24 <sup>H7</sup> ] 6 <sup>H7</sup>	9 [0.35]
A02	8AM802-40-066	0,14 [0.31]				20 [0.79]	--			M8	--



### U-Type Central Clamping Arms (Aluminum) - For Size 84A50

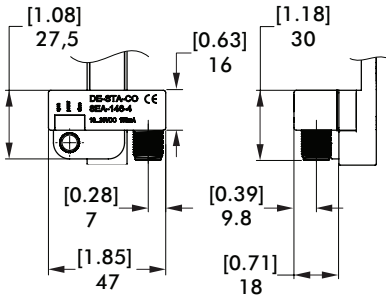


Arm Model No.	Arm Order No.	Weight kg [lbs]	A ±0,5 [±0.02]	B ±0,1 [±0.004]	C -0,05 [-0.002]	D	E ±0,2 [±0.008]	F	G	ØH	ØJ	K	L
A01	8AM801-50-085	[0.97] 0,44	[2.80]	[3.35]	[0.39]	[1.77] 45	30 [1.18] ±0,1 [±0.004]	[1.89] 48,1	[0.98]	M8	[0.31] 8 <sup>H7</sup>	[2.60]	[0.59]
A02	8AM802-50-085	[0.9] 0,41		[85]	10	[0.79]	--		25	--	--	--	66
A03	8AM803-50-001	[1.1] 0,5	71	[2.07] 52,5	[0.41] 10,5	--	30 [1.18] ±0,02 [±0.008]	--	--	[0.24 <sup>H7</sup> ]	[0.35]	[4.00]	[0.82]
A04	8AM804-50-001	[0.79] 0,36		[2.05] 52	[0.39] 10					6 <sup>H7</sup>	9	[2.64]	[0.55]
												67	14

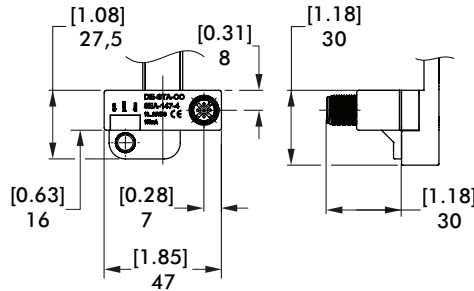
# 84A

Enclosed Pneumatic Power Clamps | Dual Arm, Tolerance Compensation | Dimensions

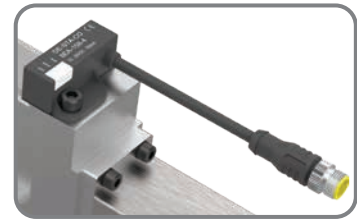
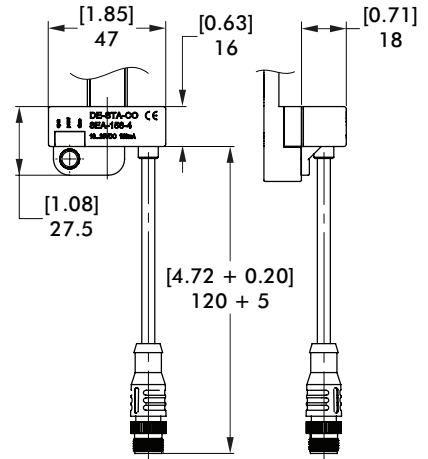
## L8, N8 Inductive Sensing System



## L9, N9 Inductive Sensing System with 90° Connector

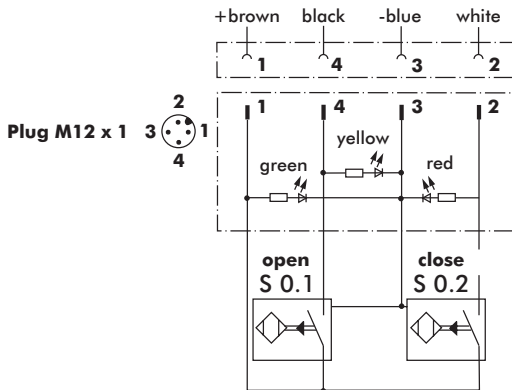


## K8, K9 Inductive Sensing System with Pigtail Connector



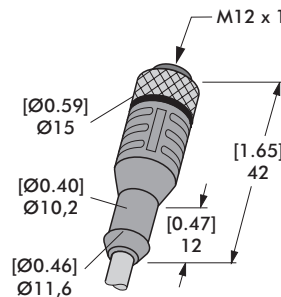
## Inductive Sensor Wiring Diagram

Sensing system immune to interference from AC / DC arc welding.

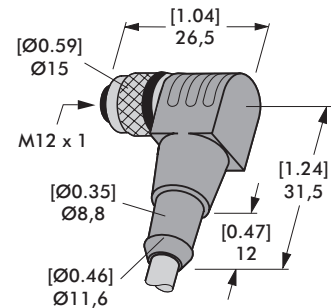


## Sensor Cable Accessories

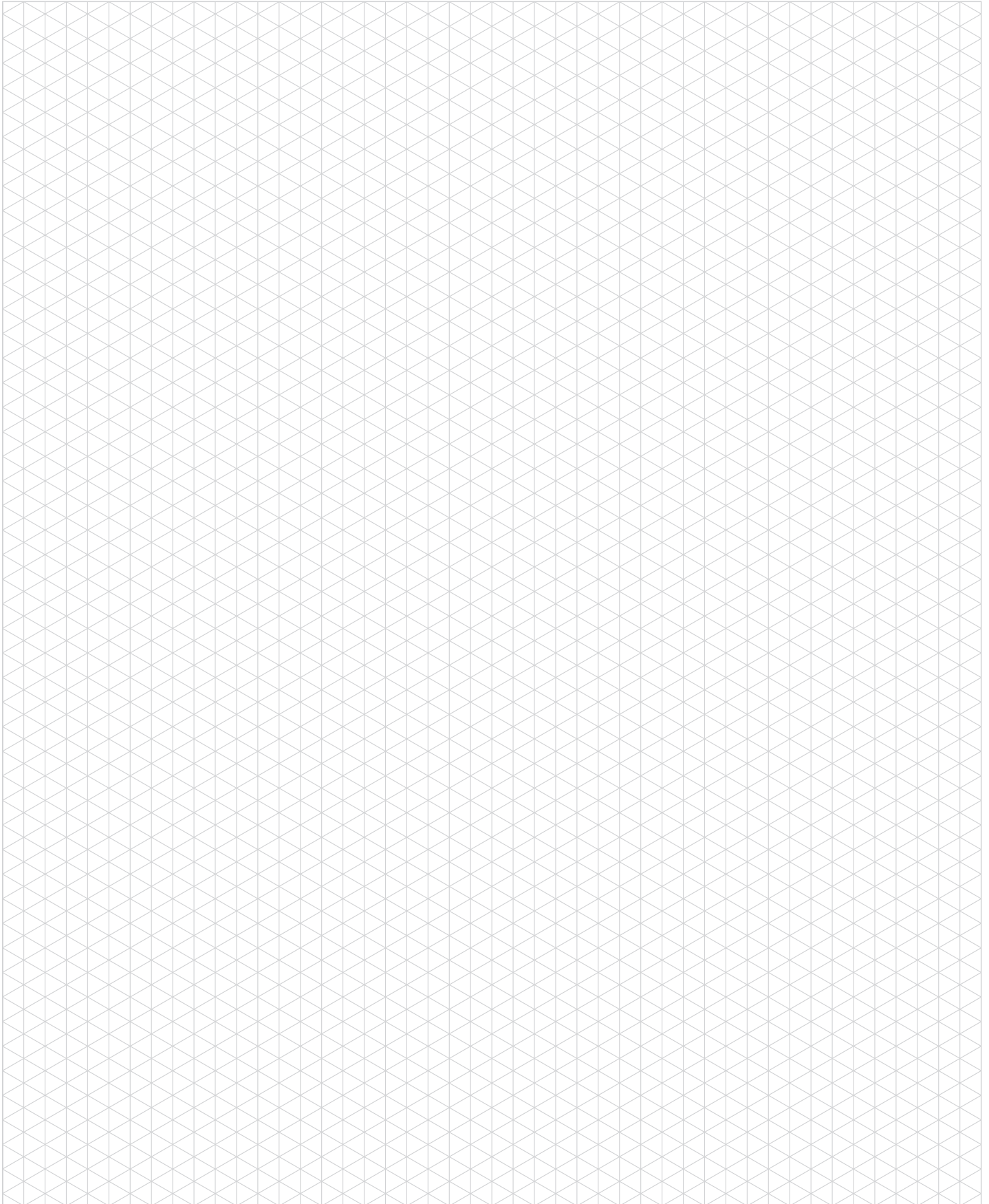
Sensor Cables (1 connector & 5m cable)	Order no.
M12x1 connector, straight, 5-pin	8EL-002-1
M12x1 connector, 90° angular, 4-pin	8EL-003-1



Straight Cable  
8EL-002-1



Angular Cable  
8EL-003-1



# 870-2, 871-2

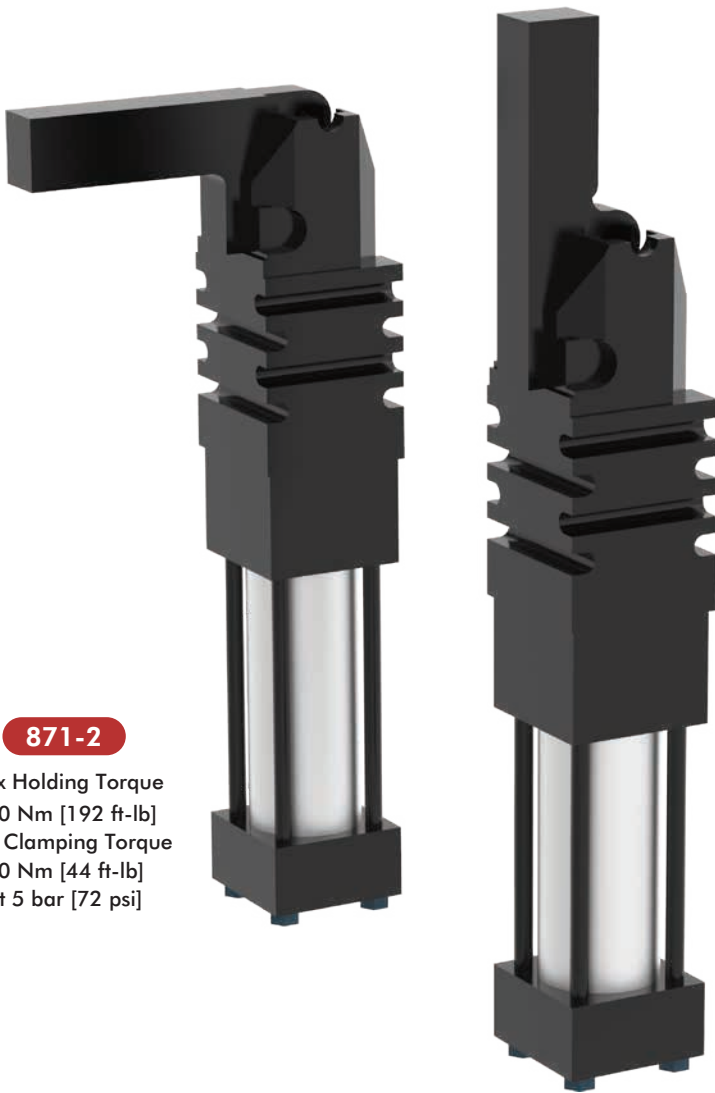
## Pneumatic Power Clamps | Ordering Information

870-2

Base Model	Description
870-2	38,1 mm [1.5 in.] Cylinder with Vertical Clamp Arm
871-2	38,1 mm [1.5 in.] Cylinder with Horizontal Clamp Arm

Sensors	Description (order separately)
<b>BIM-IKE-AP</b>	Magnetic Sensor, 2 pieces required
<b>810151</b>	Magnetic Sensor, 2 pieces required
<b>810153</b>	Magnetic Sensor, 2 pieces required
<b>810155</b>	Magnetic Sensor, 2 pieces required
<b>810157</b>	Magnetic Sensor, 2 pieces required

See page 72 for sensor specifications.



871-2

Max Holding Torque  
260 Nm [192 ft-lb]  
Max Clamping Torque  
60 Nm [44 ft-lb]  
at 5 bar [72 psi]

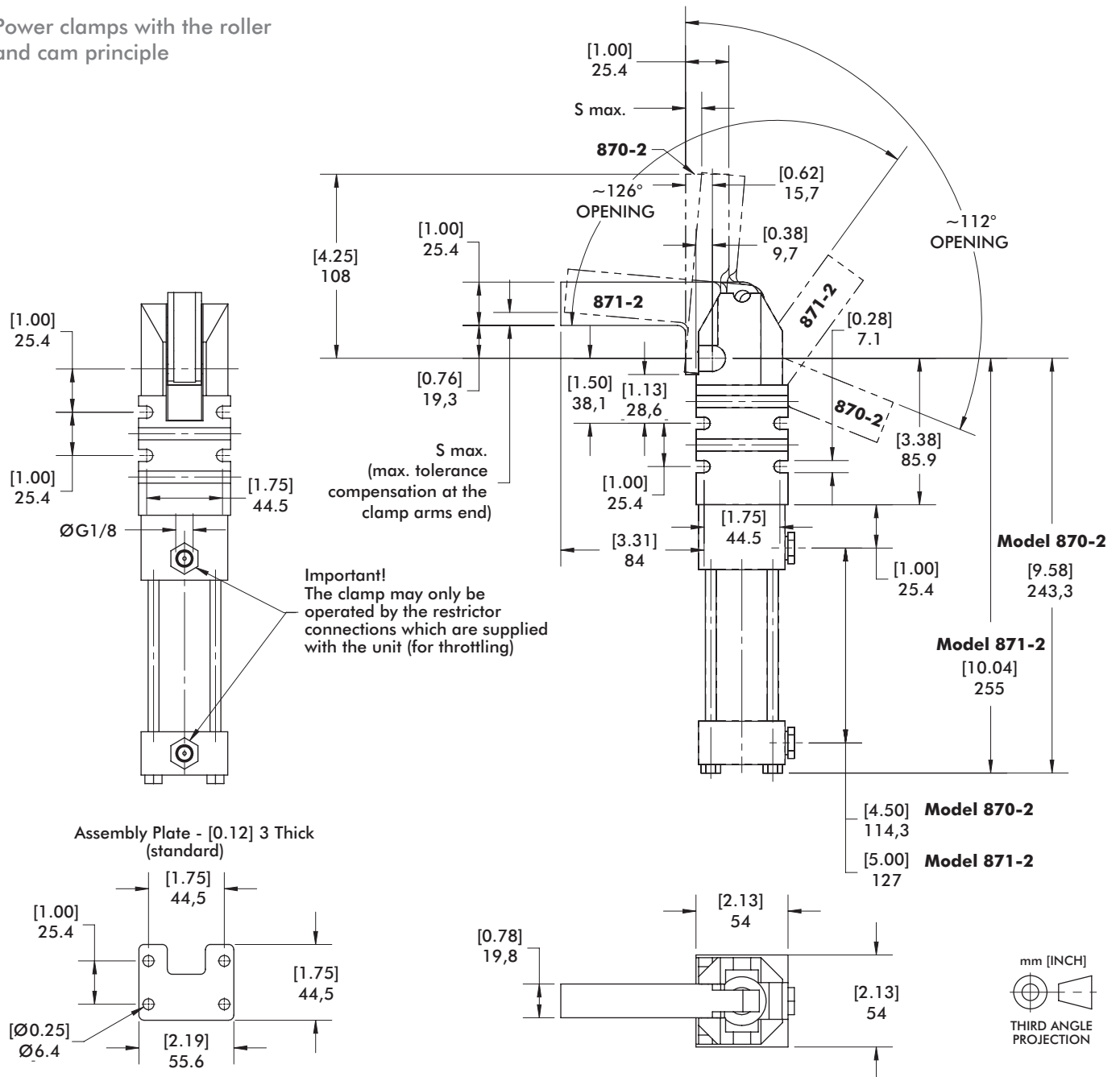
870-2

Max Holding Torque  
260 Nm [192 ft-lb]  
Max Clamping Torque  
60 Nm [44 ft-lb]  
at 5 bar [72 psi]

# 870-2, 871-2

## Pneumatic Power Clamps | Dimensions and Technical Specifications

Power clamps with the roller and cam principle



Model	Connection	S Max. Max. Tolerance Compensation at the Clamp Arms End [ft lb] Nm	Max. Operating Pressure [psi] bar	Cylinder Ø [in.] mm	Opening Angle	Weight [lbs] kg	Air Consumption per double stroke at 5 bar dm <sup>3</sup> [ft <sup>3</sup> ]
870-2	G 1/8	[3] 4,5	[145] 10	[1.50] 38,1	112°	[6.60] 3	0,95 [0.03]
871-2		[3] 3,5			118°		

Sensor Options	Mount Style	Connector	Length	Function	Voltage	Max. Switching Current	Voltage Drop
BIM-IKE-AP	Tie Rod	No connector cord	2m [6.6 ft.]	PNP	10-30V DC	200mA	2.3V
810151				Reed	5-120V AC/DC	500mA	3.5V
810153			Reed	24-240V AC	4A	1.0V	
810155			PNP	6-24V DC	500mA	1.0V	
810157			NPN	6-24V DC	500mA	1.0V	

# 860, 861, 890, 891, 1000, 1001

## Pneumatic Power Clamps | Ordering Information

860

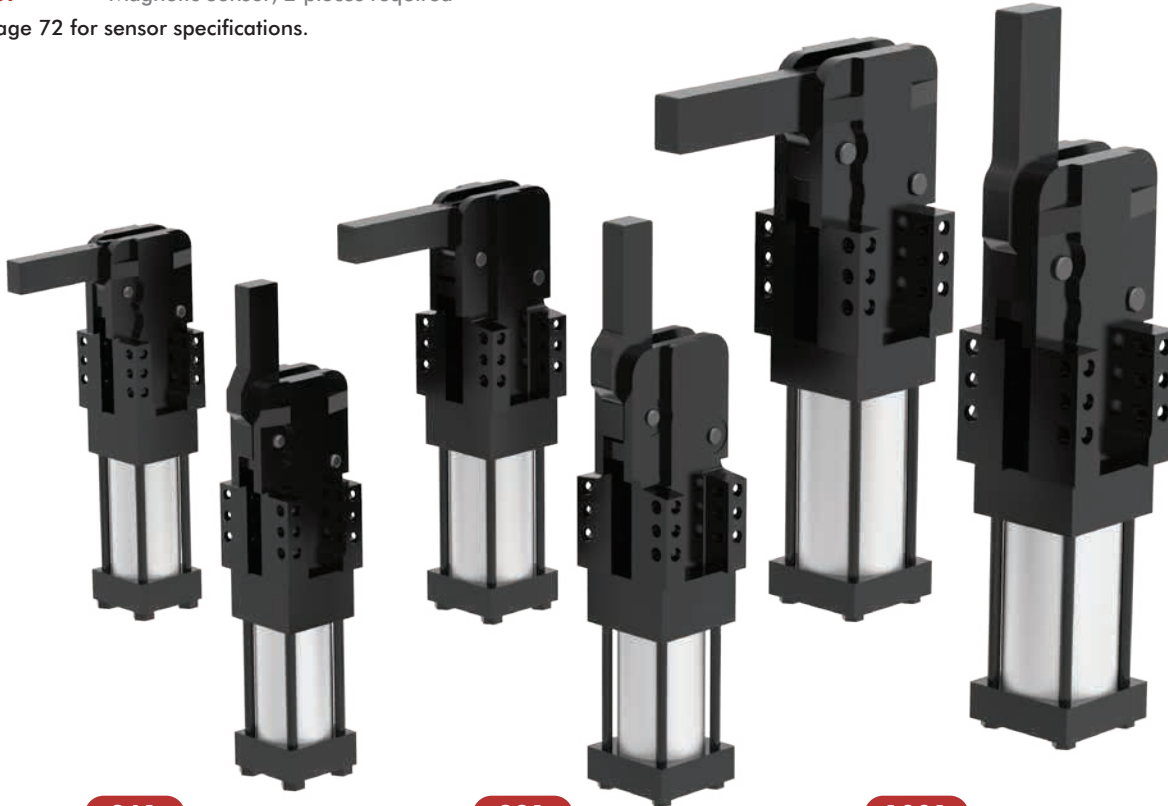
Base Model	Description
<b>860</b>	50,8 mm [2 in.] Cylinder with Vertical Clamp Arm
<b>861</b>	50,8 mm [2 in.] Cylinder with Horizontal Clamp Arm
<b>890</b>	63,5 mm [2.5 in.] Cylinder with Vertical Clamp Arm
<b>891</b>	63,5 mm [2.5 in.] Cylinder with Horizontal Clamp Arm
<b>1000</b>	82,5 mm [3.25 in.] Cylinder with Vertical Clamp Arm
<b>1001</b>	82,5 mm [3.25 in.] Cylinder with Horizontal Clamp Arm

Sensors	Description (order separately)
<b>BIM-IKE-AP</b>	Magnetic Sensor, 2 pieces required
<b>810151</b>	Magnetic Sensor, 2 pieces required
<b>810153</b>	Magnetic Sensor, 2 pieces required
<b>810155</b>	Magnetic Sensor, 2 pieces required
<b>810157</b>	Magnetic Sensor, 2 pieces required

See page 72 for sensor specifications.

Seal Kit	Description (order separately)
<b>8610100</b>	Seal Kit for Model 860, 861
<b>8910100</b>	Seal Kit for Model 890, 891
<b>10010100</b>	Seal Kit for Model 1000, 1001

Cylinder	Description (order separately)
<b>865133-MR</b>	Replacement Cylinder for Model 860
<b>865132-MR</b>	Replacement Cylinder for Model 861
<b>895133-MR</b>	Replacement Cylinder for Model 890
<b>895132-MR</b>	Replacement Cylinder for Model 891
<b>1005134-MR</b>	Replacement Cylinder for Model 1000
<b>1005133-MR</b>	Replacement Cylinder for Model 1001



861

Max Holding Torque  
1017 Nm [750 ft-lb]  
Max Clamping Torque  
256 Nm [180 ft-lb]  
at 5 bar [72 psi]

891

Max Holding Torque  
1695 Nm [1250 ft-lb]  
Max Clamping Torque  
553 Nm [408 ft-lb]  
at 5 bar [72 psi]

1001

Max Holding Torque  
3390 Nm [2500 ft-lb]  
Max Clamping Torque  
1229 Nm [906 ft-lb]  
at 5 bar [72 psi]

860

Max Holding Torque  
1017 Nm [750 ft-lb]  
Max Clamping Torque  
256 Nm [180 ft-lb]  
at 5 bar [72 psi]

890

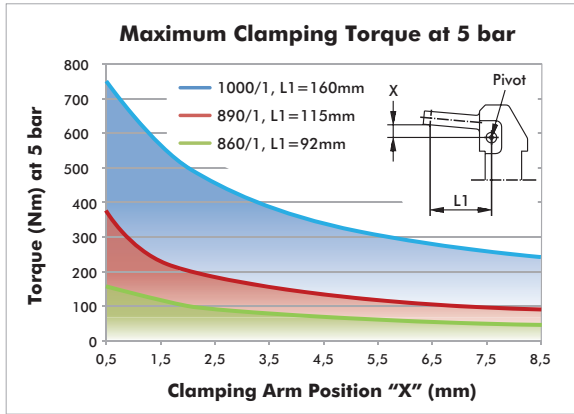
Max Holding Torque  
1695 Nm [1250 ft-lb]  
Max Clamping Torque  
553 Nm [408 ft-lb]  
at 5 bar [72 psi]

1000

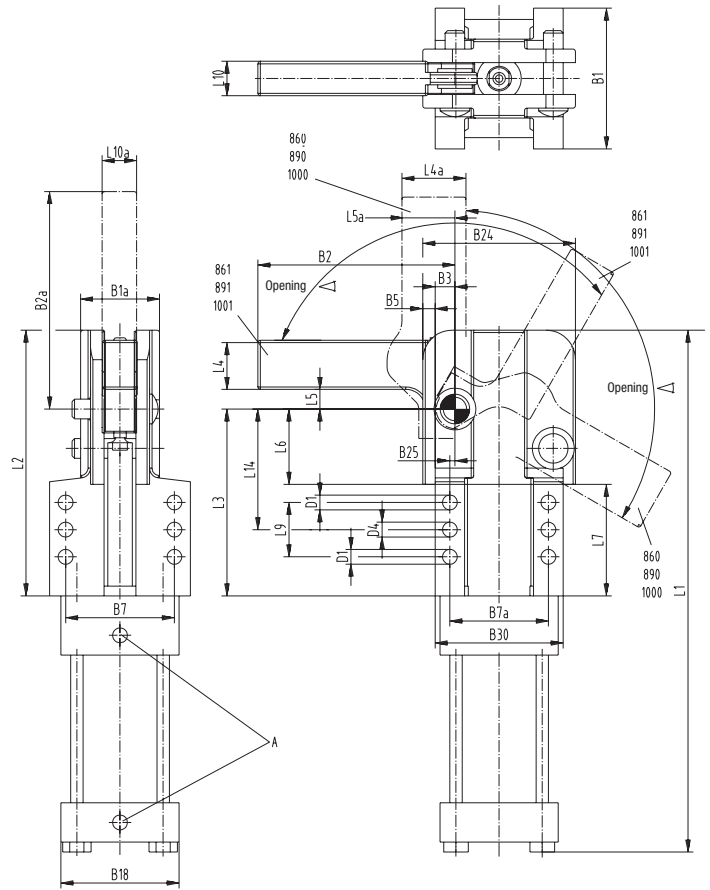
Max Holding Torque  
3390 Nm [2500 ft-lb]  
Max Clamping Torque  
1229 Nm [906 ft-lb]  
at 5 bar [72 psi]

# 860, 861, 890, 891, 1000, 1001

## Pneumatic Power Clamps | Dimensions and Technical Specifications



Model	Cylinder Ø mm [in]	Opening Angle	Weight kg [lbs]
860	[2.00]	96°	[8.58]
861	50,8	119°	3,9
890	[2.50]	96°	[16.06]
891	63,5	119°	7,3
1000	[3.25]	96°	[29.70]
1001	82,5	119°	13,5



Power by compressed air, max. 6 bar  
Operation with oil-free air is permissible.

Information vor machining of clamp arm: Steel 1.0726

Model	A	B1	B1A	B2	B2A	B3	B5	B7	B7A	B18	B24	B25	B30
860	G1/8	[2.94] 74,7	[1.75] 44,5	-	[5.44] 138,2	[0.41] 10,4	[0.25] 6,4	[2.31] 58,7	[2.19] 55,6	[2.5] 63,5	[3.31] 84,1	[0.09] 2,3	[2.81] 71,4
861	G1/8	[3.56] 90,4	[2] 50,8	[4] 101,6	[6.57] 166,9	[0.5] 12,7	[0.31] 7,9	[2.76] 70,1	[2.5] 63,5	[3] 76,2	[3.87] 98,3	[0.13] 3,3	[3.25] 82,6
890	G1/8	[4.5] 114,3	[2.62] 66,5	-	[9] 228,6	[0.63] 16	[0.44] 11,2	[3.5] 88,9	[3.5] 88,9	[3.75] 95,3	[5.38] 136,7	[0.13] 3,3	[4.5] 114,3
891	G1/8	[4.5] 114,3	[2.62] 66,5	7 177,8	-	[0.63] 16	[0.44] 11,2	[3.5] 88,9	[3.5] 88,9	[3.75] 95,3	[5.38] 136,7	[0.13] 3,3	[4.5] 114,3

Model	ØD1	ØD4	L1	L2	L3	L4	L4A	L5	L5a	L6	L7	L9	L10	L10a	L14
860	[0.34] 8,6	[0.31] 7,9	[12.44] 316	[5.75] 146,1	[4.06] 103,1	-	[1.12] 28,4	--	[0.69] 17,4	[1.44] 36,6	[2.5] 63,5	[1.25] 31,8	[0.62] 15,7	[0.62] 15,7	[2.5] 63,5
861	[0.41] 10,4	[0.38] 9,7	[13.37] 339,6	[6.75] 171,5	[4.75] 120,7	-	[1.25] 31,8	-	[0.84] 21,4	[1.75] 44,5	[2.65] 67,3	[1.38] 35,1	[0.81] 20,6	[0.81] 20,6	[3.06] 77,7
890	[0.53] 13,5	[0.5] 12,7	[17.51] 444,8	[9.25] 235	[6.25] 158,8	-	[1.75] 44,5	-	[1.37] 34,8	[2.25] 57,2	[3.96] 100,6	[2] 50,8	[1] 25,4	[1] 25,4	[3.75] 95,3
891	[0.53] 13,5	[0.5] 12,7	[17.51] 444,8	[9.25] 235	[6.25] 158,8	-	[1.75] 44,5	-	[1.37] 34,8	[2.25] 57,2	[3.96] 100,6	[2] 50,8	[1] 25,4	[1] 25,4	[3.75] 95,3

# 82P25-2

## Pneumatic Pin Clamp | Ordering and Technical Information

82P25-2 - 00 D8 XX

Size	Description
82P25-2	25 mm Cylinder (G1/8 and NPT 1/8 Ports)

Tip	Description
00	without centering pin
08-22	with customer specified round centering pin from Ø8-22 mm

Serial Number	Description
XX	Customer specified Base, Clamping Hook and Centering Pin

*Must contact factory with specifications to complete order number*



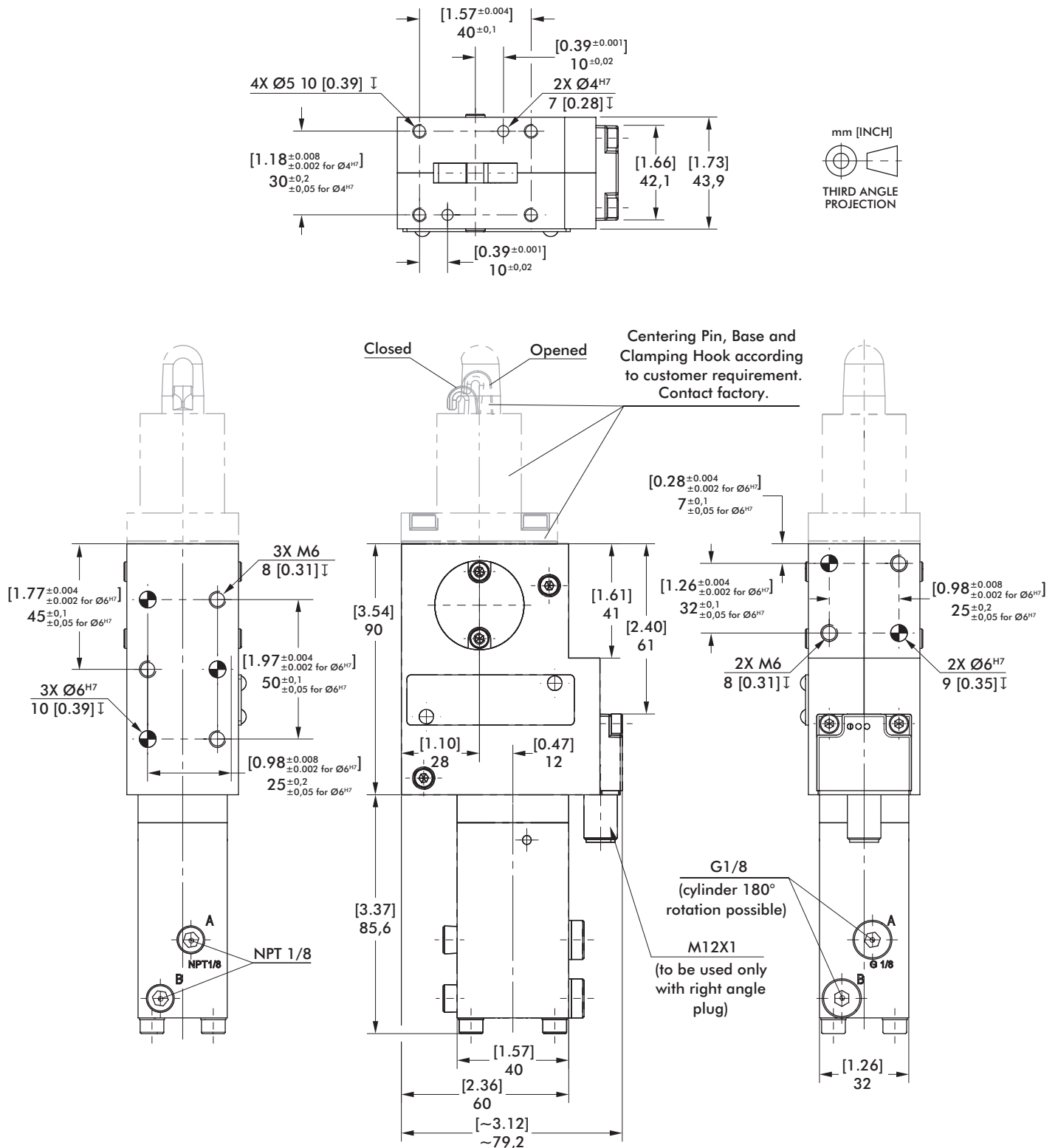
Sensor	Description
D8	Inductive Sensing System with M12x1 Connector (8EA-161-1)



82P25-2XX

Specification	Unit	82P25-2
Max. Clamping Force @ 5 bar	[lbf] N	[124] 550
Max. Operating Pressure	bar [psi]	[87] 6
Piston Diameter	[in] mm	[1.57] 40
Air Consumption per Double Stroke @ 6 bar [87psi]	[in <sup>3</sup> ] liter	[15.26] 0,25
Weight	[lb] kg	[2.07] 0,94

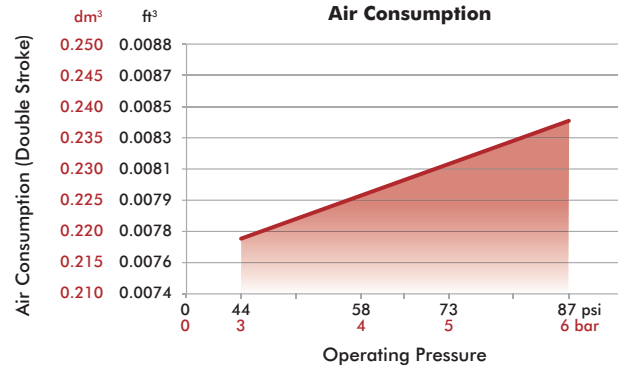
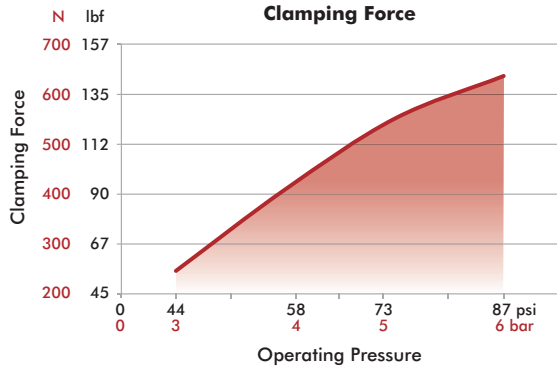




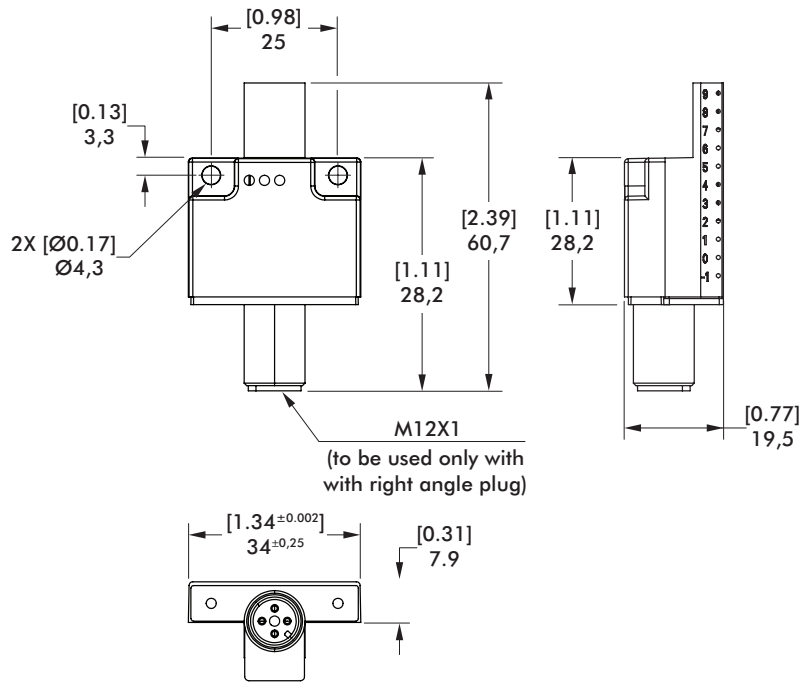
# 82P25-2 SENSORS

## Pneumatic Pin Clamp | Dimensions and Technical Specifications

### Clamping Force and Air Consumption

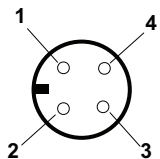


### D8 Inductive Sensing System



### Inductive Sensor Wiring Diagram

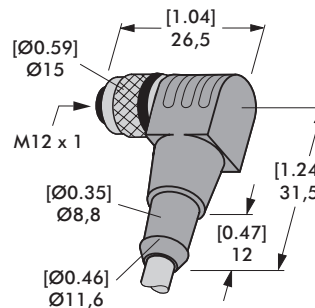
Sensing system immune to interference from AC / DC arc welding.



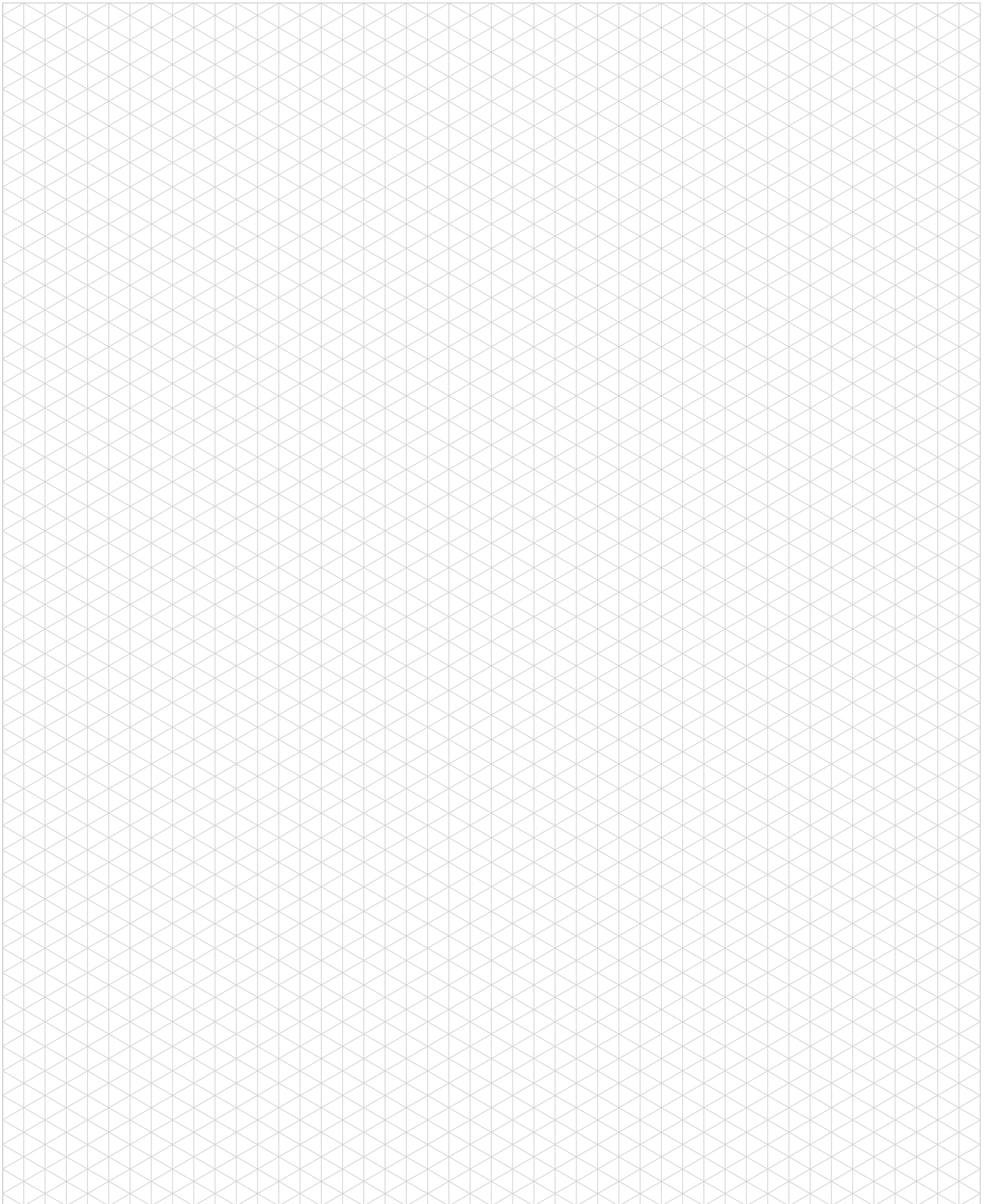
- 1-BROWN → L+
  - 4-BLACK → L-
  - 2-WHITE → S1
  - 3-BLUE → S2
- 1-Common +**  
**2-Open**  
**3-Common -**  
**4-Closed**

### Sensor Cable Accessories

Sensor Cables (1 connector & 5m cable)	Order no.
M12x1 connector, 90° angular, 4-pin	8EL-003-1



**Angular Cable**  
**8EL-003-1**



# 82P30-3/82P35-3

## Pneumatic Pin Clamp | Ordering and Technical Information



Size	Description
30-3	30 mm Cylinder (G1/8 Port)
35-3	35 mm Cylinder (G1/8 Port)

Centering Pin	Ø Range for 82P30-3
20	20,0 - 23,0 mm
25	23,1 - 28,0 mm
30	28,1 - 33,0 mm

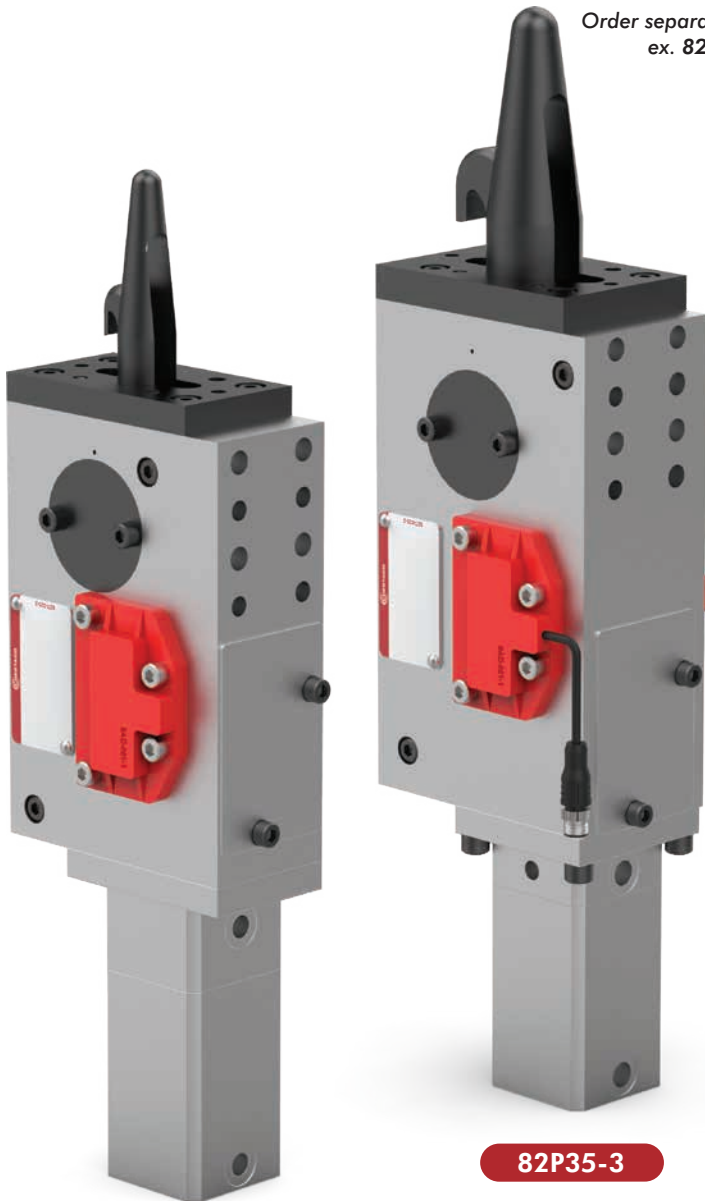
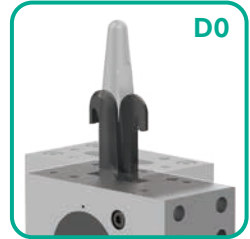
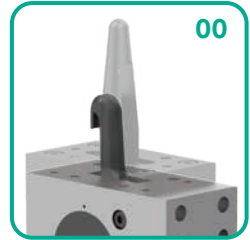
  

	Ø Range for 82P35-3
40	33,1 - 45,0 mm

Order separately. 82P3X-3XX-XX,X  
ex. 82P30-320-21,1



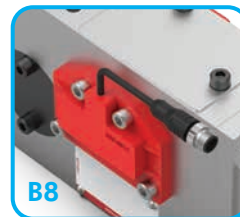
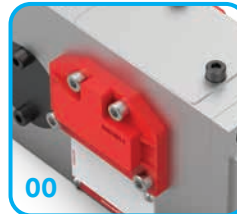
Clamping Hook	Description
00	Single Hook (Standard)
D0	Double Hook



82P30-3

82P35-3

Sensor	Description
00	Without Sensing System
C0	Inductive Sensing System with M8x1 Connector (8EA-012-2)
B8	Inductive Sensing System with M12x1 Connector (8EA-030-1)

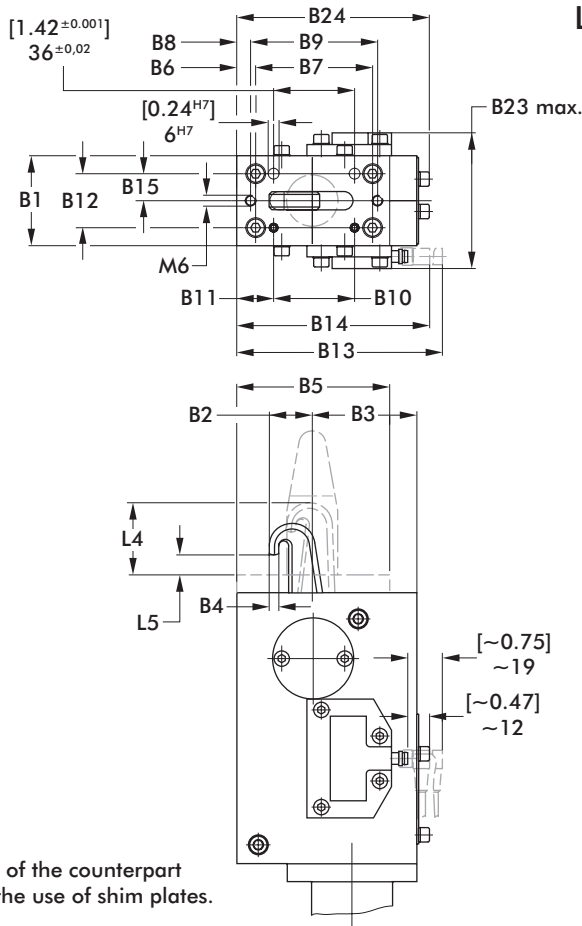


Specification	Unit	82P30-3	82P35-3
Max. Clamping Force @ 6 bar	[lbf] N	[450] 2000	[790] 3500
Max. Operating Pressure	bar [psi]	[87] 6	[87] 6
Piston Diameter	[in] mm	[1.18] 30	[1.38] 35
Air Consumption per Double Stroke @ 6 bar [87psi]	[in <sup>3</sup> ] liter	[48.82] 0,8	[48.82] 0,8
Weight	[lb] kg	[6.61] 3	[7.50] 3,4

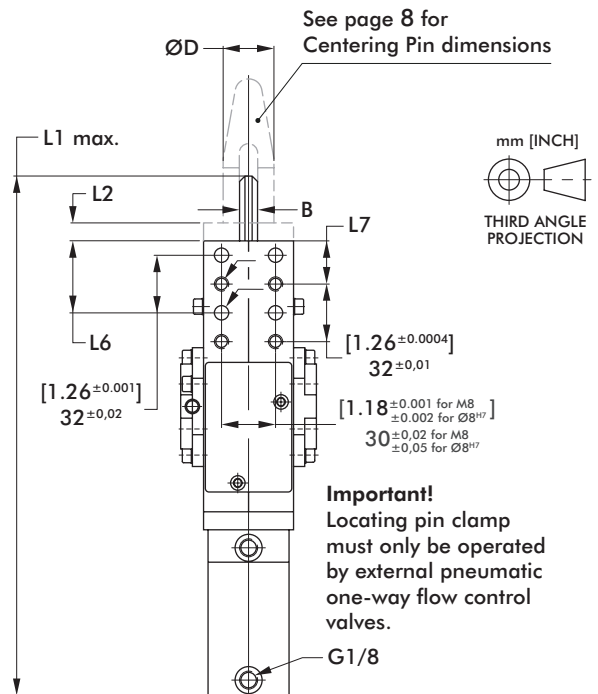
# 82P30-3/82P35-3

## Pneumatic Pin Clamp | Dimensions and Technical Specifications

Locating clamp with single-sided clamping hook  
Centering Pin (has to be ordered separately)



Spare Parts	Order no.	
	82P30-3...	82P35-3...
Cylinder	8PW-019-1	8PW-006-1
Seal kit	8PW-019-1-00	8PW-001-1-00



Dimensioning of the counterpart should allow the use of shim plates.

Medium: air, max. 6 bar, operation with oil-free air is permissible.

**Important!**  
Locating pin clamp must only be operated by external pneumatic one-way flow control valves.

### Technical Data

Model	Piston Ø	Centering Pin ØD [-0.002] -0,5	B [-0.004] -0,1	B1	B2	B3	B4	B5	B6 [±0.004] ±0,1	B7 [±0.008] ±0,2	B8	B9 [±0.008] ±0,2	B10 [±0.004] ±0,1
82P30-3200000		[0.79-0.91] 20,0-23,0			[0.73] 18,5		[0.20] 5						
82P30-3250000	[1.18] 30	[0.91-1.10] 23,1-28,0	[0.39] 10	[1.97] 50	[0.81] 20,5	[2.28] 58	[0.21] 5,25	[3.35] 85	[0.41] 10,5	[2.56] 65	[0.41] 10,5	[2.56] 65	[1.38] 35
82P30-3300000		[1.10-1.30] 28,1-33,0			[0.89] 22,5								
82P35-3400000	[1.38] 35	[1.30-1.77] 33,1-45,0	[0.47] 12	[2.36] 60	[1.34] 34	[2.09] 53	[0.28] 7	[3.54] 90	[0.75] 19	[2.40] 61	[0.28] 7	[2.99] 76	[1.46] 37

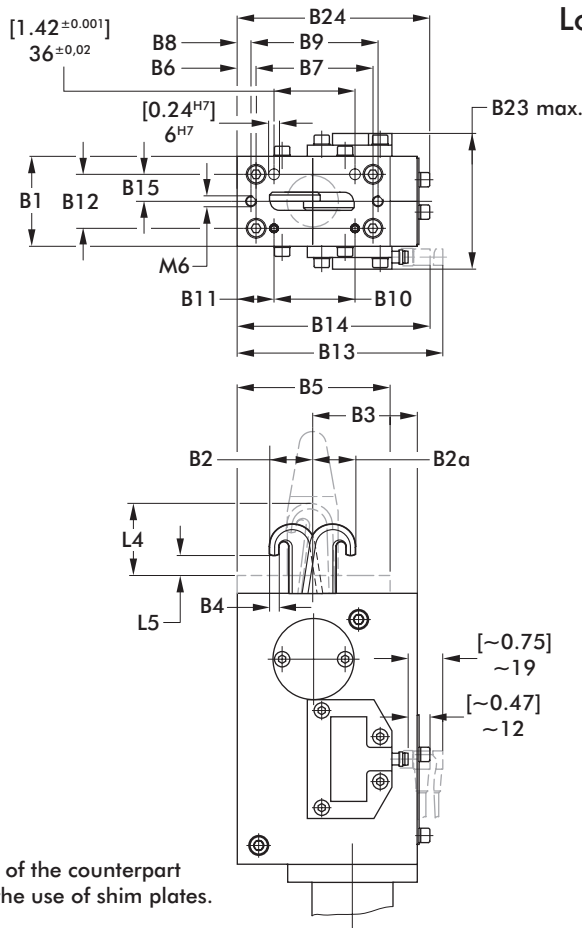
Model	B11 [±0.004] ±0,1	B12* [±0.002] ±0,5	B13 max.	B14 max.	B15* [±0.001] ±0,025	B23 max.	B24	L1 max.	L2 [±0.004] ±0,1	L4 ~	L5 [±0.002] ±0,5	L6 [±0.002] ±0,5	L7 [±0.004] ±0,1
82P30-3200000								[11.97] 304		[1.57] 40			
82P30-3250000	[1.00] 25,5	[1.18] 30	[4.49] 114	[4.21] 107	[0.59] 15	[2.97] 75,4	[4.21] 107	[12.05] 306	[0.39] 10	[1.73] 44	[0.45] 11,5	[1.57] 40	[0.94] 24
82P30-3300000										[1.77] 45			
82P35-3400000	[1.22] 31	[1.57] 40			[0.79] 20	[3.36] 85,4		[12.99] 330	[0.47] 12	[2.20] 56	[0.55] 14	[1.50] 38	[0.87] 22

\*Tolerances for dowel holes only

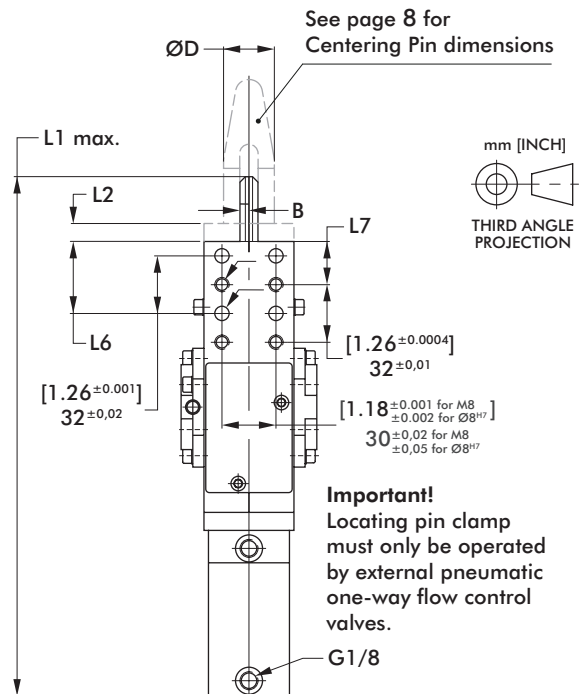
# 82P30-3/82P35-3

## Pneumatic Pin Clamp | Dimensions and Technical Specifications

Locating clamp with double-sided clamping hook  
Centering Pin (has to be ordered separately)



Spare Parts	Order no.	
	82P30-3...	82P35-3...
Cylinder	8PW-019-1	8PW-006-1
Seal kit	8PW-019-1-00	8PW-001-1-00



Dimensioning of the counterpart should allow the use of shim plates.

Medium: air, max. 6 bar, operation with oil-free air is permissible.

**Important!**  
Locating pin clamp must only be operated by external pneumatic one-way flow control valves.

### Technical Data

Model	Piston Ø	Centering Pin ØD [-0.002 -0,05]	B [-0.004 -0,1]	B1	B2	B2α	B3	B4	B5	B6 [±0.004 ±0,1]	B7 [±0.008 ±0,2]	B8	B9 [±0.000 ±0,2]
82P30-32000D0		[0.79-0.91] 20,0-23,0			[0.73] 18,5	[0.77] 19,5		[0.20] 5					
82P30-32500D0	[1.18] 30	[0.91-1.10] 23,1-28,0	[0.20] 5	[1.97] 50	[0.81] 20,5	[0.85] 21,5	[2.28] 58	[0.21] 5,25	[3.35] 85	[0.41] 10,5	[2.56] 65	[0.41] 10,5	[2.56] 65
82P30-33000D0		[1.10-1.30] 28,1-33,0			[0.89] 22,5	[0.93] 23,5							
82P35-34000D0	[1.38] 35	[1.30-1.77] 33,1-45,0	[0.14] 3,5	[2.36] 60	[1.34] 34	[1.34] 34	[2.09] 53	[0.28] 7	[3.54] 90	[0.75] 19	[2.40] 61	[0.28] 7	[2.99] 76

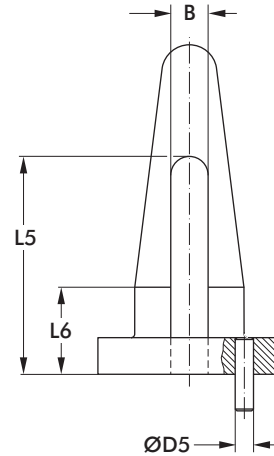
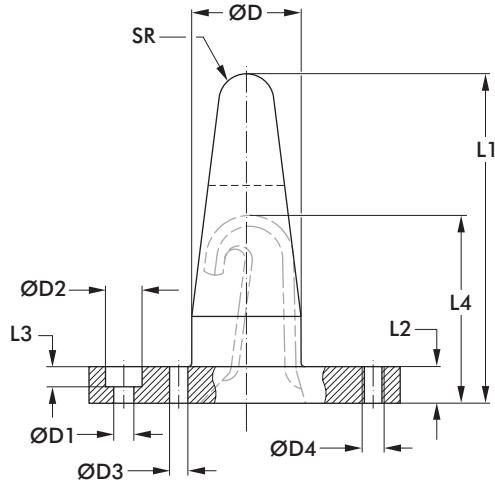
Model	B10 [±0.004 ±0,1]	B11 [±0.004] ±0,1]	B12* [±0.002] ±0,05]	B13 max.	B14 max.	B15* [±0.001] ±0,025]	B23 max.	B24	L1 max.	L2 [±0.004] ±0,1]	L4 ~	L5	L6 [±0.002] ±0,5]	L7 [±0.004] ±0,1]
82P30-32000D0									[11.97] 304		[1.57] 40			
82P30-32500D0	[1.38] 35	[1.00] 25,5	[1.18] 30	[4.49] 114	[4.21] 107	[0.59] 15	[2.97] 75,4	[4.21] 107	[12.05] 306	[0.39] 10	[1.73] 44	[0.45] 11,5	[1.57] 40	[0.94] 24
82P30-33000D0											[1.77] 45			
82P35-34000D0	[1.46] 37	[1.22] 31	[1.57] 40			[0.79] 20	[3.36] 85,4		[12.99] 330	[0.47] 12	[2.20] 56	[0.55] 14	[1.50] 38	[0.87] 22

\*Tolerances for dowel holes only

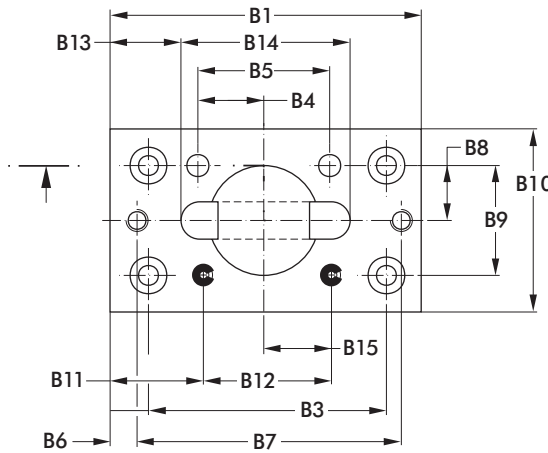
# 82P30-3/82P35-3 CENTERING PINS

Pneumatic Pin Clamp | Dimensions and Technical Specifications

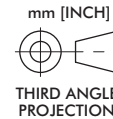
Centering Pin (has to be ordered separately)



Centering pin (accessory part)



Locating pin clamp with single-sided clamping hook and centering pin



Base locating clamp model	Order no.	ØD [-0.002 -0,05]	ØD1	ØD2	ØD3 H7	ØD4	ØD5 H11	SR	L1	L2 [+0.004 +0,1]	L3	L4	L5	L6	B	B1
82P30-320....	82P30-3-___.1)	[0.79-0.91] 20,0-23,0						[0.20] 5	[3.15] 80			[2.05] 52				
82P30-325....	82P30-3-___.1)	[0.91-1.10] 23,1-28,0	[0.22]	[0.39]	[0.24]	M6	[0.20] 5	[0.30] 7.5	[3.54] 90	[0.39] 10	[0.24] 6	[2.13] 54	[2.34] 59.5	[0.98] 25	[0.40] 10.2	[3.35] 85
82P30-330....	82P30-3-___.1)	[1.10-1.30] 28,1-33,0										[2.17] 55				
82P35-340....	82P35-3-___.1)	[1.30-1.77] 33,1-45,0						[0.31] 8	[4.02] 102	[0.47] 12		[2.68] 68	[2.89] 73.5	[1.18] 30	[0.48] 12.2	[3.54] 90

Base locating clamp model	Order no.	B2 [±0.004 ±0,1]	B3 [±0.001 ±0,2]	B4 [±0.0001 ±0,02]	B5 [±0.0001 ±0,02]	B6	B7 [±0.001 ±0,2]	B8* [±0.001 ±0,025]	B9* [±0.002 ±0,05]	B10	B11 [±0.004 ±0,1]	B12 [±0.004 ±0,1]	B13	B14	B15 [±0.002 ±0,05]	
82P30-320....	82P30-3-___.1)															
82P30-325....	82P30-3-___.1)	[0.41] 10.5	[2.56] 65	[0.71] 18	[1.42] 36		[0.41] 10.5	[2.56] 65	[0.59] 15	[1.18] 30	[1.97] 50	[1.00] 25.5	[1.38] 35	[0.76] 19.4	[1.82] 46.2	[0.73] 18.5
82P30-330....	82P30-3-___.1)															
82P35-340....	82P35-3-___.1)	[0.75] 19	[2.40] 61				[0.28] 7	[2.99] 76	[0.79] 20	[1.57] 40	[2.36] 60	[1.22] 31	[1.46] 37	[0.63] 16	[2.44] 62	[0.83] 21

\* Tolerance for dowel hole

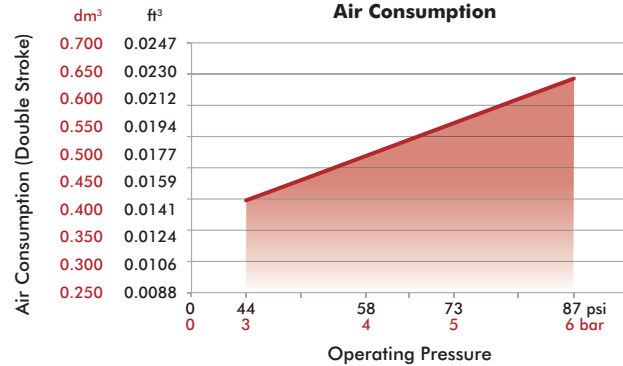
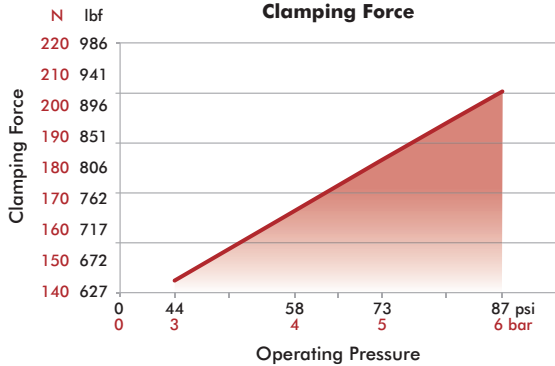
<sup>1)</sup> \_\_\_.1) = centering pin diameter "D"

Ordering example: To order the centering pin for locating pin clamp 82P30-325C000 with pin diameter "D" = 26.5 mm: "82P30-3-26.5"

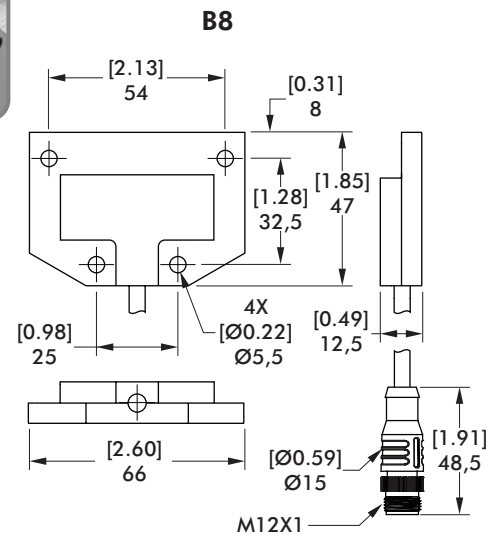
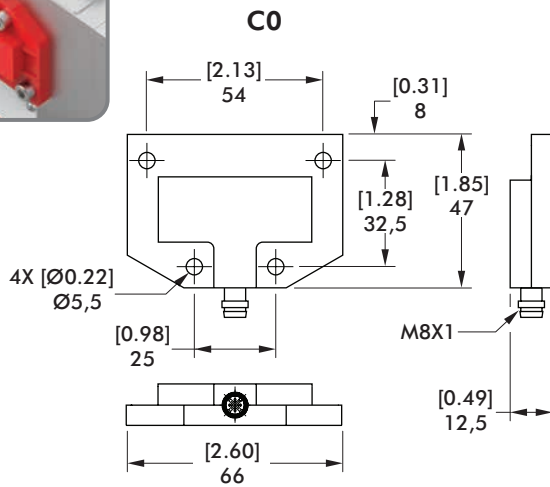
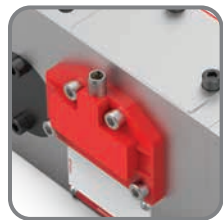
# 82P30-3/82P35-3 SENSORS

## Pneumatic Pin Clamp | Dimensions and Technical Specifications

### Clamping Force and Air Consumption

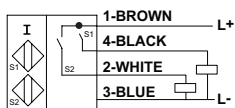
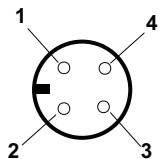


### C0 and B8 Inductive Sensing Systems



### Inductive Sensor Wiring Diagram

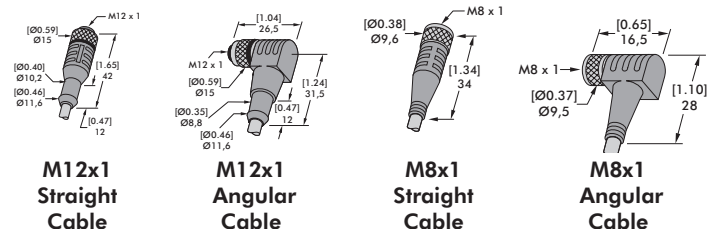
Sensing system immune to interference from A.C./D.C. arc welding.



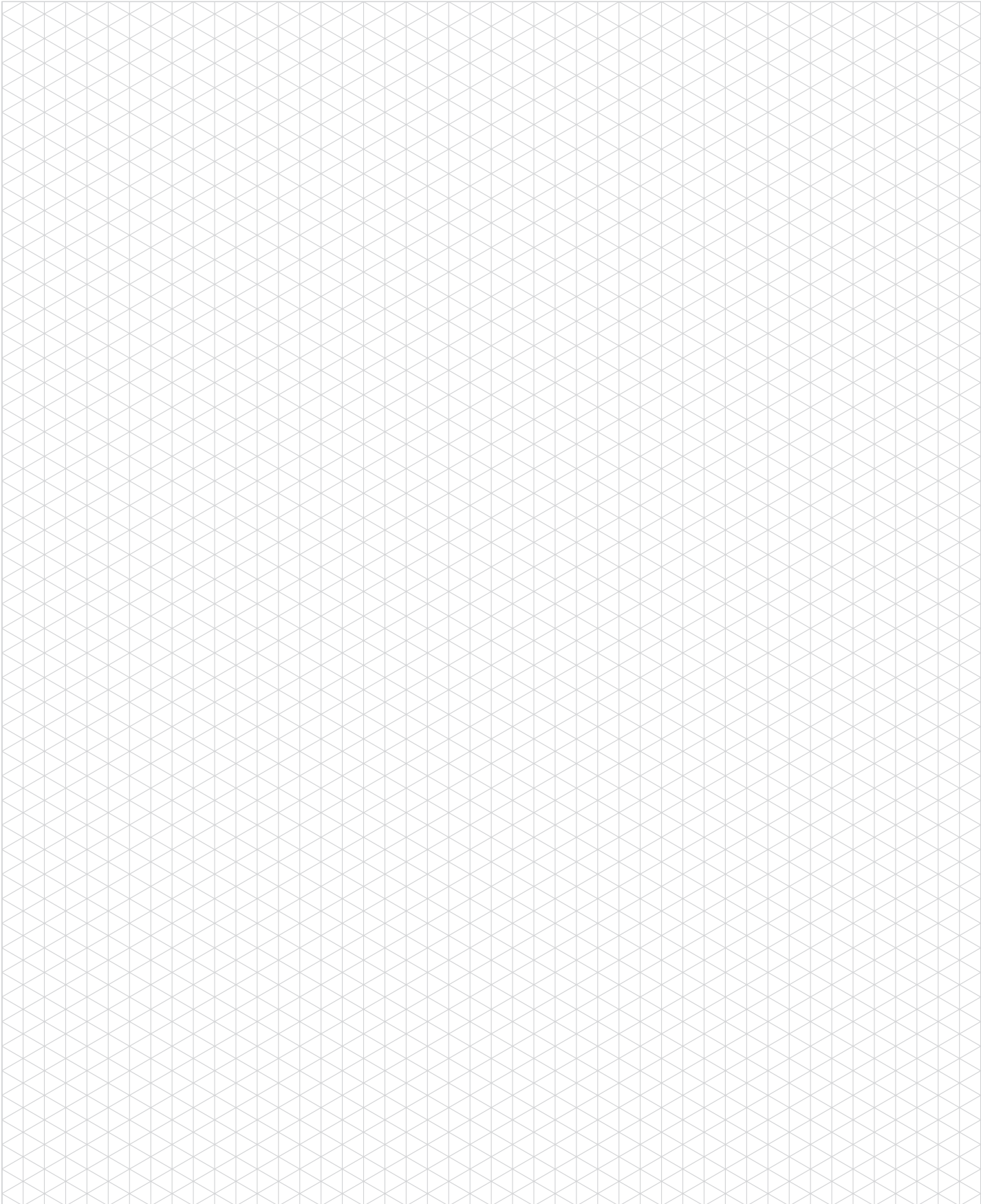
1-Common +  
2-Open  
3-Common -  
4-Closed

### Sensor Cable Accessories

Description	Order no.
<b>B8 Sensor Cables (1 connector &amp; 5 m cable)</b>	
M12x1 connector, straight, 5-pin	8EL-002-1
M12x1 connector, 90° angular, 4-pin	8EL-003-1
<b>C0 Sensor Cables (1 connector &amp; 5 m cable)</b>	
M8x1 connector, straight, 5-pin	8EL-009-1
M8x1 connector, 90° angular, 4-pin	8EL-007-1







# 82P50/82P63

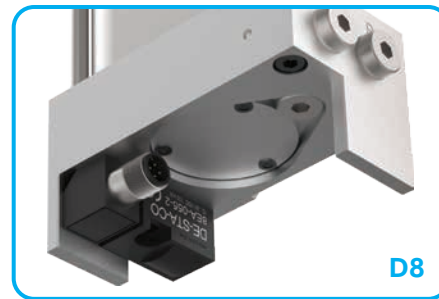
Pneumatic Pin Clamp | Tolerance Compensating | Ordering and Technical Information



Base Model	Description
82P50-720	50 mm Tandem Cylinder (G1/8 Port)
82P63-720	63 mm Tandem Cylinder (G1/8 Port)

Tolerance	Description
A	0-6 mm [0-0.236 in] tolerance compensation

Sensor	Description
D8	Inductive Sensing System with M12x1 Connector (8EA-151-1)



82P50-720

82P63-720

Specification	Unit	82P50	82P63
Clamping Force @ 5 bar	N [lbf]	1500 [337]	2500 [562]
Max. Operating Pressure	bar [psi]	6 [87]	6 [87]
Air Consumption			
Clamping @ 6 bar	liter [in <sup>3</sup> ]	0,66 [40.28]	0,92 [56.14]
Opening @ 6 bar	liter [in <sup>3</sup> ]	0,33 [20.13]	0,46 [28.07]
Weight	kg [lb]	3,2 [7.05]	3,9 [8.59]
Time:			
Clamping	sec	0.3	0.3
Opening	sec	0.3	0.3

# 82P50/82P63

## Pneumatic Pin Clamp | Tolerance Compensating | Ordering and Technical Specifications

**Hooks** For 82P50  
**01** for Flange Hole  
**03** for Flat Hole



**Hooks** For 82P63  
**02** for Flange Hole  
**04** for Flat Hole



**Centering Pin** For 82P50 with Hook  
**00** None 01 or 03  
**01** 18 mm Round 01 or 03  
**02** 20 mm Round 01 or 03  
**06** 19,9 mm Round 01 or 03  
**07** 19,9 mm Diamond 01 or 03



**Centering Pin** For 82P63 with Hook  
**00** None 02 or 04  
**03** 30 mm Round 02  
**04** 30 mm Diamond 02  
**05** 25 mm Round 02  
**08** 23 mm Round 02  
**09** 28 mm Round 02  
**10** 40 mm Round 04  
**11** 40 mm Diamond 04

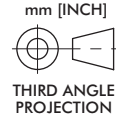
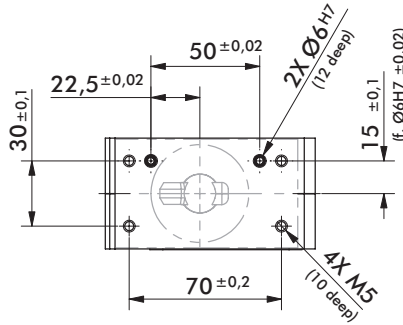
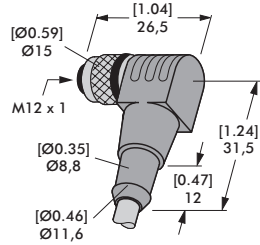


# 82P50

## Pneumatic Pin Clamp | Tolerance Compensating | Dimensions and Technical Specifications

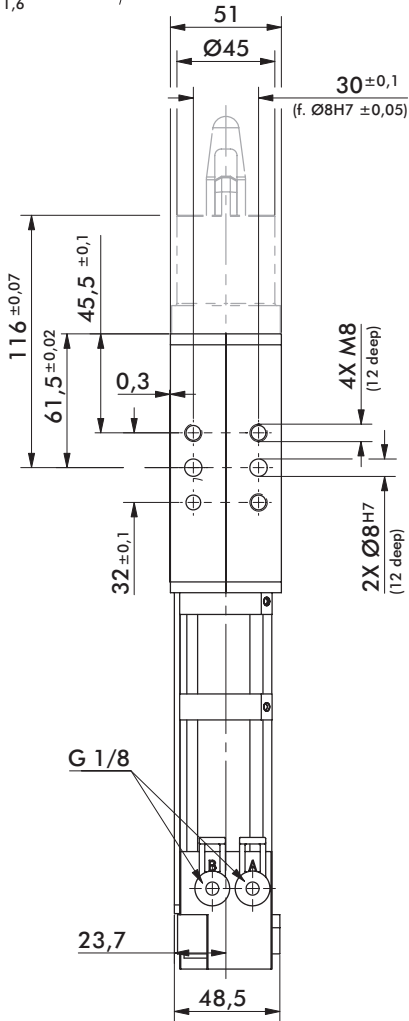
Sensor Cables Order separately

Description	Order no.
M12x1, Angular, 4-pin Connector with 5 m [16 ft.] Cable	8EL-003-1

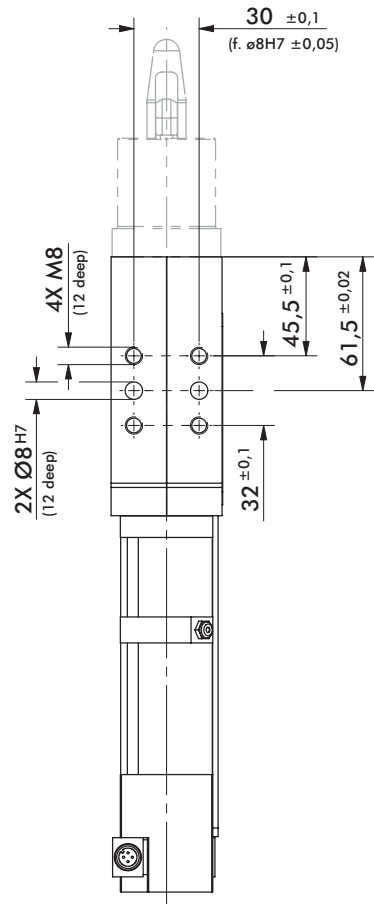
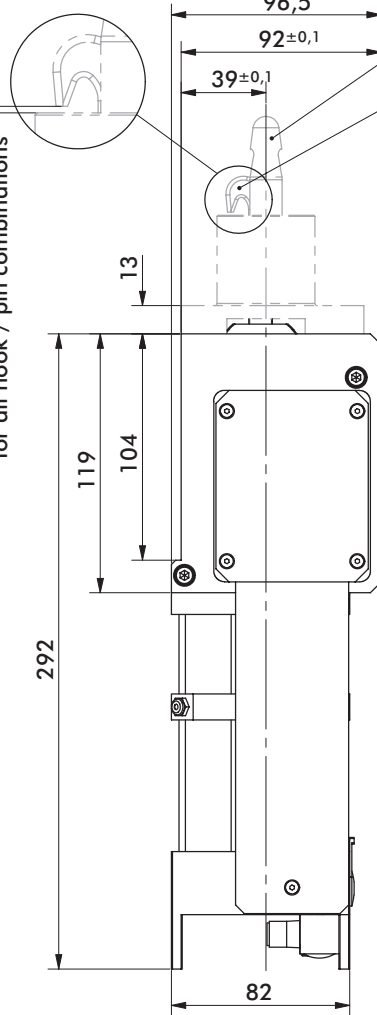


See page 14 for Centering Pin dimensions

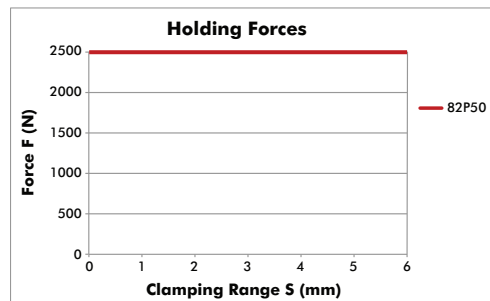
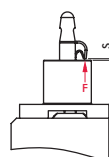
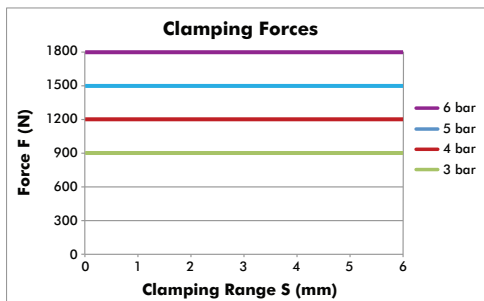
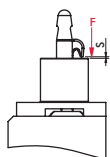
See page 18 for Clamp Hook specifications



0 - 6 mm clamping range for all hook / pin combinations

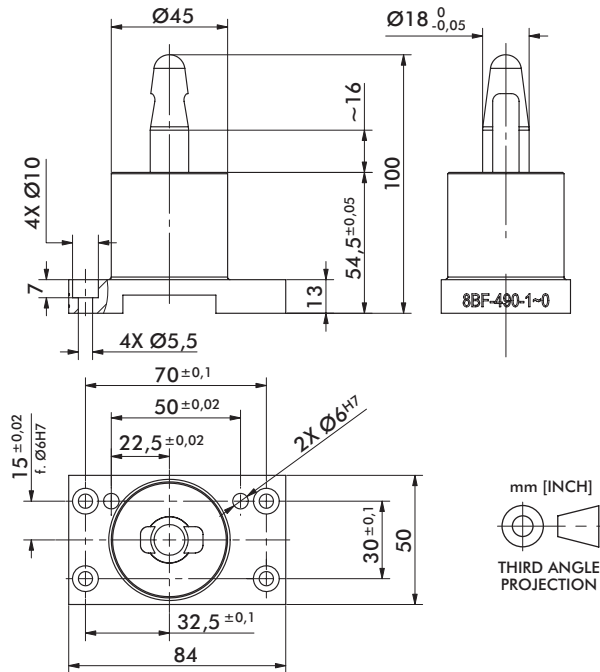


Operation with oil-free air is permissible.

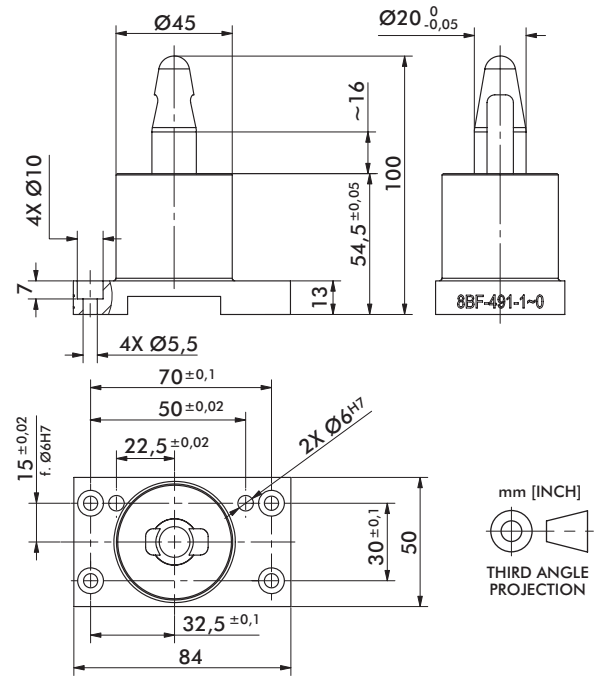


# 82P50 CENTERING PINS

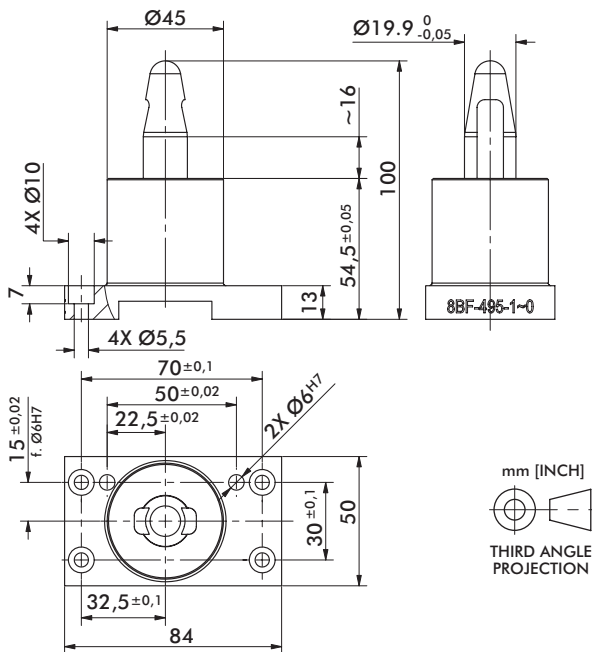
Pneumatic Pin Clamp | Tolerance Compensating | Dimensions and Technical Specifications



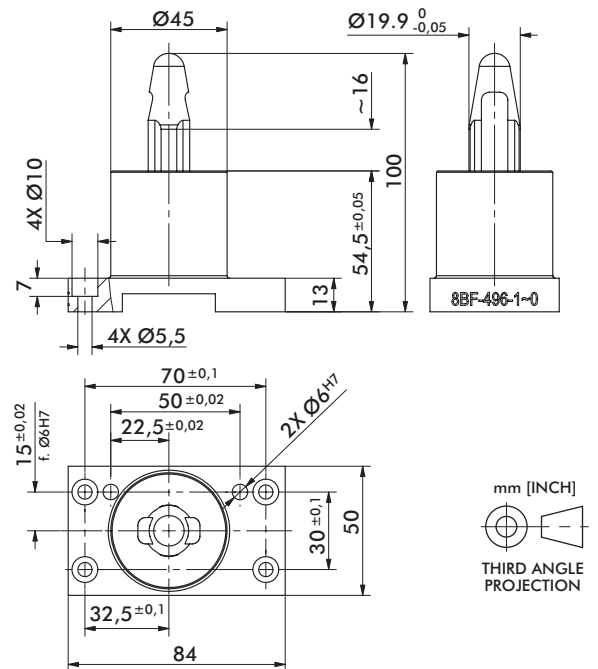
Specification	8BF-490-1
Weight	~0,60 kg
Diameter and Tolerance	Ø18 -0.05
Shape	Round



Specification	8BF-491-1
Weight	~0,60 kg
Diameter and Tolerance	Ø20 -0.05
Shape	Round



Specification	8BF-495-1
Weight	~0,60 kg
Diameter and Tolerance	Ø19,90 -0.05
Shape	Round



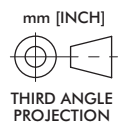
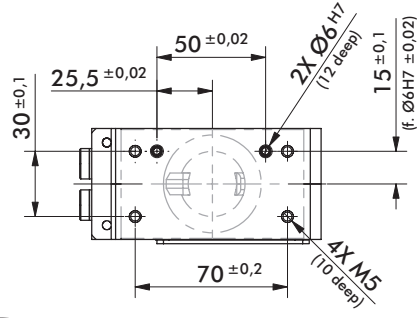
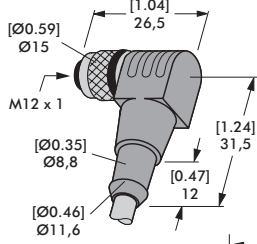
Specification	8BF-496-1
Weight	~0,60 kg
Diameter and Tolerance	Ø19,90 -0.05
Shape	Diamond

# 82P63

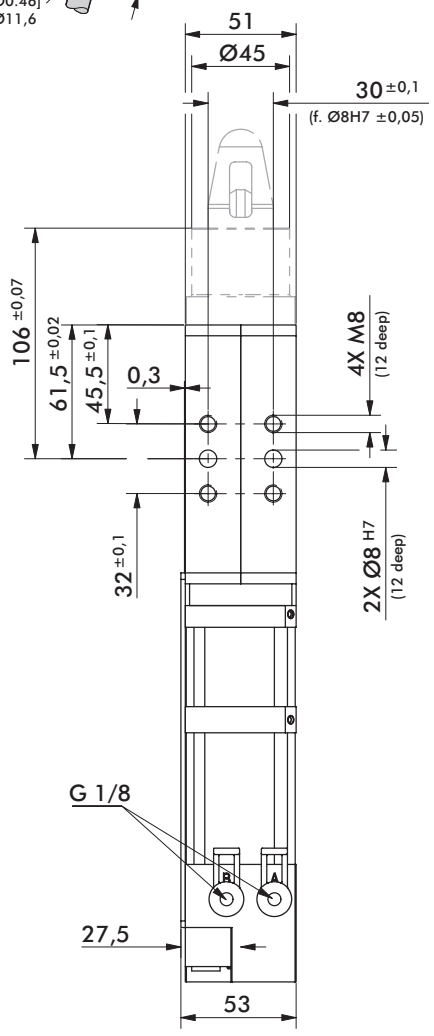
## Pneumatic Pin Clamp | Tolerance Compensating | Dimensions and Technical Specifications

Sensor Cables Order separately

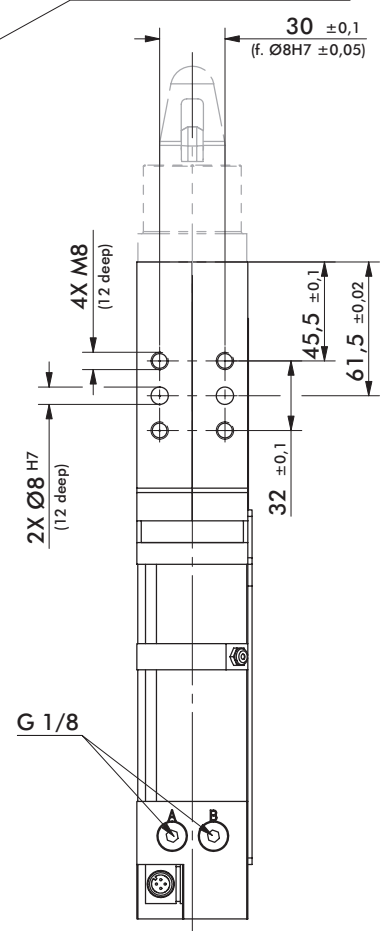
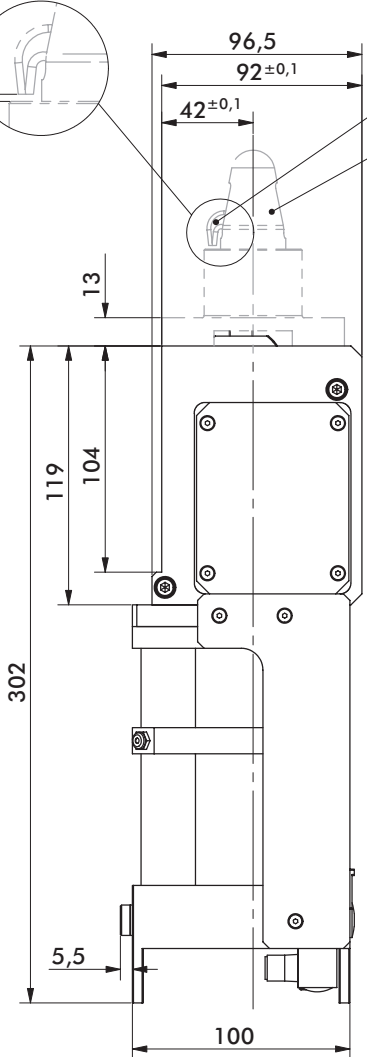
Description	Order no.
M12x1, Angular, 4-pin Connector with 5 m [16 ft.] Cable	8EL-003-1



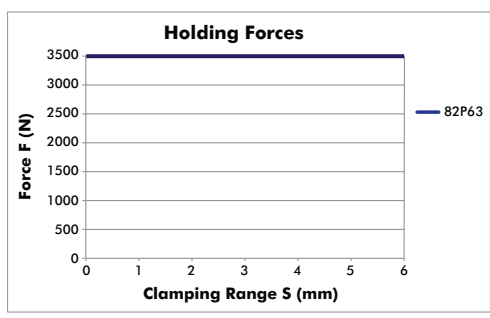
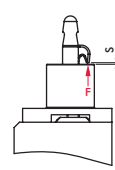
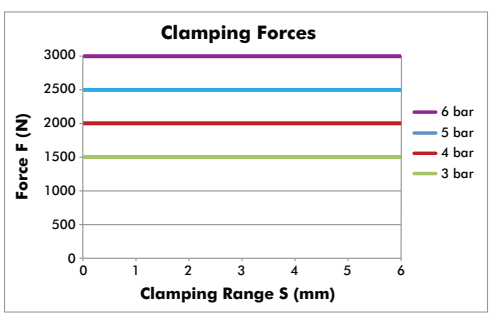
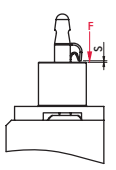
See page 18 for Clamp Hook specifications  
See page 16-17 for Centering Pin dimensions



0 - 6 mm clamping range for all hook / pin combinations

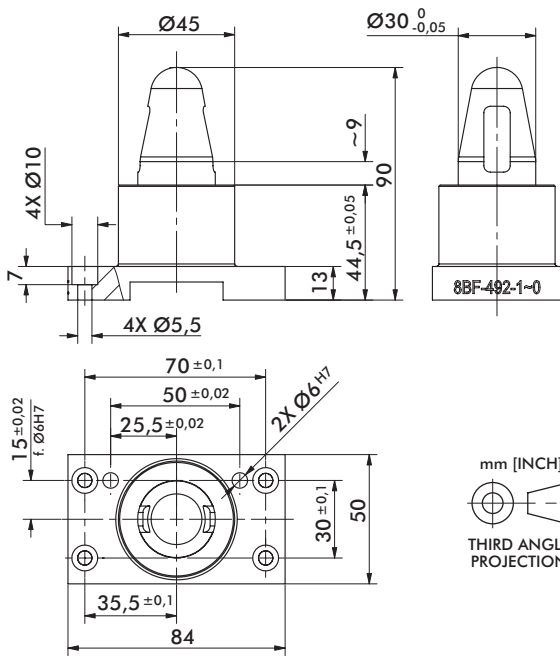


Operation with oil-free air is permissible.

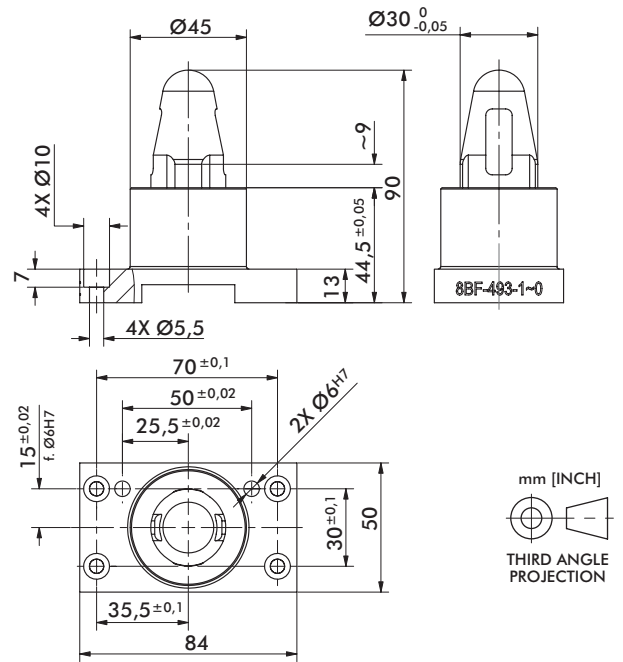


# 82P63 CENTERING PINS

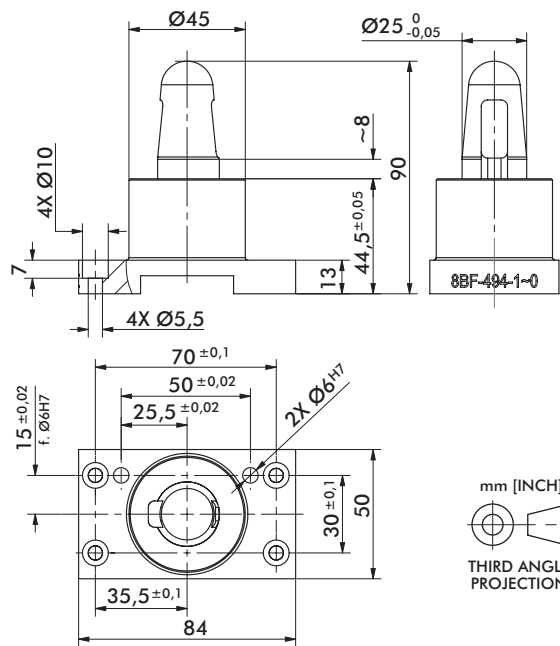
Pneumatic Pin Clamp | Tolerance Compensating | Dimensions and Technical Specifications



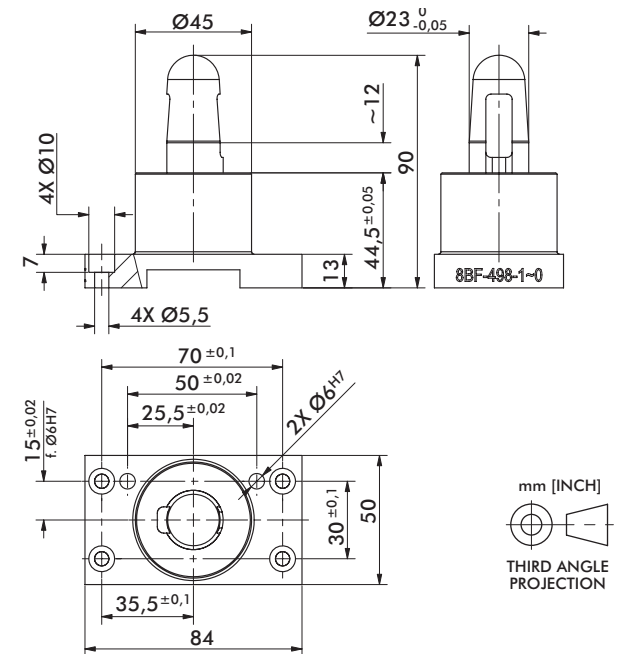
Specification	8BF-492-1
Weight	~0,57 kg
Diameter and Tolerance	Ø30 -0.05
Shape	Round



Specification	8BF-493-1
Weight	~0,57 kg
Diameter and Tolerance	Ø30 -0.05
Shape	Diamond



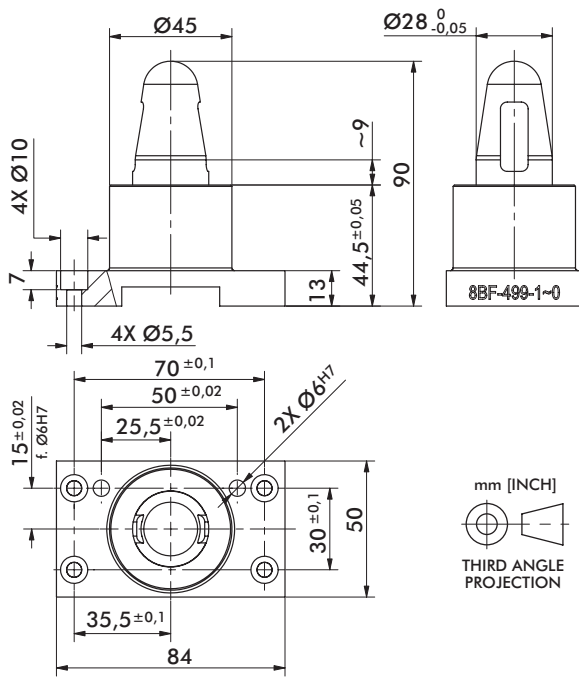
Specification	8BF-494-1
Weight	~0,54 kg
Diameter and Tolerance	Ø25 -0.05
Shape	Round



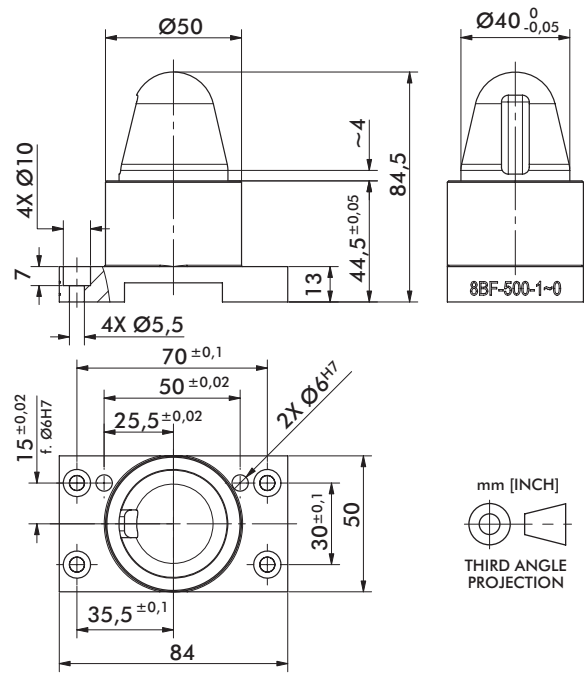
Specification	8BF-498-1
Weight	~0,53 kg
Diameter and Tolerance	Ø23 -0.05
Shape	Round

# 82P63 CENTERING PINS

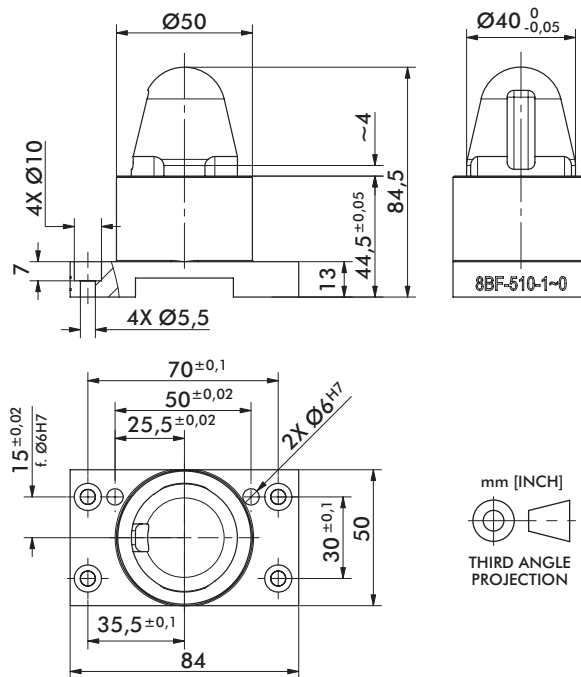
Pneumatic Pin Clamp | Tolerance Compensating | Dimensions and Technical Specifications



Specification	8BF-499-1
Weight	~0,56 kg
Diameter and Tolerance	Ø28 -0.05
Shape	Round



Specification	8BF-500-1
Weight	~0,68 kg
Diameter and Tolerance	Ø40 -0.05
Shape	Round



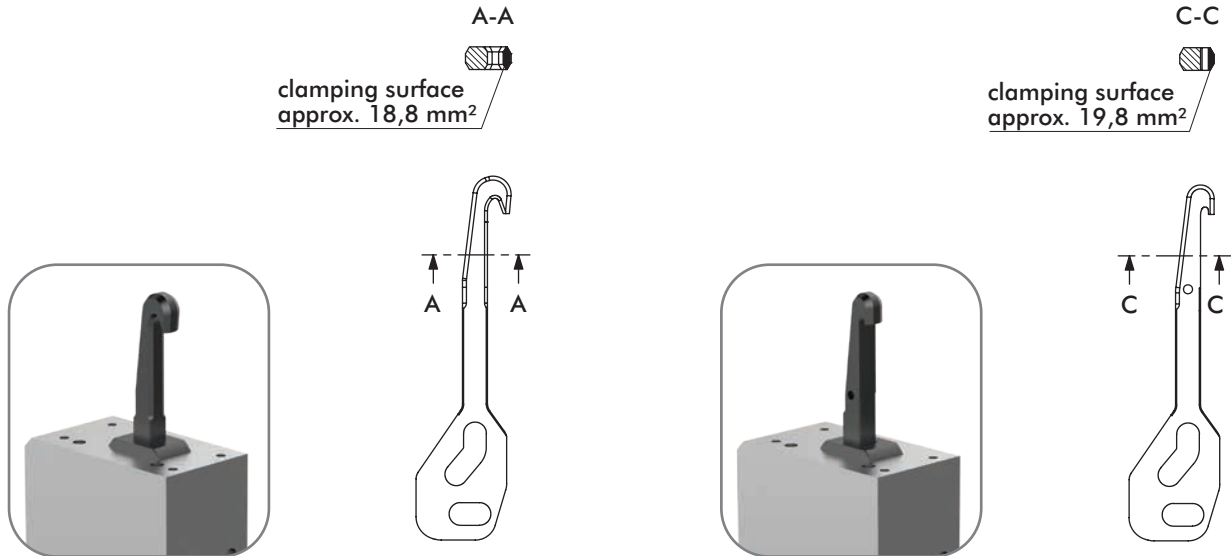
Specification	8BF-510-1
Weight	~0,68 kg
Diameter and Tolerance	Ø40 -0,05
Shape	Diamond



# 82P50/82P63 CLAMPING HOOKS

Pneumatic Pin Clamp | Tolerance Compensating | Surface Pressure of Clamping Hooks

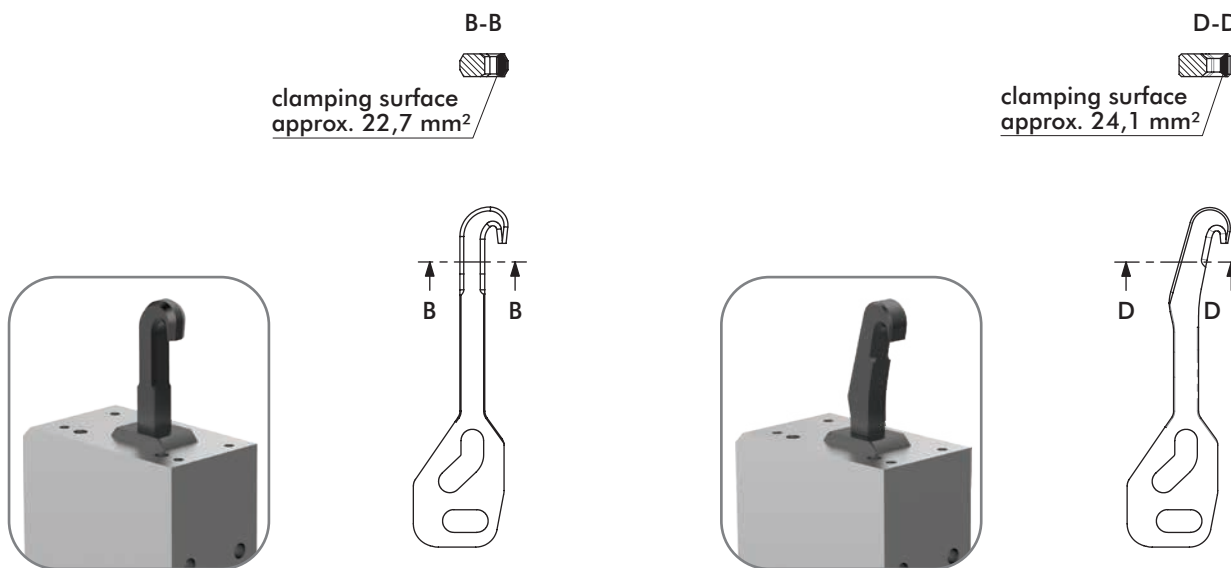
## 82P50



Specification	8JH-162-1			
Pressure [bar]	3.0	4.0	5.0	6.0
Clamping Force [N]	900	1200	1500	1800
Surface Pressure [N/mm <sup>2</sup> ]	48	64	80	96

Specification	8JH-164-1			
Pressure [bar]	3.0	4.0	5.0	6.0
Clamping Force [N]	900	1200	1500	1800
Surface Pressure [N/mm <sup>2</sup> ]	45	61	76	91

## 82P63

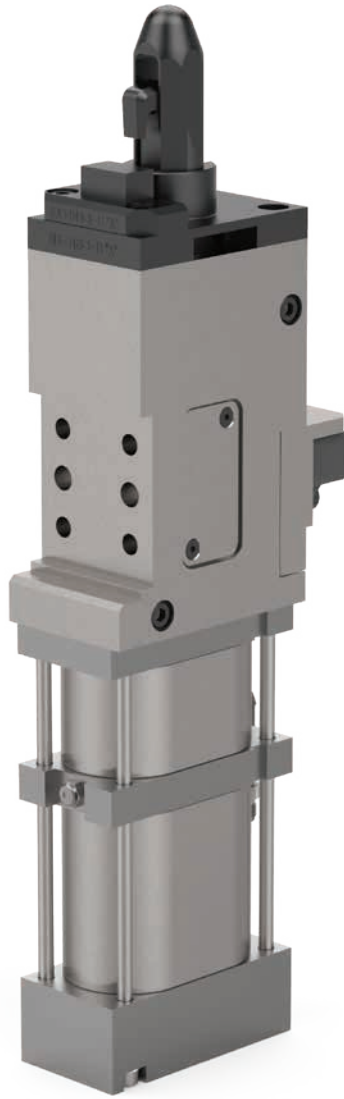
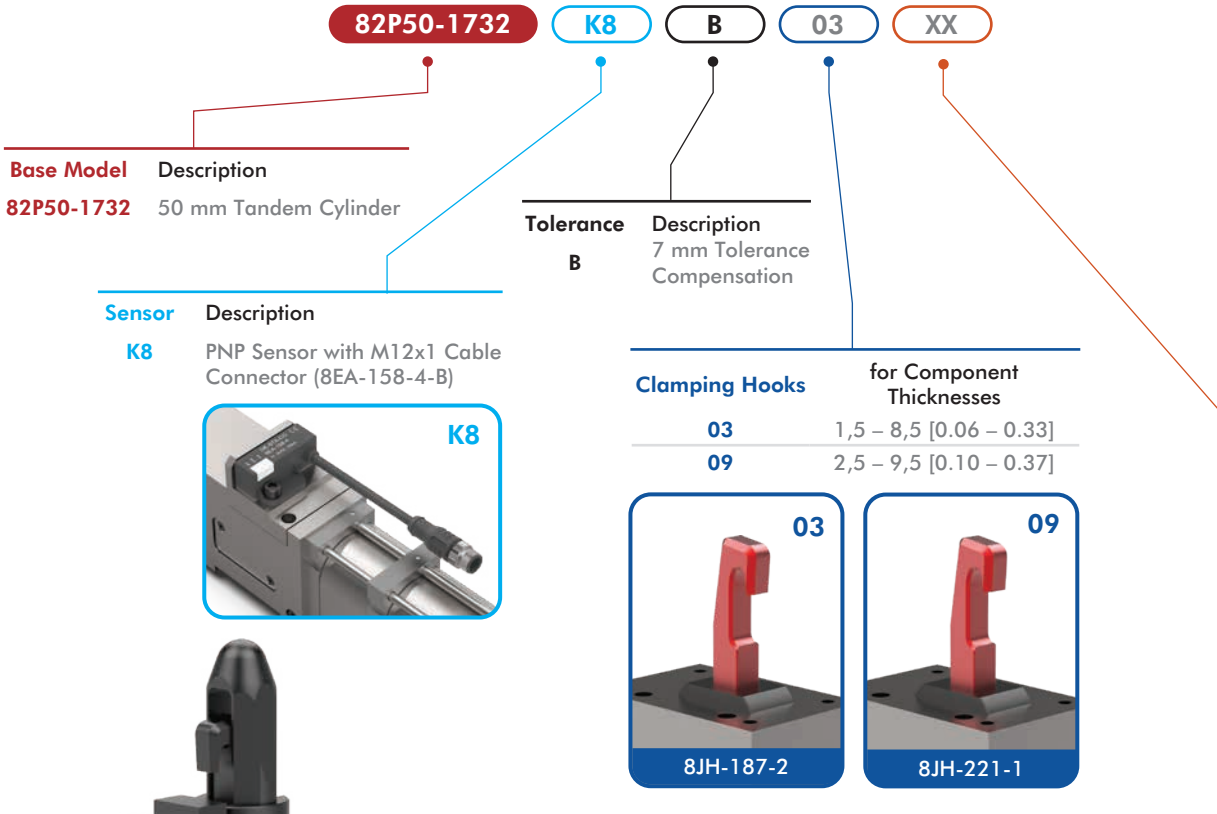


Specification	8JH-163-1			
Pressure [bar]	3.0	4.0	5.0	6.0
Clamping Force [N]	1500	2000	2500	3000
Surface Pressure [N/mm <sup>2</sup> ]	66	88	110	132

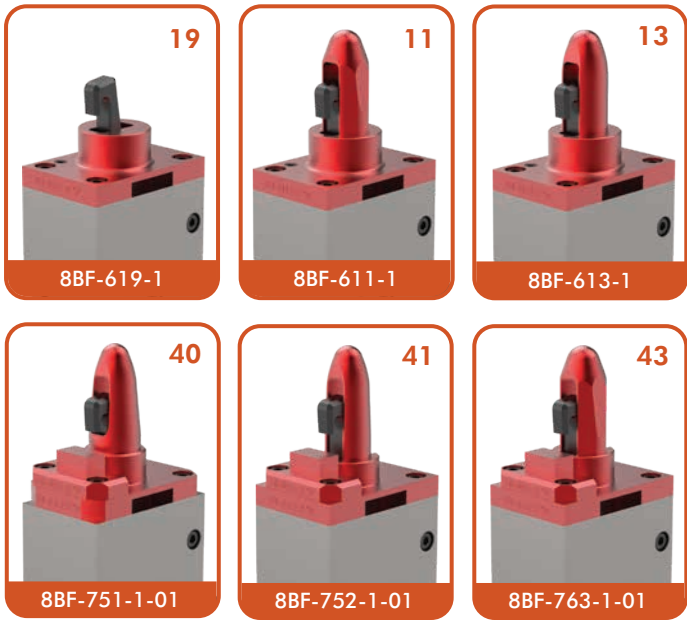
Specification	8JH-165-1			
Pressure [bar]	3.0	4.0	5.0	6.0
Clamping Force [N]	1500	2000	1500	1800
Surface Pressure [N/mm <sup>2</sup> ]	62	83	104	124

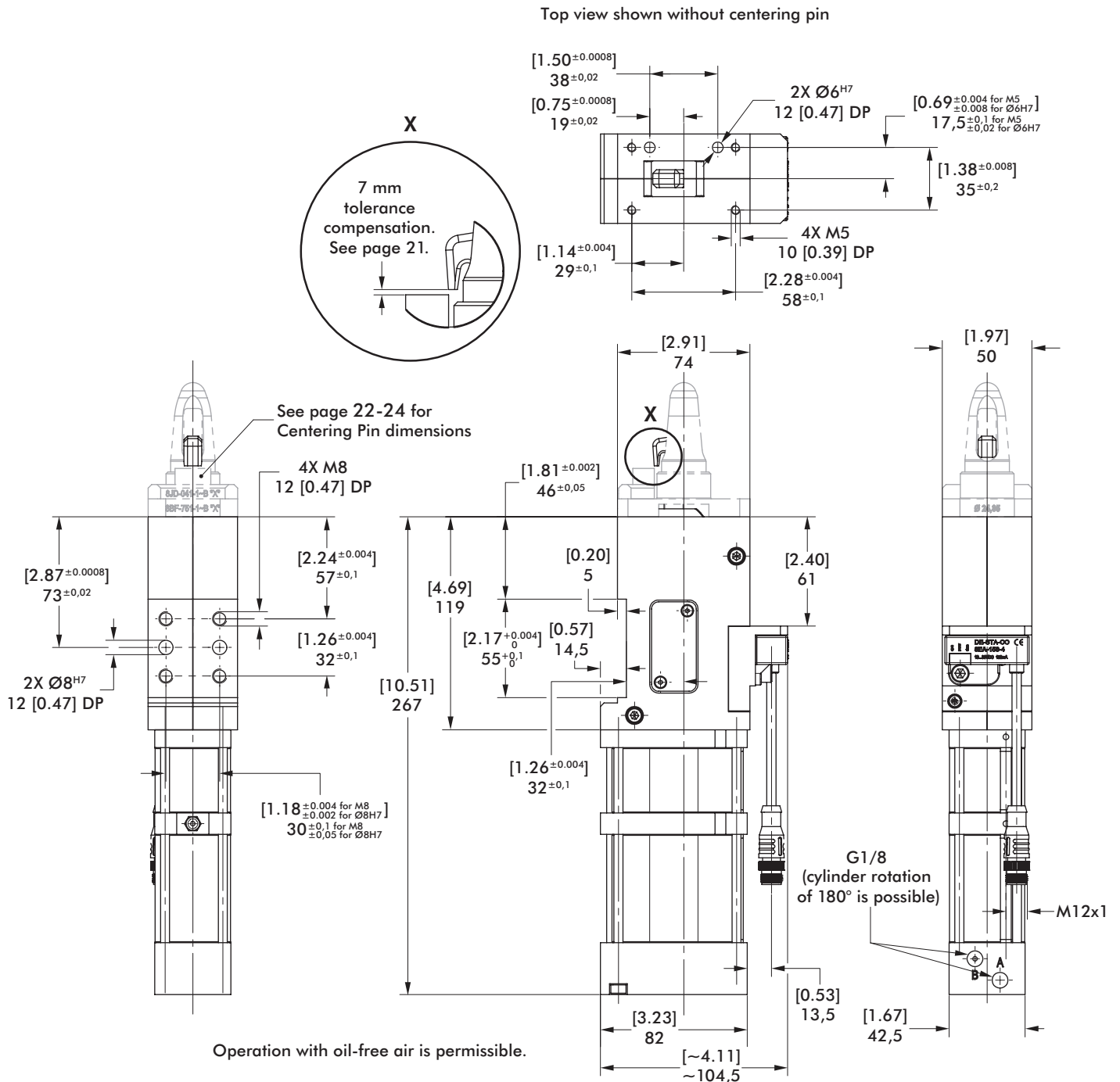
# 82P50-1732

Pneumatic Centering Pin Clamp | Tolerance Compensation | Ordering Information

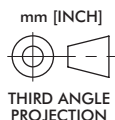


Centering Pin/Support	Pin Diameter and Tolerance	Centering Pin Shape	Component Material
<b>19</b>	N/A	Support Only	Steel/Aluminum
<b>11</b>	∅ 24,85 -0,05	Diamond Pin	Steel
<b>13</b>	∅ 22,00 -0,05		
<b>40</b>	∅ 24,85 -0,05	Round Pin	Aluminum
<b>41</b>	∅ 22,00 -0,05		
<b>43</b>	∅ 24,85 -0,05	Diamond Pin	





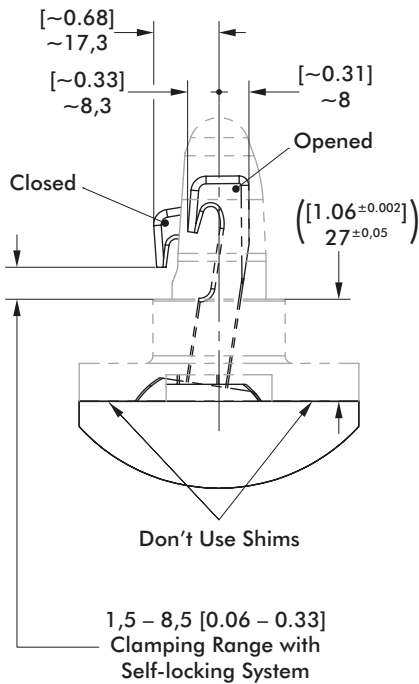
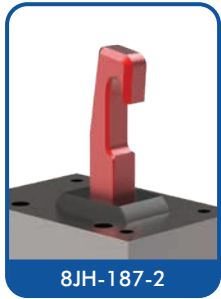
Specification	Unit	82P50-1732
Max. Clamping Force @ 5 bar [72psi]	N [lbf]	~1500 [~337]
Max. Operating Pressure	bar [psi]	6 [87]
Actuation Time: Open/Close	sec	0.3
Air Consumption @ 6 bar [87psi]:		
Clamping Stroke	liter [in <sup>3</sup> ]	0,66 [40.28]
Opening Stroke	liter [in <sup>3</sup> ]	0,33 [20.14]
Weight	kg [lb]	~2,6 [~5.73]



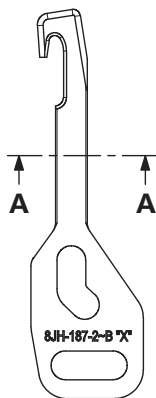
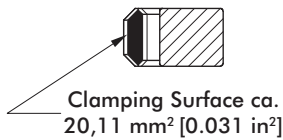
# 82P50-1732 CLAMPING HOOKS

Pneumatic Centering Pin Clamp | Tolerance Compensation | Dimensions and Specifications

## 03 Clamping Hook



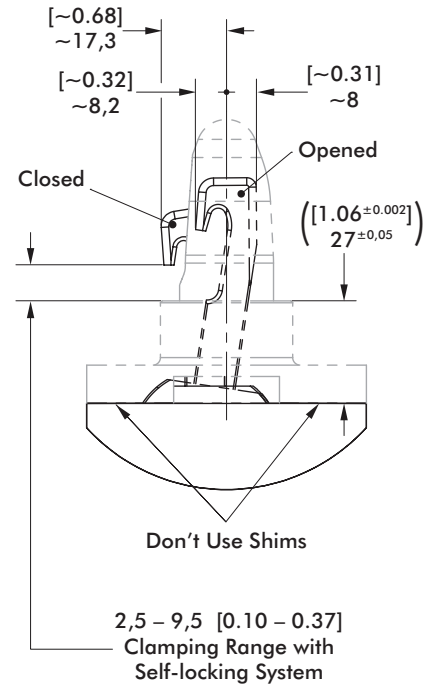
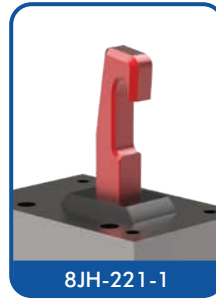
A-A  
1:1



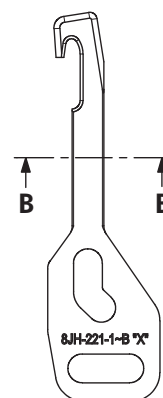
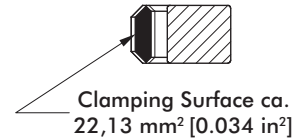
### Surface Pressure of Clamping Hook

Specification	Units	8JH-187-2			
Pressure	[psi]	[44]	[58]	[72]	[87]
	bar	3,0	4,0	5,0	6,0
Clamping Force	[lbf]	[202]	[270]	[337]	[405]
	N	900	1200	1500	1800
Surface Pressure	[lbf/in <sup>2</sup> ]	[6516]	[8710]	[10871]	[13065]
	N/mm <sup>2</sup>	45	60	75	90

## 09 Clamping Hook



B-B  
1:1



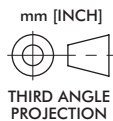
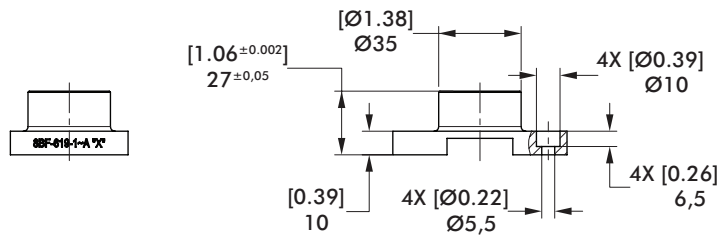
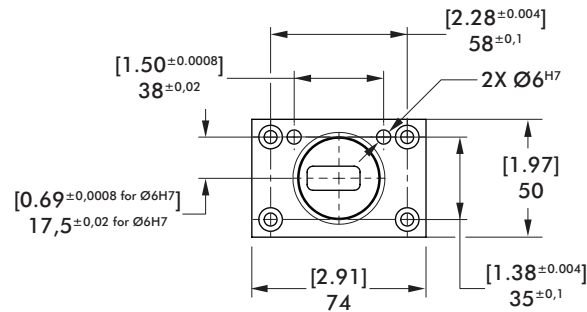
### Surface Pressure of Clamping Hook

Specification	Units	8JH-221-1			
Pressure	[psi]	[44]	[58]	[72]	[87]
	bar	3,0	4,0	5,0	6,0
Clamping Force	[lbf]	[202]	[270]	[337]	[405]
	N	900	1200	1500	1800
Surface Pressure	[lbf/in <sup>2</sup> ]	[5941]	[7941]	[9912]	[11912]
	N/mm <sup>2</sup>	41	54	68	81

# 82P50-1732 PIN SUPPORT AND CENTERING PIN

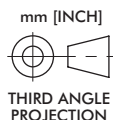
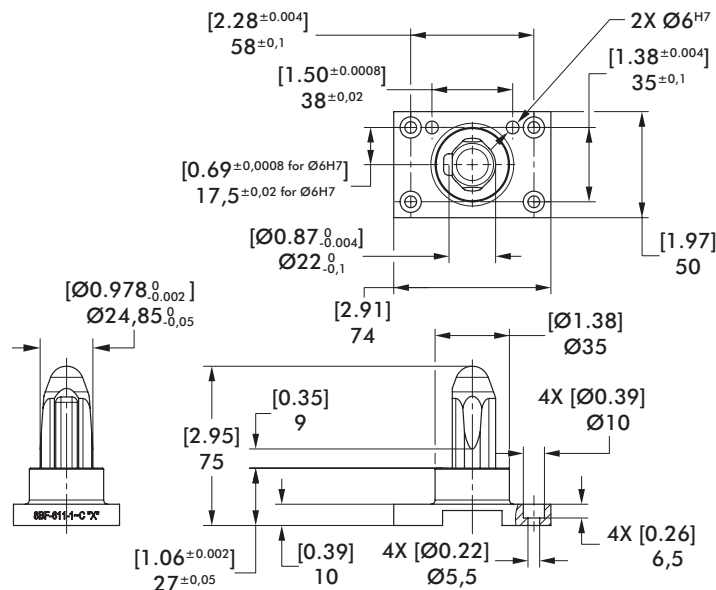
Pneumatic Centering Pin Clamp | Tolerance Compensation | Dimensions and Specifications

## 19 Pin Support - Steel/Aluminum



Specification	Units	8BF-619-1
Weight	kg [lb]	~0,25 kg [~55 lb]

## 11 Centering Pin - Steel

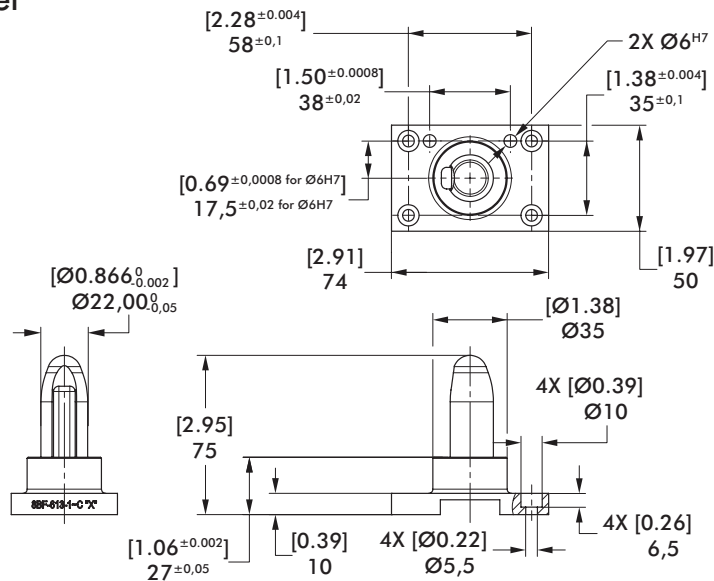


Specification	Units	8BF-611-1
Weight	kg [lb]	~0,33 [~0.73]
Diameter and Tolerance	mm [in]	Ø24,85 <sup>-0,05</sup> [Ø0.978 <sup>-0,002</sup> ]
Shape		Diamond

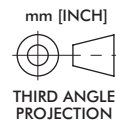
# 82P50-1732 CENTERING PINS

Pneumatic Centering Pin Clamp | Tolerance Compensation | Dimensions and Specifications

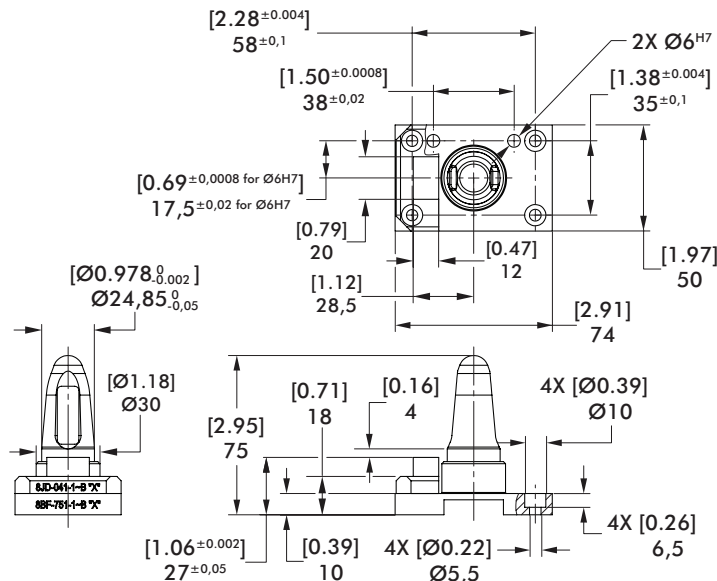
## 13 Centering Pin - Steel



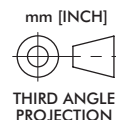
Specification	Units	8BF-613-1
Weight	kg [lb]	~0,32 [~0.71]
Diameter and Tolerance	mm [in]	Ø22,00 <sup>-0,05</sup> [Ø0.866 <sup>-0.002</sup> ]
Shape		Round



## 40 Centering Pin - Aluminum



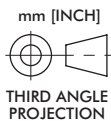
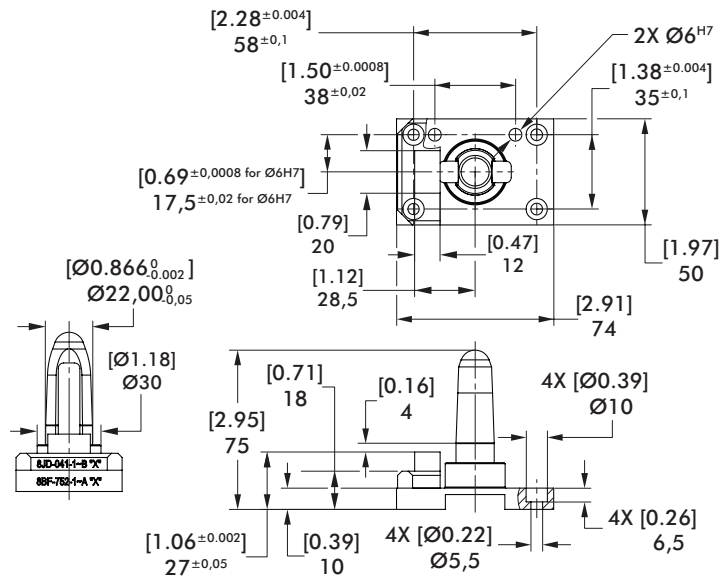
Specification	Units	8BF-751-1-01
Weight	kg [lb]	~0,33 [~0.73]
Diameter and Tolerance	mm [in]	Ø24,85 <sup>-0,05</sup> [Ø0.978 <sup>-0.002</sup> ]
Shape		Round



# 82P50-1732 CENTERING PINS

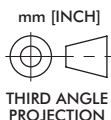
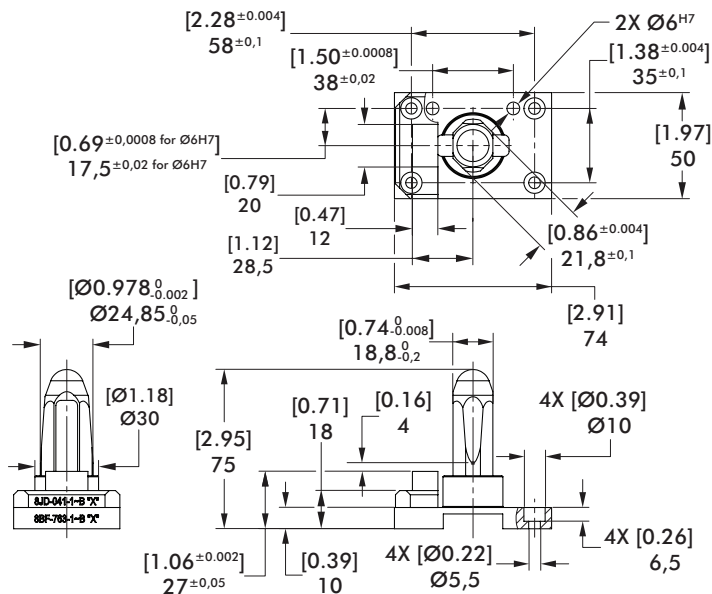
Pneumatic Centering Pin Clamp | Tolerance Compensation | Dimensions and Specifications

## 41 Centering Pin - Aluminum



Specification	Units	8BF-752-1-01
Weight	kg [lb]	~0,32 [~0.71]
Diameter and Tolerance	mm [in]	Ø22,00 <sup>-0,05</sup> [Ø0.866 <sup>-0,002</sup> ]
Shape		Round

## 43 Centering Pin - Aluminum

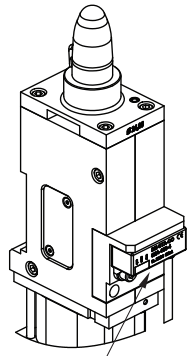
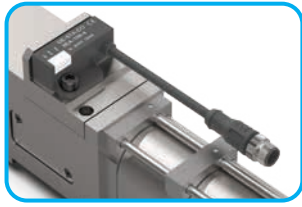


Specification	Units	8BF-763-1-01
Weight	kg [lb]	~0,35 [~0.77]
Diameter and Tolerance	mm [in]	Ø24,85 <sup>-0,05</sup> [Ø0.978 <sup>-0,002</sup> ]
Shape		Diamond

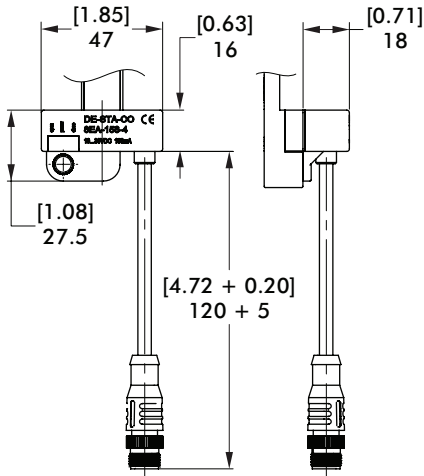
# 82P50-1732 SENSORS AND SPECIFICATIONS

Pneumatic Centering Pin Clamp | Tolerance Compensation | Technical Specifications

## K8 Inductive Sensing System with Pigtail Connector



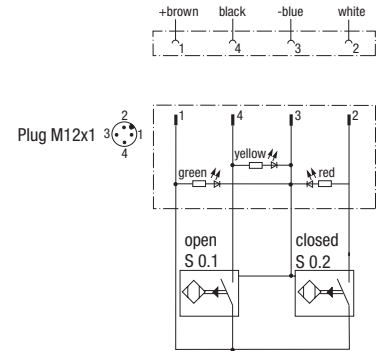
No adjustment of sensing system necessary!



8EA-158-4-B

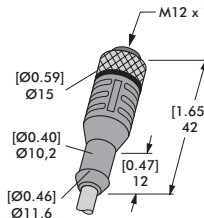
## Inductive Sensor Wiring Diagram

Sensing system immune to interference from A.C./D.C. arc welding.

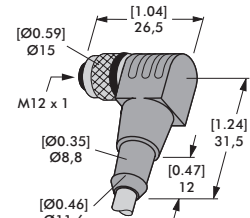


## Sensor Cable Accessories

Order no.	Description
8EL-002-1	M12x1, Straight, 5-pin Connector with 5 m [16 ft.] Cable
8EL-003-1	M12x1, Angular, 4-pin Connector with 5 m [16 ft.] Cable

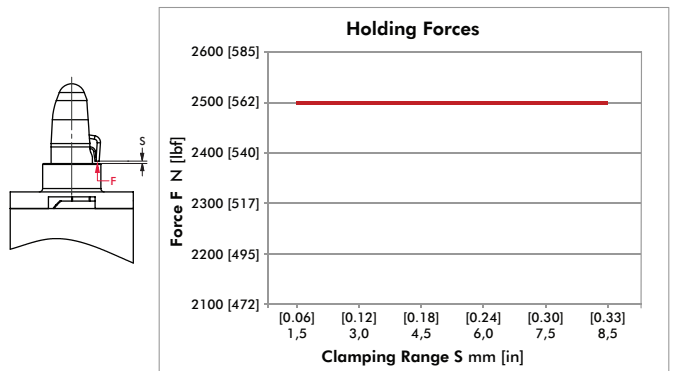
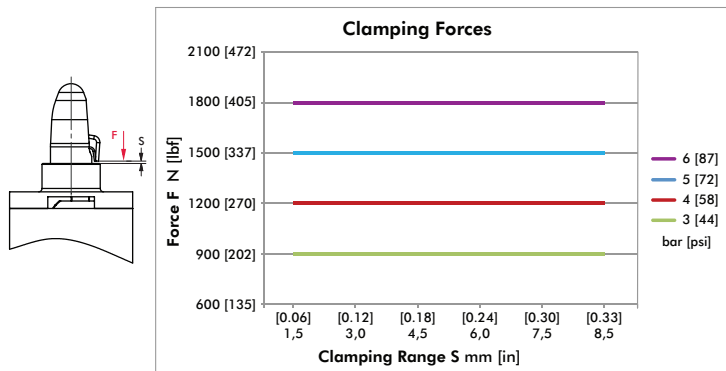


Straight Cable  
8EL-002-1

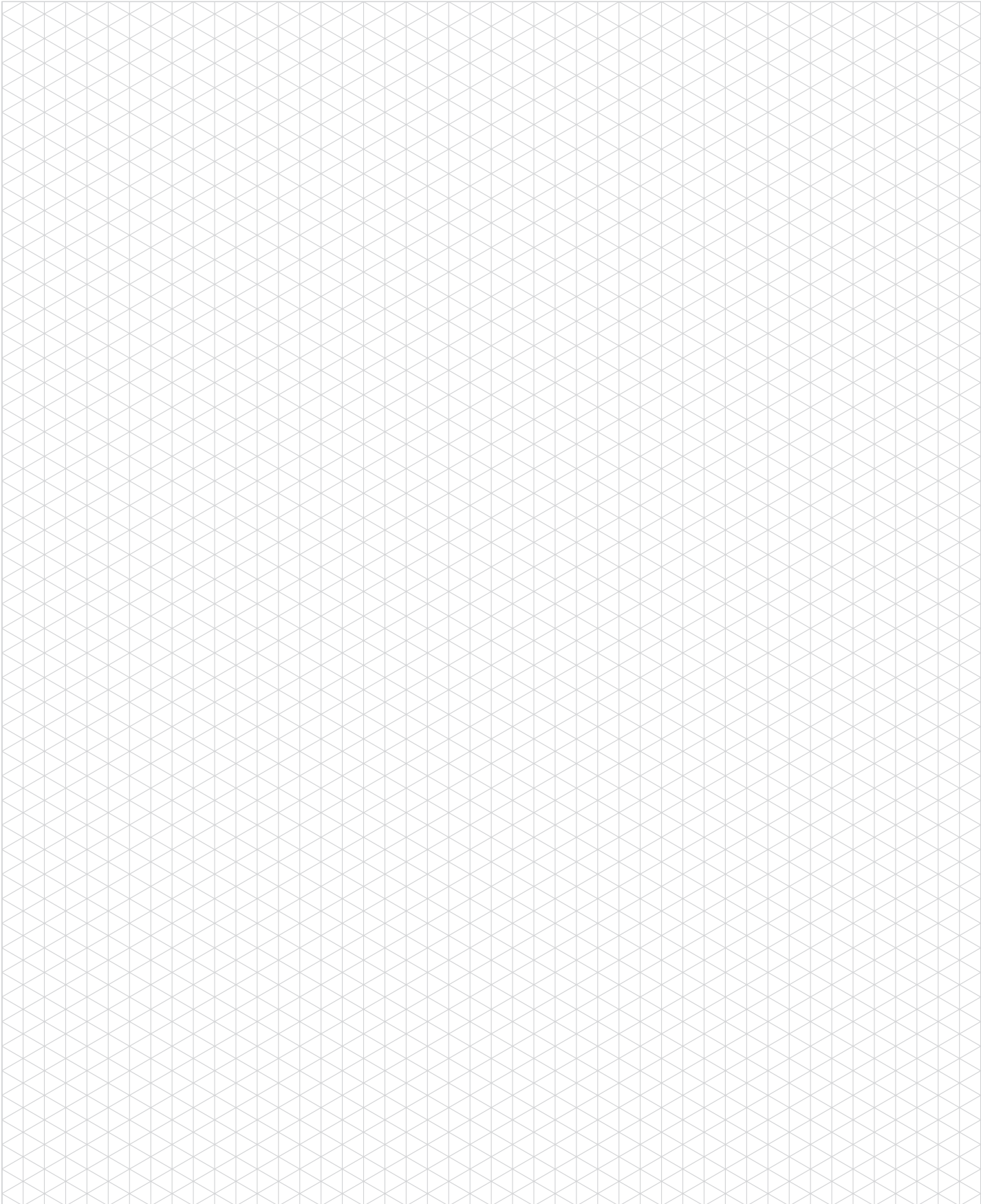


Angular Cable  
8EL-003-1

## Clamping and Holding Forces







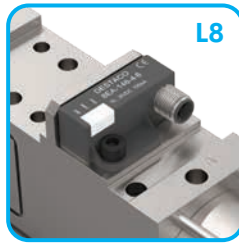
# 82P50-1800

Pneumatic Centering Pin Clamp | Tolerance Compensation | Ordering Information

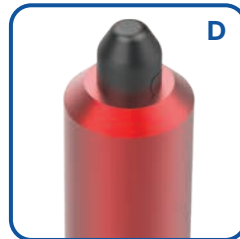
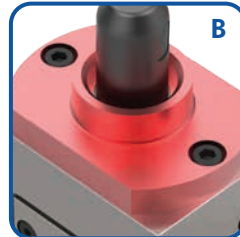
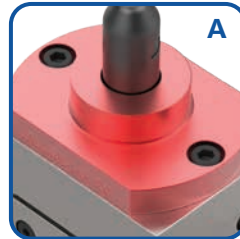
**82P50-1800** **L8** **A** **01** **0** **0** **0**

Base Model	Description
<b>82P50-1800</b>	Tolerance Compensation 0 - 5 mm [0 - 0.197 in]

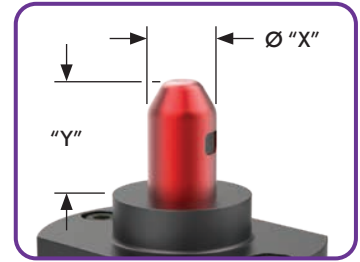
Sensor	Description
<b>L8</b>	PNP Sensor with M12x1 In-line Connector (8EA-146-4-B and 8EA-163-G)



Support Shape	Description
<b>A</b>	Standard
<b>B</b>	Flange Hole Down
<b>D</b>	Chamfered



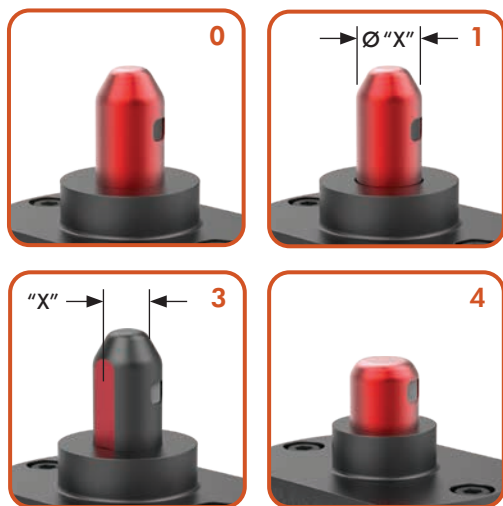
Pin Diameter	Pin Ø "X" mm <sup>-0,05</sup>	Pin Height "Y" mm
<b>01</b>	15,8	
<b>02</b>	19,8	26
<b>03</b>	20,8	
<b>04</b>	29,8	38
<b>05</b>	15,5	26
<b>06</b>	29,8	38



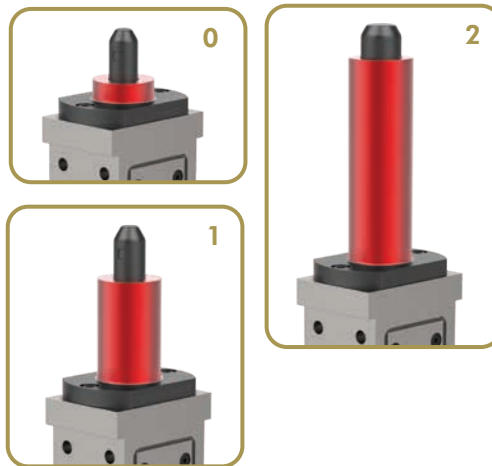
CNOMO fixing  
with adaptor  
shown. Order  
Separately:  
**8MA-538-1**



Pin Shape	Description	Release Dimension "X"
0	Round	
1	Pin Clipping	"X" = Pin Ø minus 0.8 mm
3	Pin Release on Flat Parallel of Finger	Pin Ø      Flat "X" Ø15,8      14,5 mm Ø29,8      21,0 mm
4	Door Case	



Support Height	Description
0	10 mm
1	50 mm
2	100 mm



Finger Shape	Desc.
0	Full
1	Hook



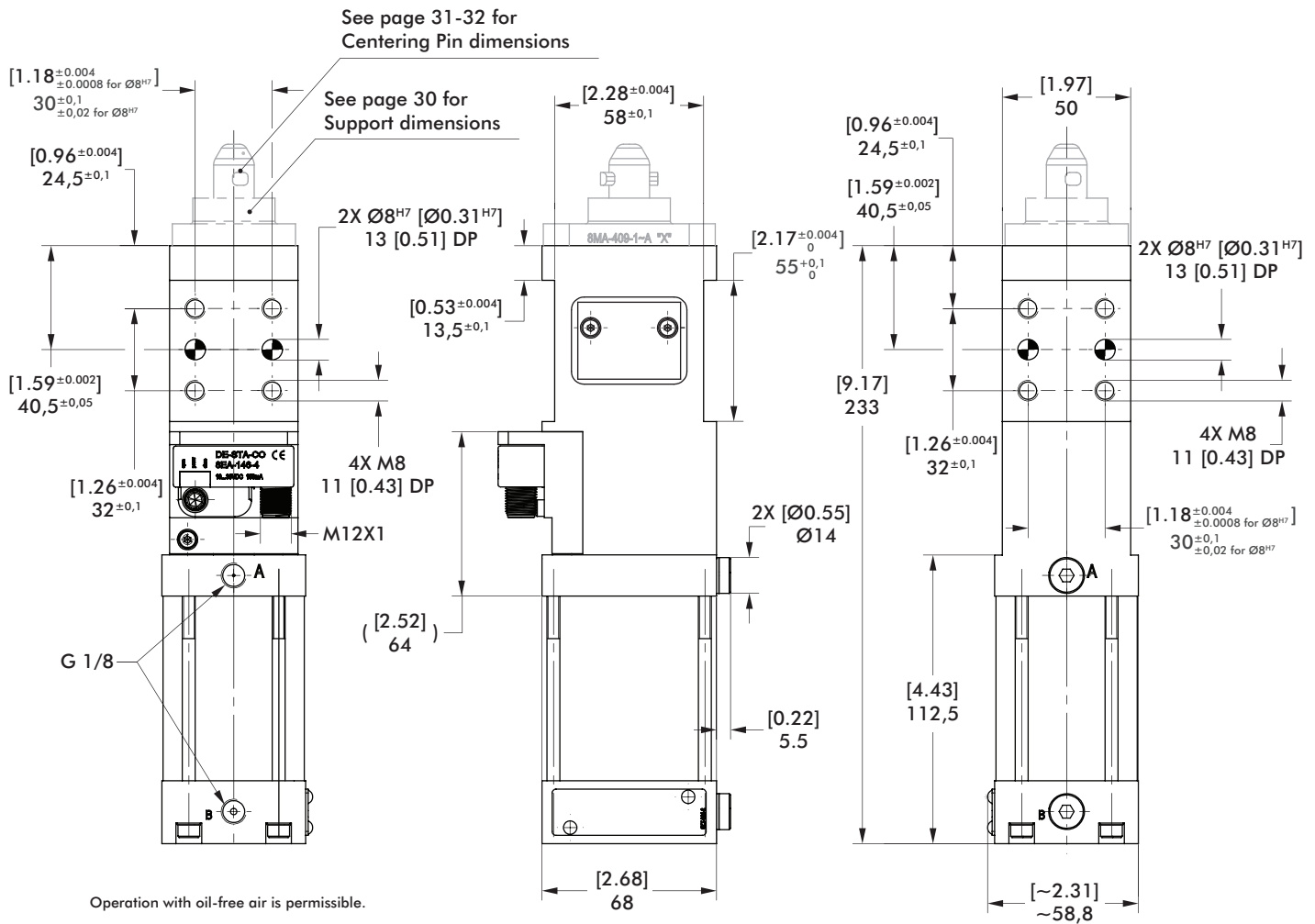
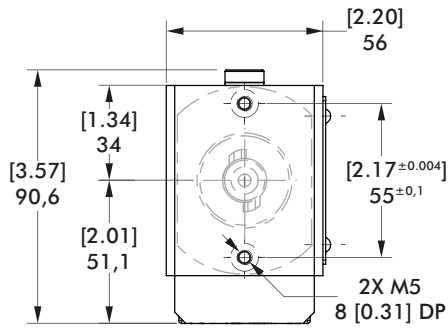
### Configuration Compatibility Chart

Determine the most important option, then find compatible combination of options within each row.

Pin Diameter	Support Shape			Pin Shape				Support Height			Finger Shape	
	Standard	Flange Hole Down	Chamfer	Round	Pin Clipping	Flat	Door Case	10 mm	50 mm	100 mm	Full	Hook
	A	B	D	0	1	3	4	0	1	2	0	1
01    Ø15,8	•			•	•	•	•	•			•	
	•			•					•		•	
			•	•	•					•	•	
02    Ø19,8	•			•				•			•	
		•			•			•				•
03    Ø20,8	•			•						•	•	
	•				•					•		•
				•	•			•			•	•
04    Ø29,8	•			•			•	•			•	•
	•							•			•	
		•		•				•				•
05    Ø15,5	•			•				•			•	
06    Ø29,8		•				•		•				•

# 82P50-1800

## Pneumatic Centering Pin Clamp | Dimensions and Specifications



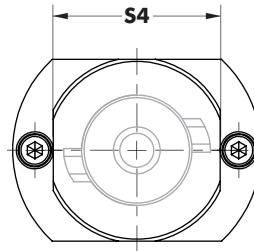
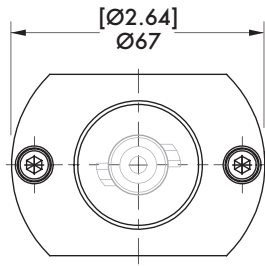
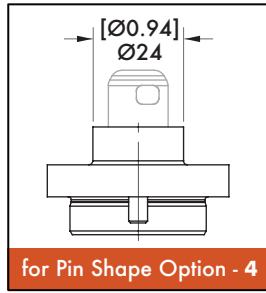
Operation with oil-free air is permissible.

Specification	Unit	82P50-1800
Max. Clamping Force @ 5 bar	[lbf] N	[135] 600
Max. Operating Pressure	[psi] bar	[87] 6
Actuation Time: Open	sec	0.4
Close	sec	0.4
Air Consumption per Double Stroke @ 6 bar [87 psi]	[in <sup>3</sup> ] liter	[42.72] 0,7
Weight	[lb] kg	[5.73] 2,6

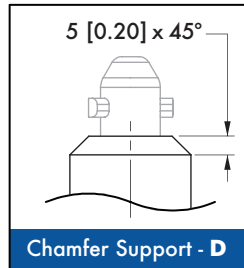
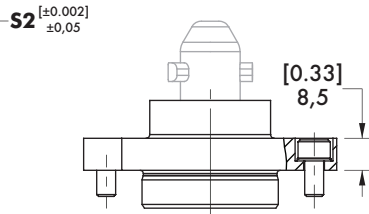
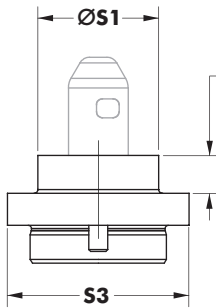
# 82P50-1800 CENTERING PIN SUPPORTS

Pneumatic Centering Pin Clamps | Dimension

## A Standard Support/ D Chamfered Support



for Pin Diameter - 04

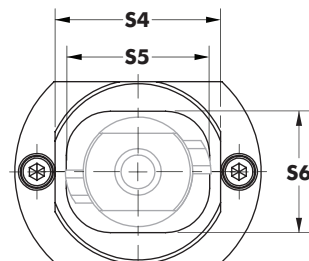
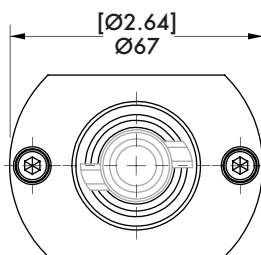


Chamfer Support Option D available for Pin Diameter 01 only.

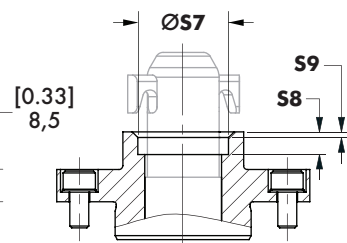
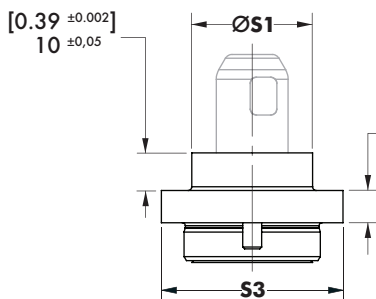


Pin Diameter	S1	S2 - Support Height			S3	S4
		0	1	2		
01						
02	32 [1.26]	10 [0.39]	--	--	48 [1.89]	--
03		--	--	100 [3.94]		
04	48 [1.89]	10 [0.39]	--	--	49 [1.93]	45 [1.77]
05	32 [1.26]		--	--	48 [1.89]	--

## B Drop Down Support



for Pin Diameter - 04, 06

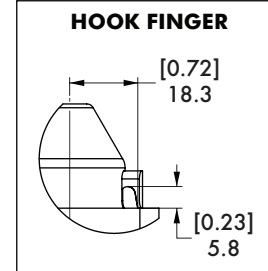
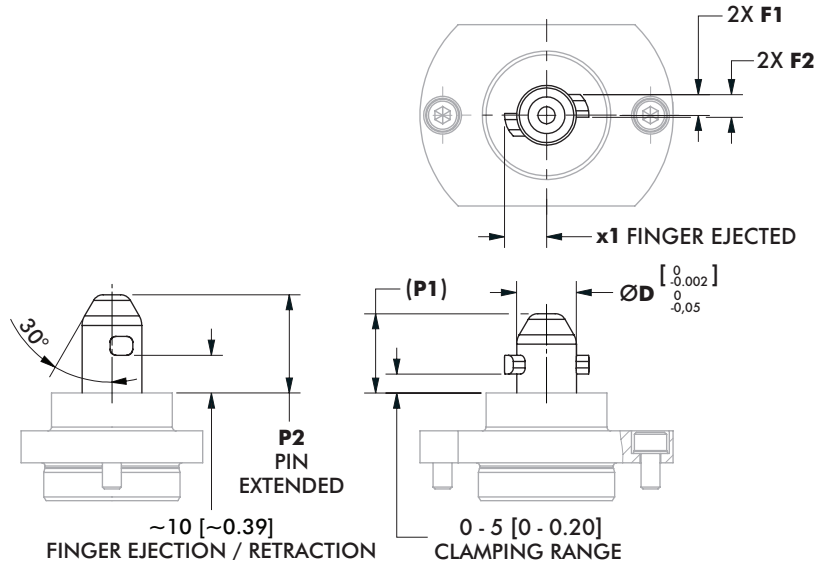


Pin Diameter	S1	S3	S4	S5	S6	S7	S8	S9
02	32 [1.26]	48 [1.89]	--	--	--	24 [0.94]	1,5 [0.06]	6 [0.24]
04	48 [1.89]	49 [1.93]	45 [1.77]	--	--	33,5 [1.32]	x 45°	
06				39 [1.54]	33 [1.30]	--	--	8 [0.31]

# 82P50-1800 CENTERING PINS

## Pneumatic Centering Pin Clamps | Dimension

### 0 Standard Pin

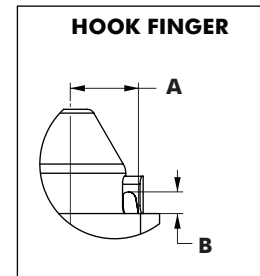
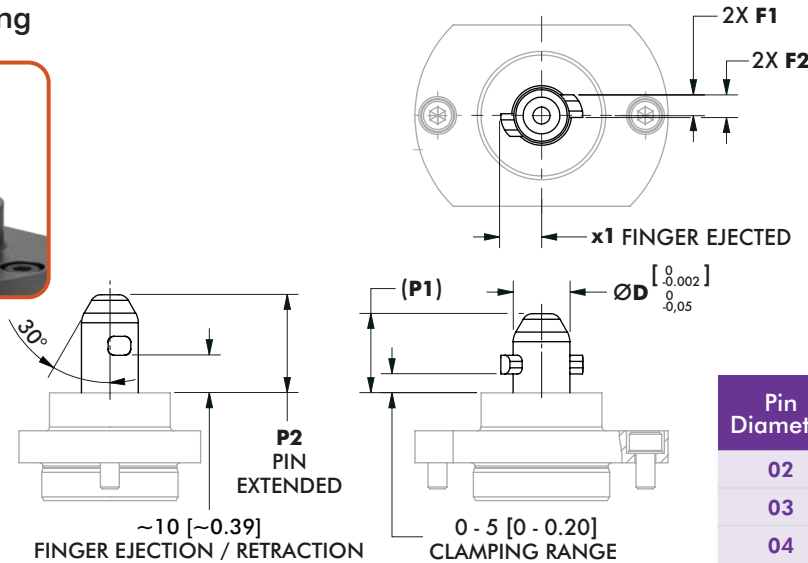


Pin Diameter	Support Shape
04	A, B

Pin Diameter	Support Shape	ØD	P1*	P2	F1	F2	x1
01	A, D	15,8 [0.62]			5,5 [0.22]	6 [0.24]	11,1 [0.44]
02	A	19,8 [0.78]	21 [0.83]	26 [1.02]	6,5 [0.26]	7 [0.28]	14,7 [0.58]
03	A	20,8 [0.82]					15,2 [0.60]
04	A, B	29,8 [1.17]	33 [1.30]	38 [1.50]	8,5 [0.33]	9 [0.35]	19,7 [0.78]
05	A	15,5 [0.61]	21 [0.83]	26 [1.02]	5,5 [0.22]	6 [0.24]	11,1 [0.44]

\*retracted position at the start of clamping range (5 [0.20])

### 1 Pin Clipping



Pin Diameter	Support Shape	A	B
02	B	13,5 [0.53]	
03	A	13,6 [0.54]	6 [0.24]
04	A	18,3 [0.72]	5,8 [0.23]

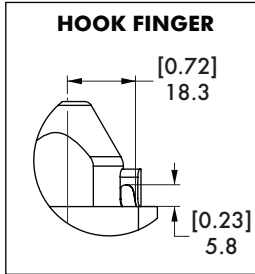
Pin Diameter	Support Shape	ØD	P1*	P2	F1	F2	x1
01	A, D	15 [0.59]			5,5 [0.22]	6 [0.24]	10,8 [0.43]
02	B	19 [0.75]	21 [0.83]	26 [1.02]	6,5 [0.26]	7 [0.28]	14,7 [0.58]
03	A	20 [0.79]					15,2 [0.60]
04	A	29 [1.14]	33 [1.30]	38 [1.50]	8,5 [0.33]	9 [0.35]	19,7 [0.78]

\*retracted position at the start of clamping range (5 [0.20])

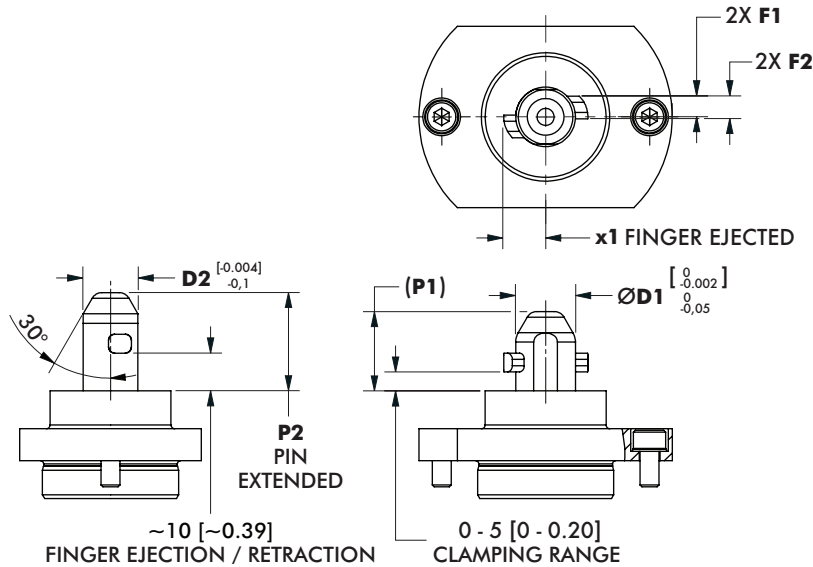
# 82P50-1800 CENTERING PINS

Pneumatic Centering Pin Clamps | Dimension

## 3 Pin Release on Flat Parallel of Finger



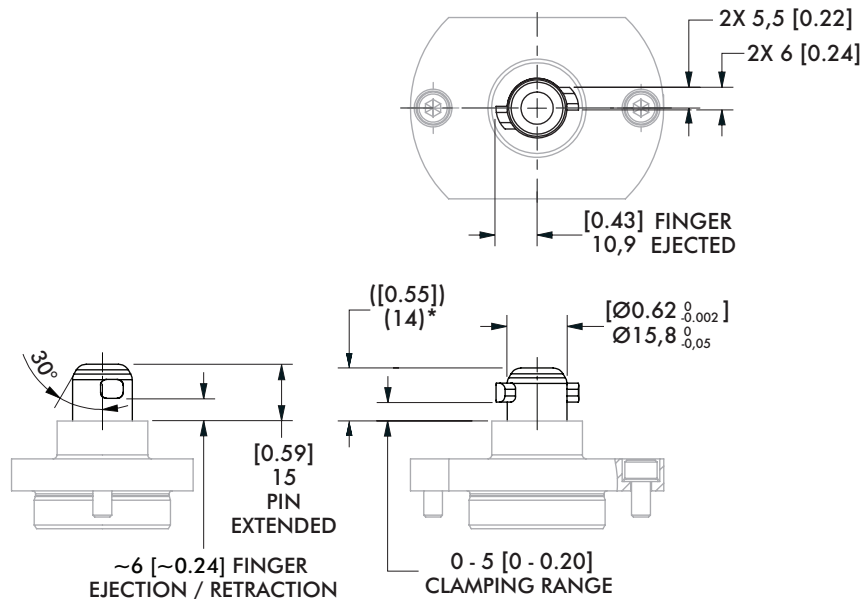
Pin Diameter	Support Shape
06	B



Pin Diameter	Support Shape	ØD1	D2	P1*	P2	F1	F2	x1
01	A, D	15,8 [0.62]	14,5 [0.57]	21 [0.83]	26 [1.02]	5,5 [0.22]	6 [0.24]	11,1 [0.44]
04	A	29,8 [1.17]	21 [0.83]	33 [1.30]	38 [1.50]	8,5 [0.33]	9 [0.35]	19,7 [0.78]
06	B							

\*retracted position at the start of clamping range (5 [0.20])

## 4 Door Case



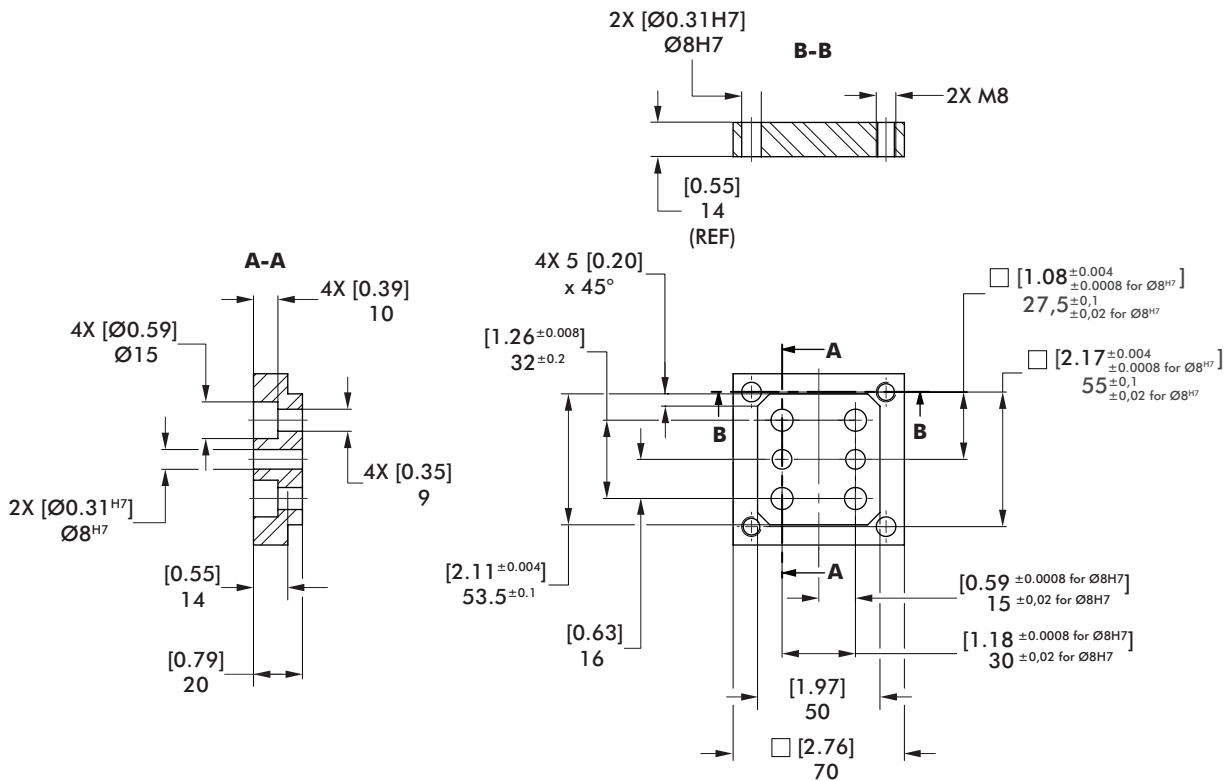
Pin Diameter	Support Shape
01	A

\*retracted position at the start of clamping range (5 [0.20])

# 82P50-1800

Pneumatic Centering Pin Clamp | Tolerance Compensation | Dimensions and How To Order

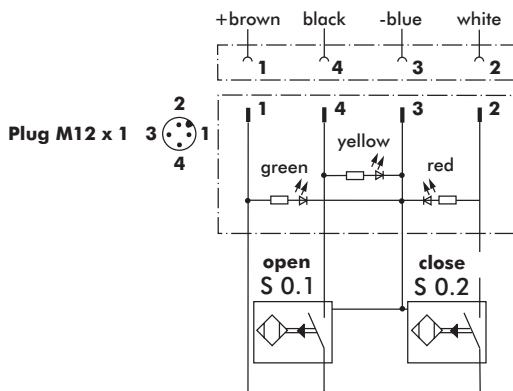
## CNOMO Adapter



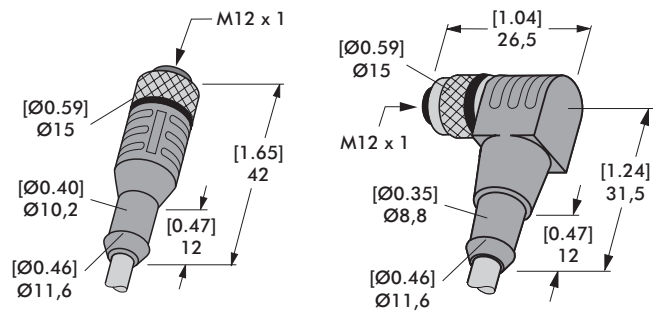
Accessory	Order no.
CNOMO Adapter	8MA-538-1

## Inductive Sensor Wiring Diagram

Sensing system immune to interference from AC / DC arc welding.



## Sensor Cable Accessories

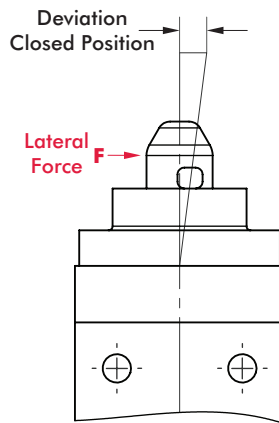
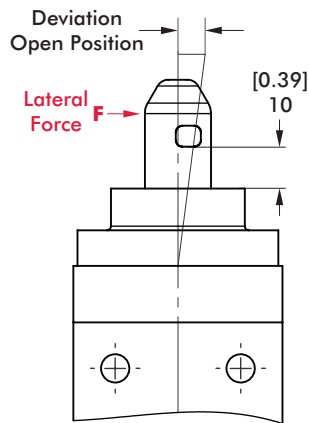
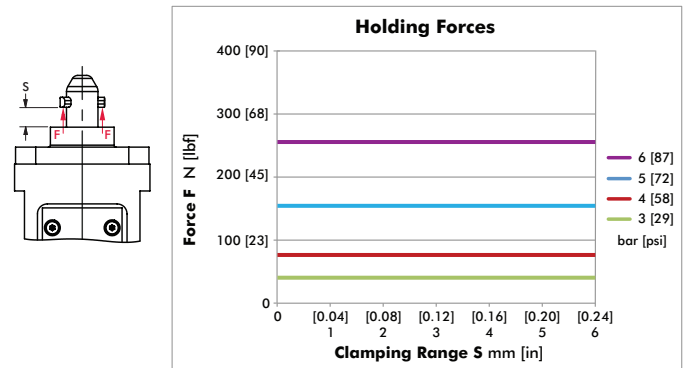
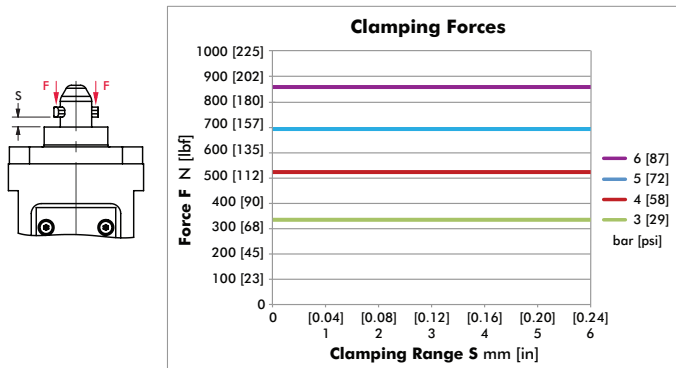


**Straight Cable**  
8EL-002-1

**Angular Cable**  
8EL-003-1

Sensor Cables (1 connector & 5m cable)	Order no.
M12x1 connector, straight, 5-pin	8EL-002-1
M12x1 connector, 90° angular, 4-pin	8EL-003-1





### Max Deviation for Centering Pin

Deviation is at the maximum for support height 10 mm [0.39 in].  
Higher supports have an increased guiding length.

Model no.	Position	Lateral Force F N [lbf]	Deviation $\pm$ mm [in]
82P50-1800	Open	100 [23]	0,032 [0.0013]
	Closed		0,023 [0.0009]

# VV85G-150

## Precision Guide | Ordering and Technical Information

**VV85G-150**   **40**   **L8**

Stroke	Description
20	20 mm Stroke
40	40 mm Stroke

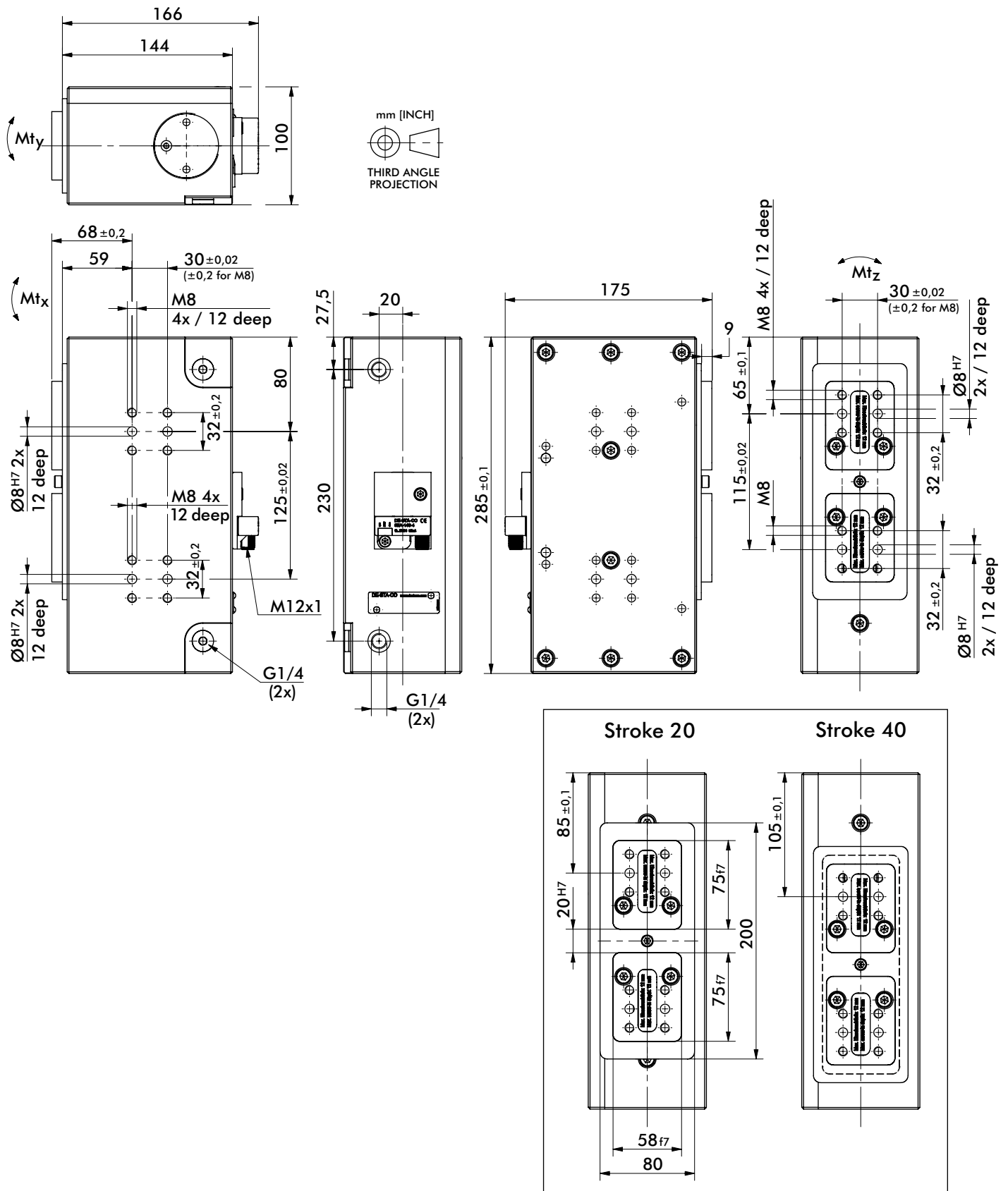
Sensor	Description
00	Without Sensing System
L8	PNP Sensor with In-line M12x1 Connector (8EA-146-4-B)
N8	NPN Sensor with In-line M12x1 Connector (8EA-154-4-B)
L9	PNP Sensor with 90° M12x1 Connector (8EA-147-4-B)
N9	NPN Sensor with 90° M12x1 Connector (8EA-155-4-B)
K8	PNP Sensor with M12x1 Cable Connector (8EA-158-4-B)
K9	NPN Sensor with M12x1 Cable Connector (8EA-167-4-B)



Model	Stroke mm [in]	Max. Load Nm [ft-lb] ±0,2 mm [0.008 in.]			Lifting Force N [lbf]	Holding Force N [lbf]	Weight Kg [lbs]	Air Consumption per double stroke at 5 bar [72 psi] dm³ [in³]
		Mtx	Mty	Mtz				
VV85G-15020**	20 [0.79]	[74]	[74]	[37]	500 [112]	[899] 4000	[29.1] 13,2	0,7 [42.7]
VV85G-15040**	40 [1.57]	100	100	50				1,1 [67.1]

# VV85G-150

## Precision Guide | Dimensions

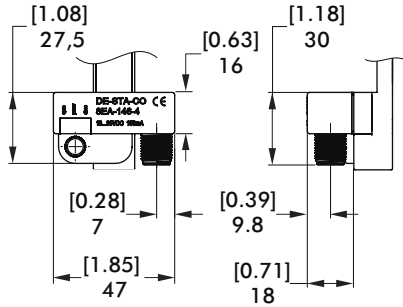


Operation with oil-free air is permissible

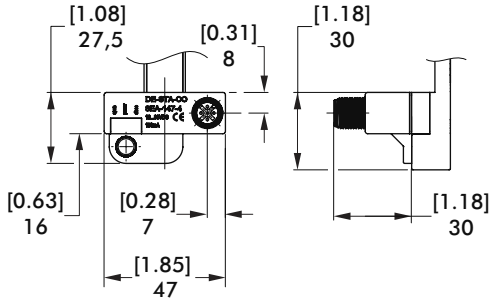
# VV85G-150

## Precision Guide | Dimensions and Technical Specifications

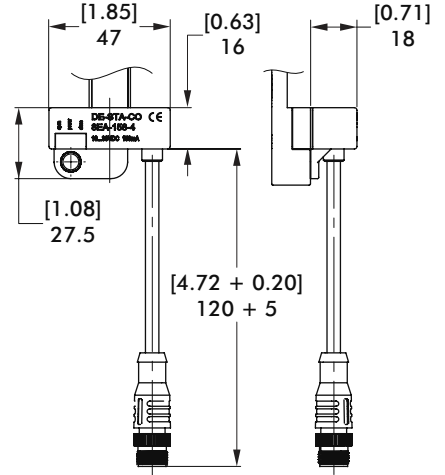
### L8, N8 Inductive Sensing System



### L9, N9 Inductive Sensing System with 90° Connector

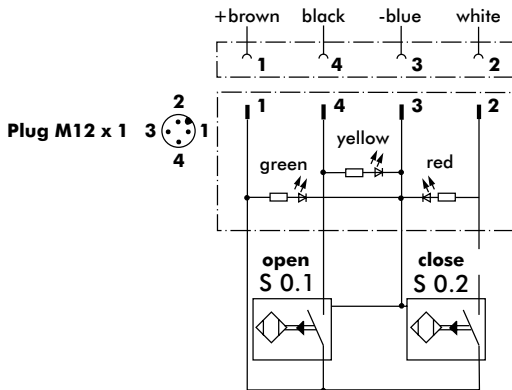


### K8, K9 Inductive Sensing System with Pigtail Connector



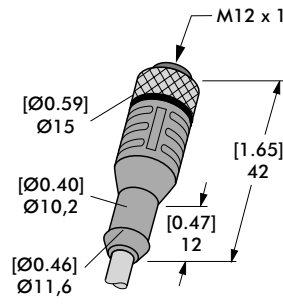
### Inductive Sensor Wiring Diagram

Sensing system immune to interference from AC / DC arc welding.

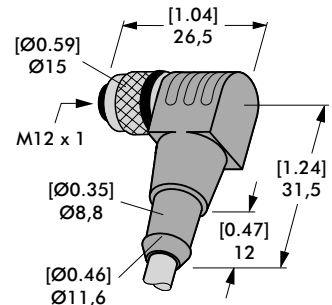


### Sensor Cable Accessories

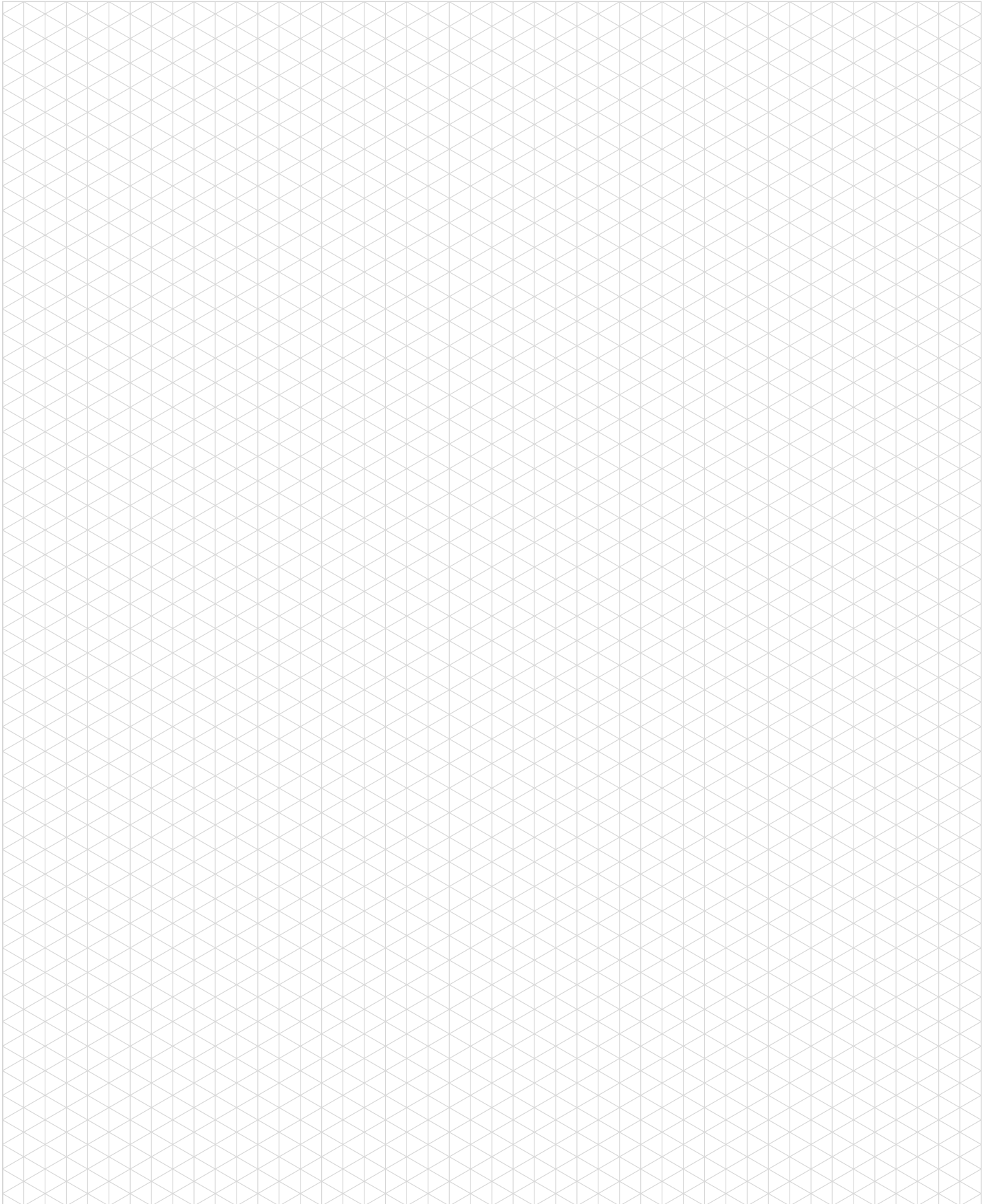
Sensor Cables (1 connector & 5m cable)	Order no.
M12x1 connector, straight, 5-pin	<b>8EL-002-1</b>
M12x1 connector, 90° angular, 4-pin	<b>8EL-003-1</b>



**Straight Cable**  
8EL-002-1



**Angular Cable**  
8EL-003-1

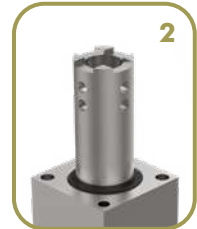


# 86P30-5

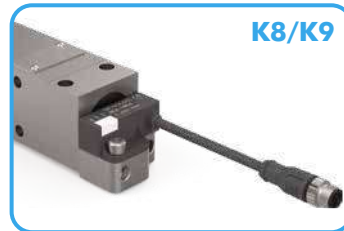
## Pneumatic Pin Package | Single Shaft | Ordering and Technical Information

<b>86P30-5</b>	<b>02</b>	<b>L8</b>	<b>00</b>	<b>4</b>
<b>Accessories</b>				
<b>00</b>				
<b>Description</b>	<b>Stroke</b>		<b>Description</b>	
No Accessories	<b>2</b>	20 mm Stroke		
	<b>4</b>	40 mm Stroke		

Piston Rod	Description
<b>02</b>	Ø16 mm M6 Threaded Inside Hole, Cross Groove
<b>05</b>	Ø10 mm M8 Threaded Inside Hole, Cross Groove



Sensor	Description
<b>L8</b>	PNP Sensor with In-line M12x1 Connector (8EA-146-4-B)
<b>N8</b>	NPN Sensor with In-line M12x1 Connector (8EA-154-4-B)
<b>L9</b>	PNP Sensor with 90° M12x1 Connector (8EA-147-4-B)
<b>N9</b>	NPN Sensor with 90° M12x1 Connector (8EA-155-4-B)
<b>K8</b>	PNP Sensor with M12x1 Cable Connector (8EA-158-4-B)
<b>K9</b>	NPN Sensor with M12x1 Cable Connector (8EA-167-4-B)



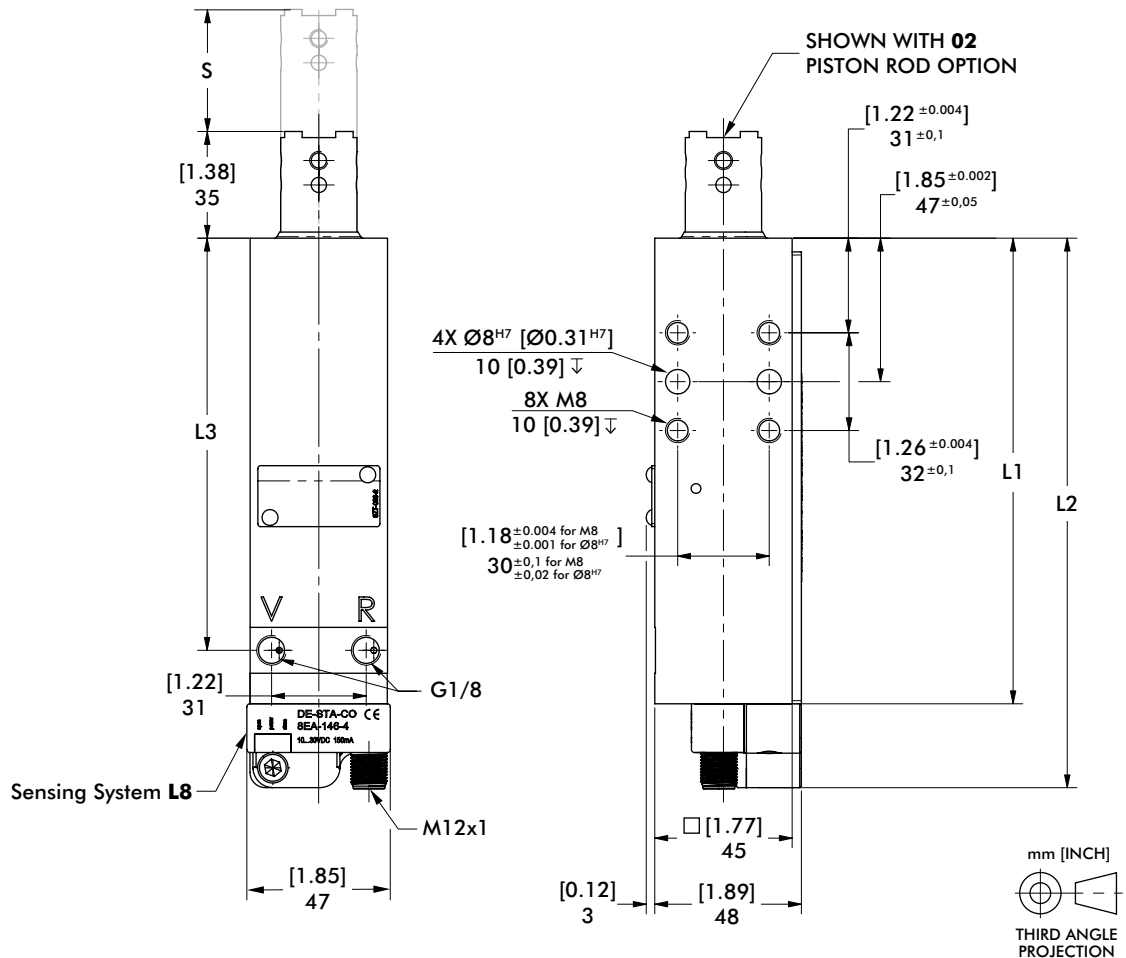
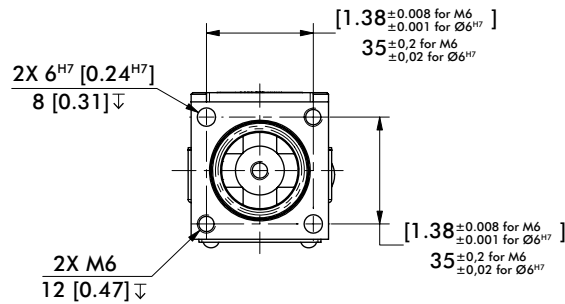
**Sensor Cables** Order separately

Order No.	Description
8EL-002-1	M12x1, Straight, 5-pin Connector with 5 m [16 ft.] Cable
8EL-003-1	M12x1, Angular, 4-pin Connector with 5 m [16 ft.] Cable

**86P30-5**

<b>Stroke Option:</b>	<b>2, 4</b>
<b>Max Pushing Force at 5 bar [72 psi]:</b>	340 N [76 lbf]
<b>Max Retracting Force at 5 bar [72 psi]:</b>	250 N [56 lbf]

## Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications



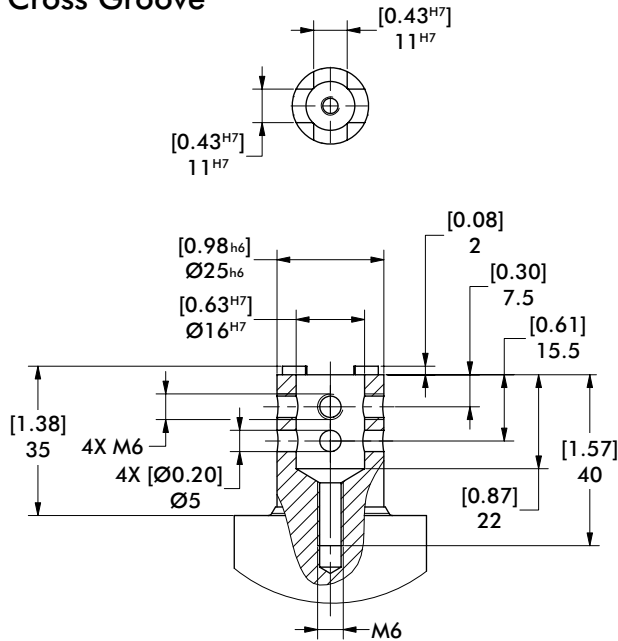
Medium: Operation with oil free air permissible

Base Model	Stroke Option	S Stroke mm [in]	L1 mm [in]	L2 mm [in]	L3 mm [in]	Pushing force at 5 bar N [lbs]	Retraction force at 5 bar N [lbs]	Max. operating pressure bar [psi]	Piston Ø mm [in]	Weight Kg [lbs]	Air consumption per double stroke at 5 bar dm <sup>3</sup> [ft <sup>3</sup> ]
86P30-5	2	20 [0.79]	112,5 [4.43]	140 [5.51]	95 [3.74]	340 [76]	250 [56]	6 [87]	30 [1.18]	0,8 [1.76]	0,32 [0.011]
	4	40 [1.57]	152,5 [6.00]	180 [7.09]	135 [5.30]	340 [76]	250 [56]	6 [87]	30 [1.18]	1 [2.20]	0,45 [0.015]

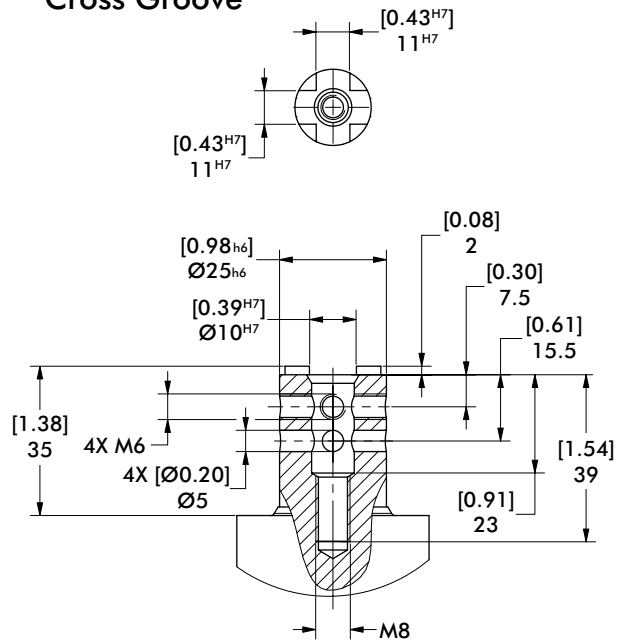
# 86P30-5 PISTON RODS

Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

## 02 Ø16 mm M6 Threaded Inside Hole, Cross Groove

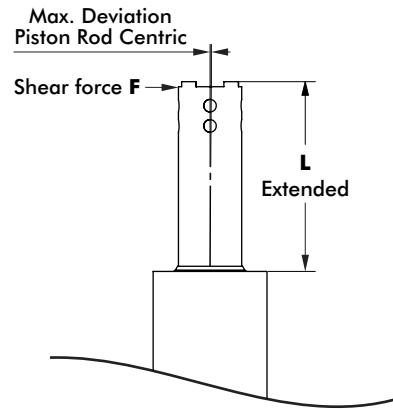


## 05 Ø10 mm M8 Threaded Inside Hole, Cross Groove

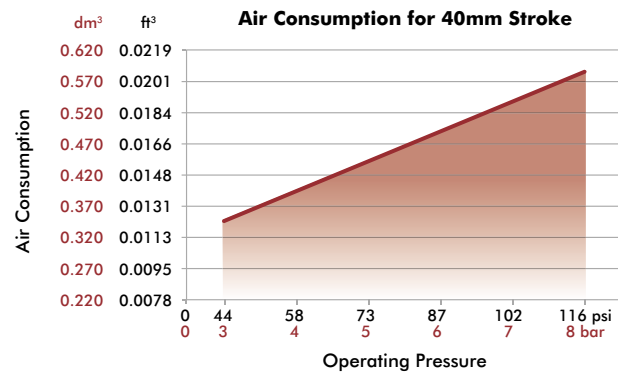
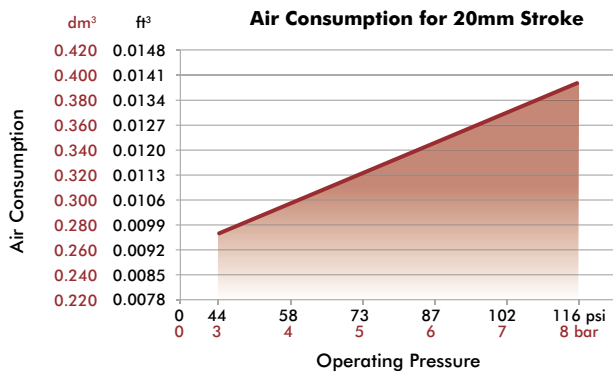


## Max Deflection for Centering Pin

Model no.	Shear force N [lbs]	L mm [in]	Stroke mm [in]	Deflection ± mm [in]
86P30-50***004	200 [45]	75 [2.95]	40 [1.58]	0,12 [0.0047]
	150 [34]			0,10 [0.0039]
	100 [22]			0,08 [0.0031]
	75 [17]			0,06 [0.0023]
86P30-50***002	200 [45]	55 [2.17]	20 [0.79]	0,07 [0.0027]
	150 [34]			0,06 [0.0023]
	100 [22]			0,06 [0.0023]
	75 [17]			0,05 [0.0019]



## Air Consumption

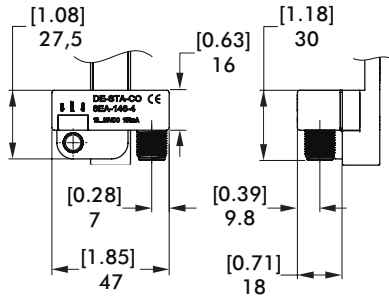




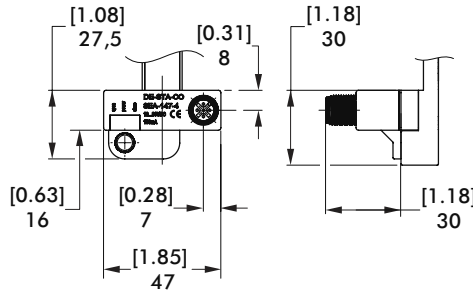
# 86P30-5 SENSORS

Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

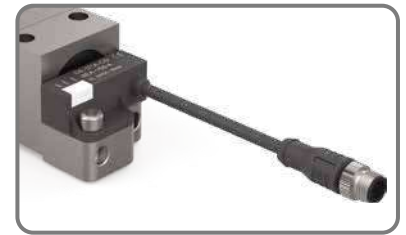
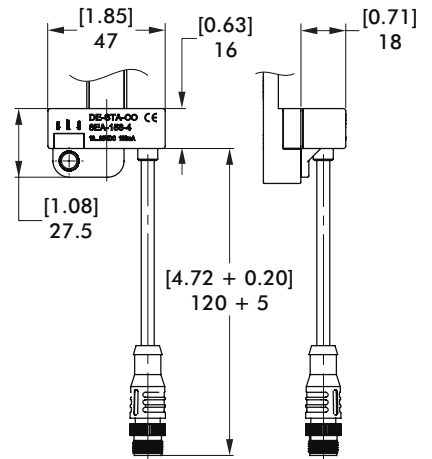
## L8, N8 Inductive Sensing System



## L9, N9 Inductive Sensing System with 90° Connector

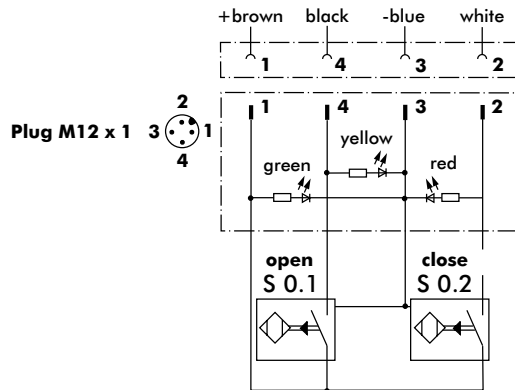


## K8, K9 Inductive Sensing System with Pigtail Connector



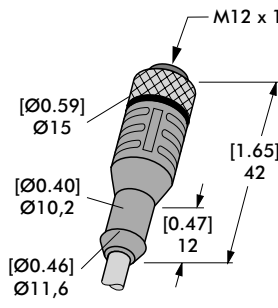
## Inductive Sensor Wiring Diagram

Sensing system immune to interference from AC / DC arc welding.

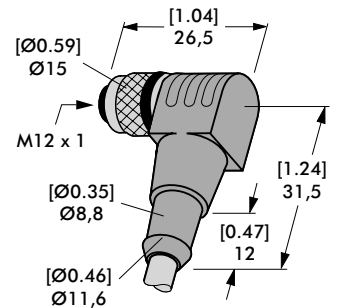


## Sensor Cable Accessories

Sensor Cables (1 connector & 5m cable)	Order no.
M12x1 connector, straight, 5-pin	<b>8EL-002-1</b>
M12x1 connector, 90° angular, 4-pin	<b>8EL-003-1</b>



**Straight Cable**  
**8EL-002-1**



**Angular Cable**  
**8EL-003-1**

# 86P40/86P60

## Pneumatic Pin Package | Single Shaft | Ordering and Technical Information

**86P40**

**-2**

**02**

**D8**

**G1**

**A**

**-K**

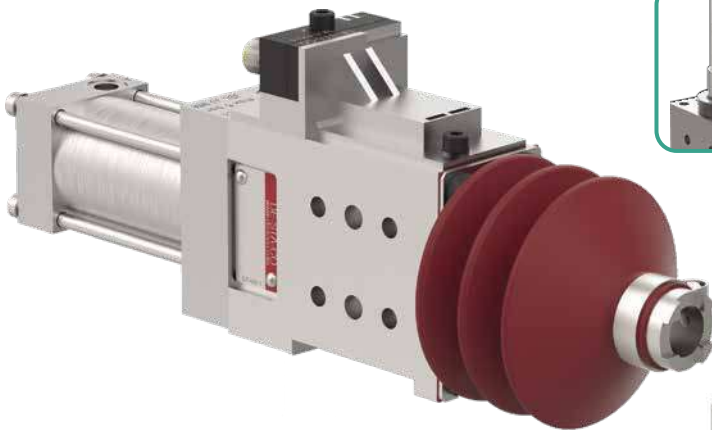
Ceramic Option  
for Piston Rod  
**K**

Base Model	Description
<b>86P40</b>	40 mm Cylinder (G1/8 Port)
<b>86P60</b>	63 mm Cylinder (G1/4 Port)

Hand Lever	Description
<b>-2</b>	No Handle
<b>H2</b>	Handle for Manual Control for 86P60 only (excludes <b>F, 8</b> stroke option)



Piston Rod	Description
<b>01</b>	Ø16 mm Inside Hole (Standard)
<b>02</b>	Ø16 mm M6 Threaded Inside Hole, Cross Groove
<b>04</b>	NAAMS Standard
<b>A4</b>	NAAMS Standard Rotated 180°
<b>B4</b>	NAAMS Standard Rotated 90°
<b>C4</b>	NAAMS Standard Rotated 270°
<b>05</b>	Ø10 mm Inside Hole, Cross Groove
<b>07</b>	Ø16 mm Inside Hole, NAAMS
<b>09</b>	Ø20 mm Straight Groove
<b>10</b>	Ø12 mm Straight Groove



**86P40**

**86P60**

Stroke Option:

**B, A, 2, 4 C, 6 F, 8**

**B, A, 2, 4 C, 6 F, 8**

Max Pushing Force at 5 bar [72 psi]:

620 N [139 lbf]

1550 N [348 lbf]

Max Retracting Force at 5 bar [72 psi]:

520 N [117 lbf]

1400 N [315 lbf]

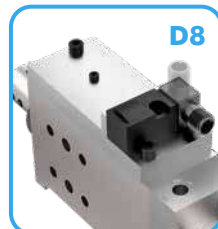
Accessories	Description
<b>00</b>	No Accessories
<b>F1</b>	Bellows for piston rods <b>02, 05, 07, 10</b> in strokes <b>B, A, 2, 4</b> (82ZB-013-3)
<b>R1</b>	Guide Bushing for piston rods <b>01, 02, 05</b> (82ZB-192-1)



Stroke	Description
	<b>Anti-Twist Device/Low Accuracy</b>
<b>B</b>	20 mm Stroke (8MF-071-1)
<b>A</b>	40 mm Stroke (8CE-231-1)
<b>C</b>	60 mm Stroke (8CE-231-1)
<b>F</b>	80 mm Stroke (8CE-231-1)
	<b>Anti-Twist Device</b>
<b>2</b>	20 mm Stroke (86P0-20000002)
<b>4</b>	40 mm Stroke (86P0-20000004)
<b>6</b>	60 mm Stroke (86P0-20000006)
<b>8</b>	80 mm Stroke (86P0-20000008)



Sensor	Description
<b>L4</b>	Cover Plate for <b>B, A, 2, 4</b> (86P0-200L4)
<b>L6</b>	Cover Plate for <b>C, 6</b> (86P0-200L6)
<b>L8</b>	Cover Plate for <b>F, 8</b> (86P0-200L8)
<b>D8</b>	Inductive Sensing System with 90° M12x1 Swivel Connector for <b>B, A, 2, 4</b> (86P0-200D8), for <b>C, 6</b> (86P0-200D8006), for <b>F, 8</b> (86P0-200D8008)

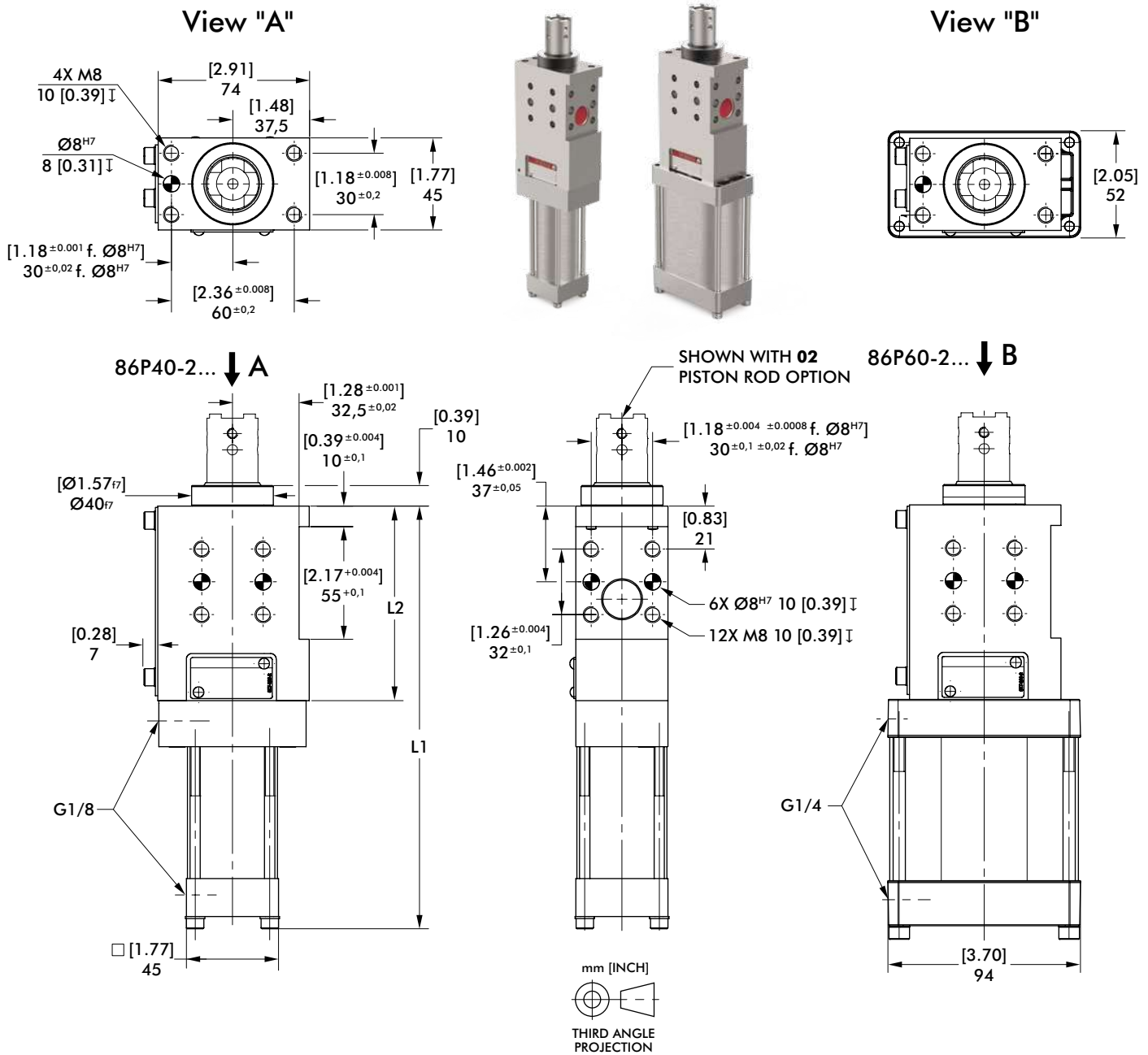


**Sensor Cables** Order separately

Order No.	Description
8EL-002-1	M12x1, Straight, 5-pin Connector with 5 m [16 ft.] Cable
8EL-003-1	M12x1, Angular, 4-pin Connector with 5 m [16 ft.] Cable

# 86P40-2/86P60-2

Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

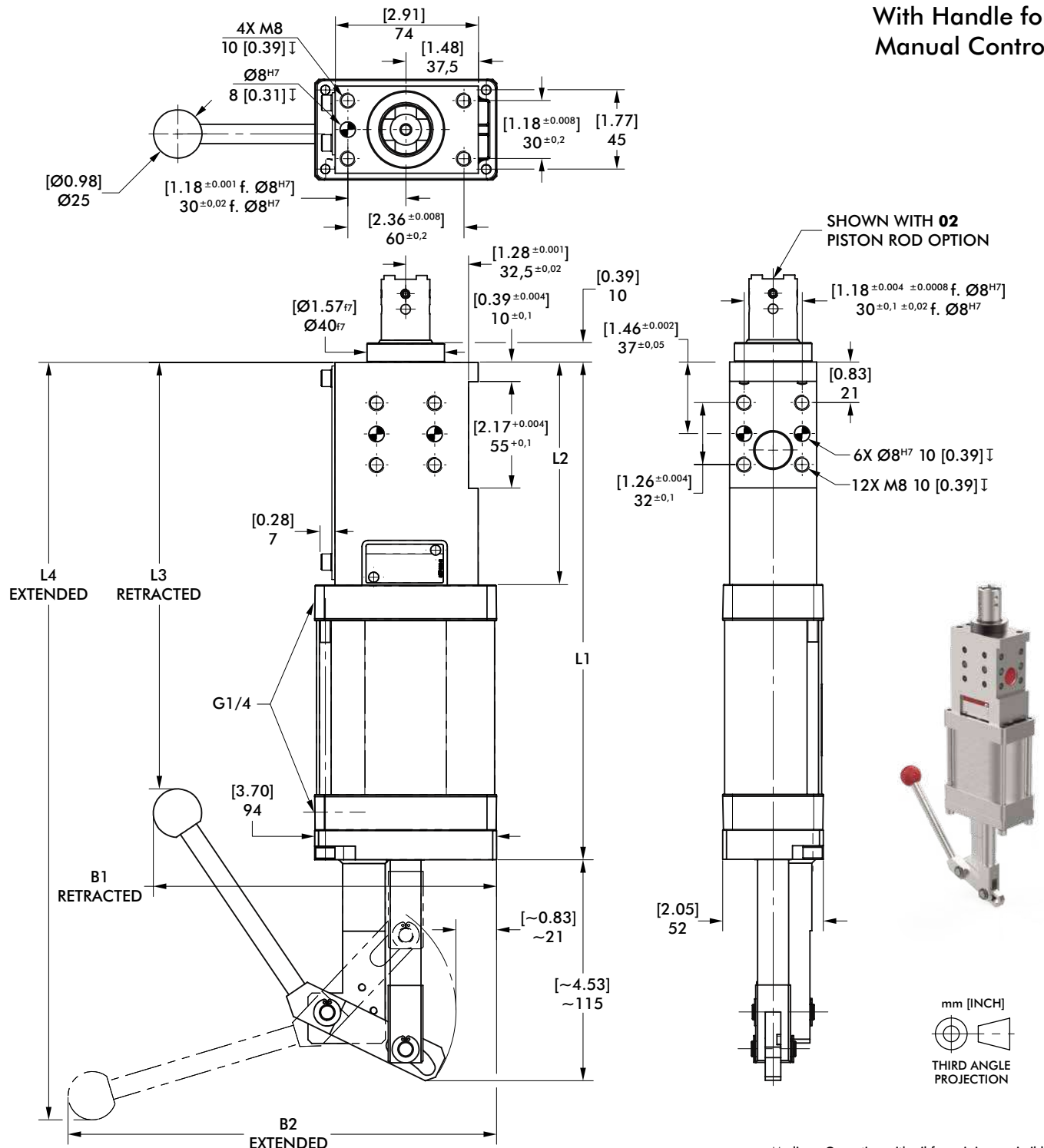


Medium: Operation with oil free air is permissible

Base Model	Stroke Option	Stroke +2 [0.08] mm [in]	L1 mm [in]	L2 mm [in]	Pushing force at 5 bar N [lbs]	Retraction force at 5 bar N [lbs]	Max. operating pressure bar [psi]	Piston Ø mm [in]	Weight Kg [lbs]	Air consumption per double stroke at 5 bar dm <sup>3</sup> [ft <sup>3</sup> ]
86P40	B, 2	20 [0.79]	207 [8.15]	95 [3.74]	620 [139]	520 [117]	6 [87]	40 [1.57]	1,6 [3.52]	0,5 [0.017]
	A, 4	40 [1.57]		0,7 [0.025]						
	C, 6	60 [2.36]		2,0 [4.40]					0,9 [0.032]	
	F, 8	80 [3.15]		2,4 [5.29]					1,0 [0.035]	
86P60	B, 2	20 [0.79]	213 [8.39]	95 [3.74]	1550 [348]	1400 [315]		63 [2.48]	2,0 [4.40]	0,8 [0.028]
	A, 4	40 [1.57]		1,4 [0.049]						
	C, 6	60 [2.36]		2,5 [5.51]					2,0 [0.070]	
	F, 8	80 [3.15]		2,8 [6.17]					2,5 [0.088]	

## Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

With Handle for Manual Control

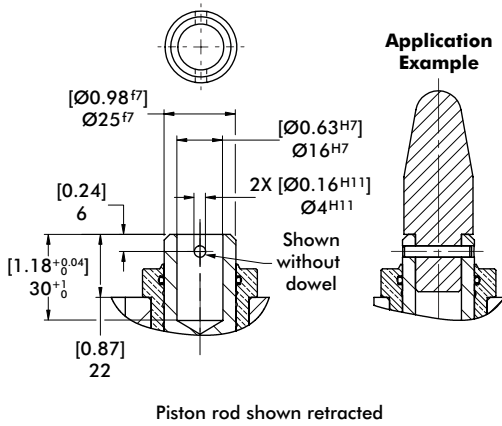


Base Model	Stroke Option	Stroke +2 [0.08] mm [in]	B1 (retracted) mm [in]	B2 (extended) mm [in]	L1 mm [in]	L2 mm [in]	L3 (retracted) mm [in]	L4 (extended) mm [in]	Weight Kg [lbs]
86P60H2	B, 2	20 [0.79]		216 [8.50]	217 [8.54]	95 [3.74]	179 [7.05]	253 [9.96]	2,3 [5.07]
	A, 4	40 [1.57]	177 [6.97]	229 [9.02]	217 [8.54]	95 [3.74]	179 [7.05]	306 [12.05]	2,3 [5.07]
	C, 6	60 [2.36]		223 [8.78]	257 [10.12]	115 [4.53]	220 [8.66]	392 [15.43]	2,6 [5.73]

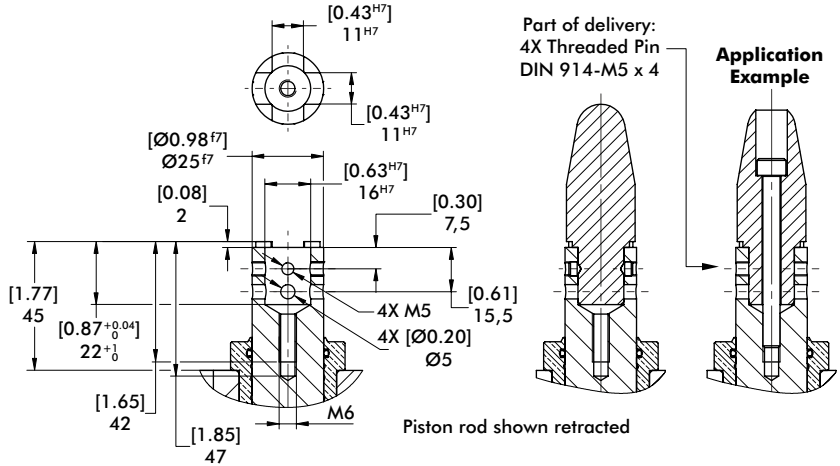
# 86P40/86P60 PISTON RODS

Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

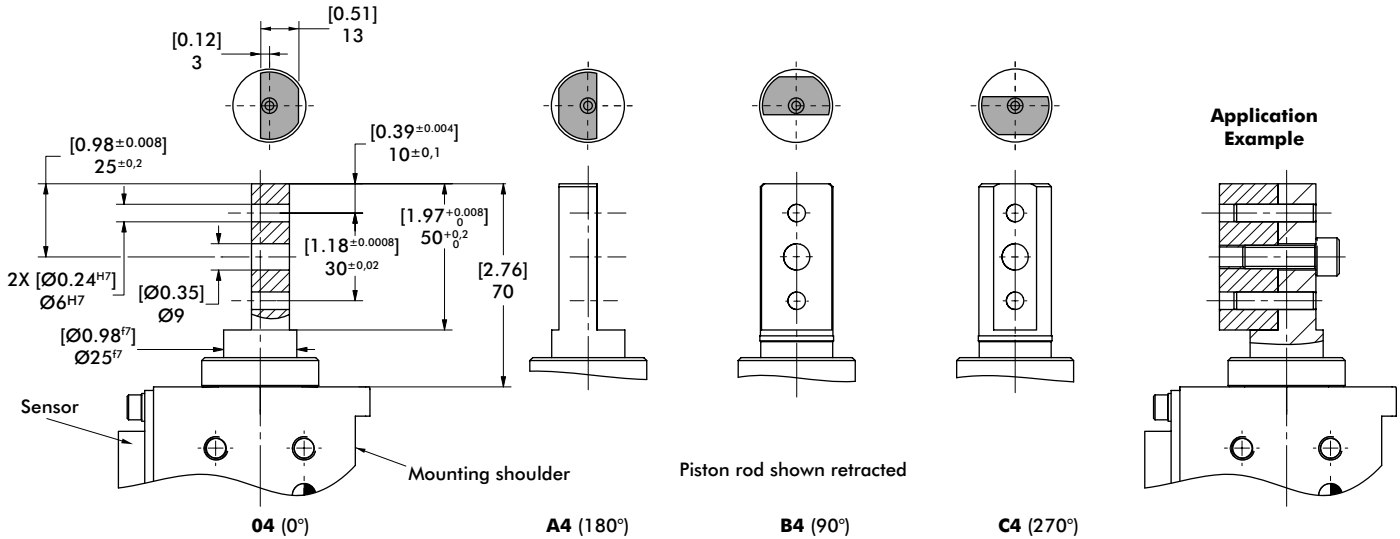
## 01 Ø16 mm Inside Hole



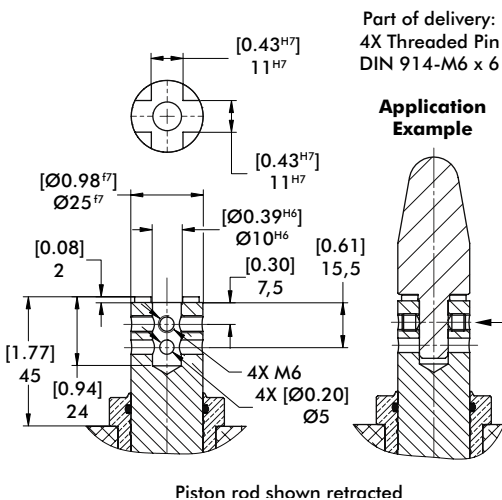
## 02 Ø16 mm M6 Threaded Inside Hole, Cross Groove



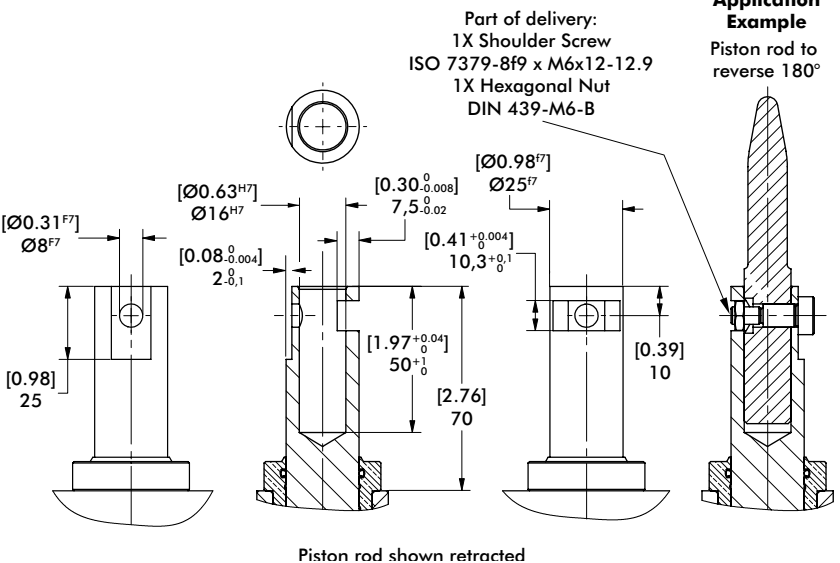
## 04, A4, B4, C4 NAAMS Standard



## 05 Ø10 mm Inside Hole, Cross Groove



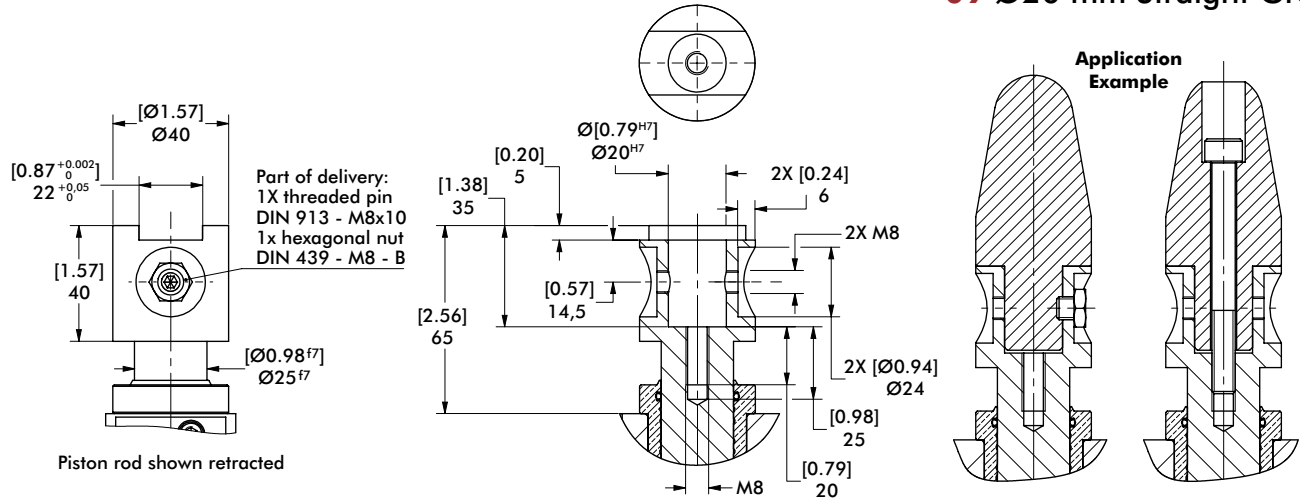
## 07 Ø16 mm Inside Hole, NAAMS



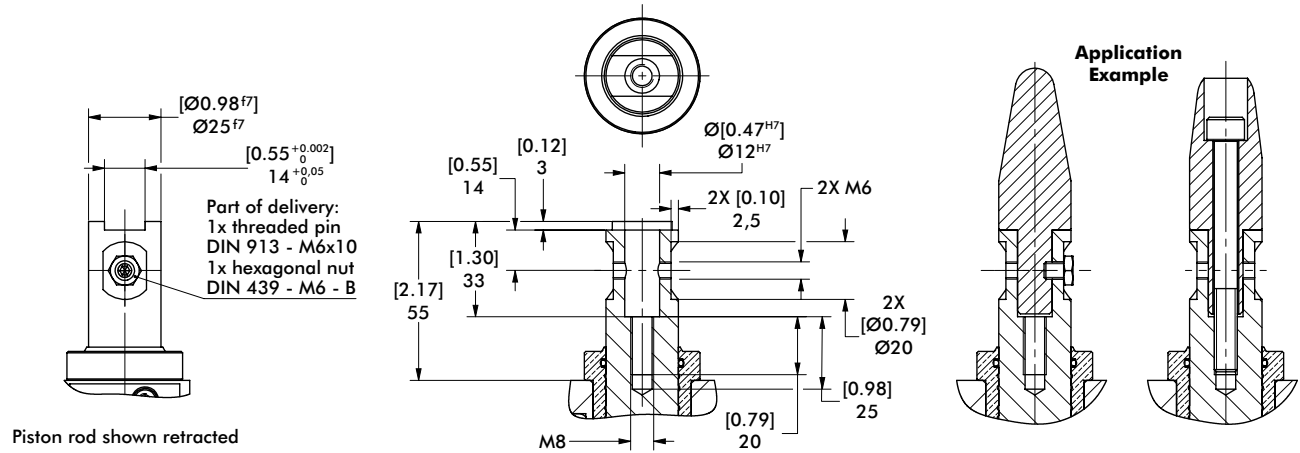
# 86P40/86P60 PISTON RODS

Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

## 09 Ø20 mm Straight Groove



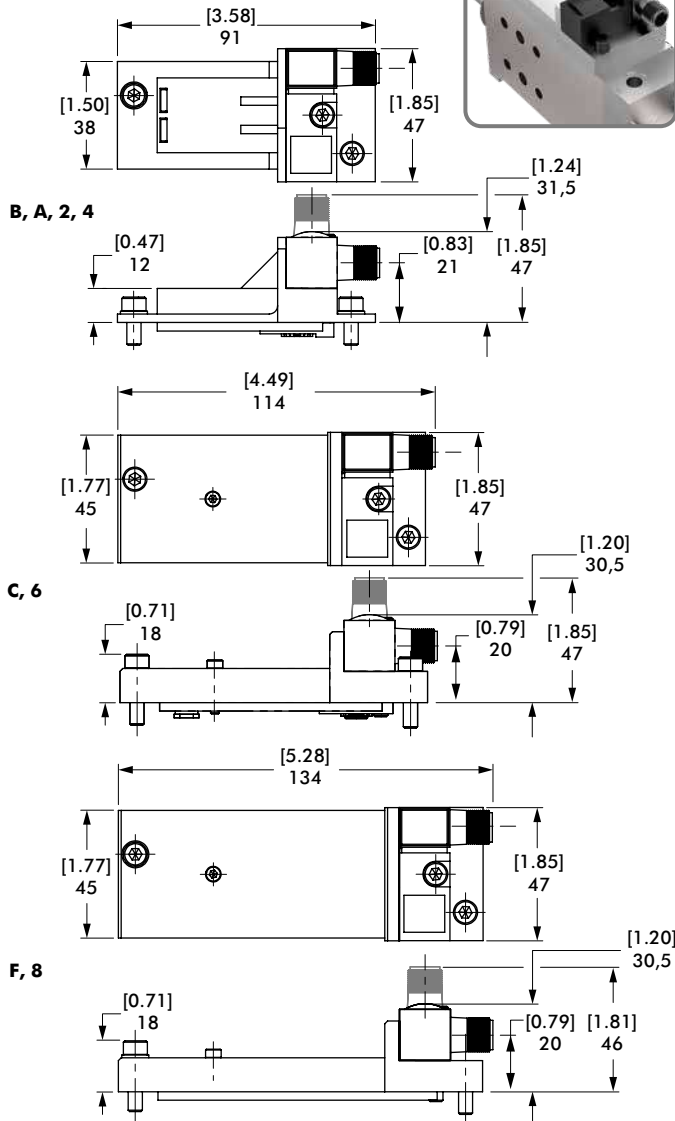
## 10 Ø12 mm Straight Groove



# 86P40/86P60 SENSORS

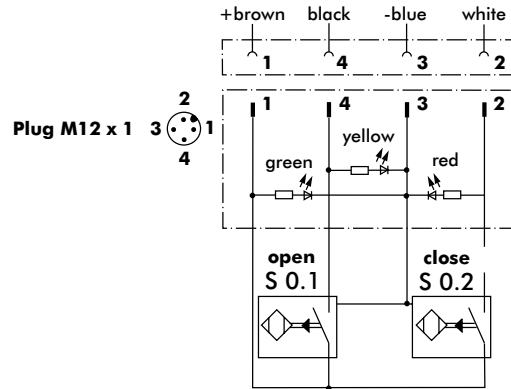
Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

## D8 Inductive Sensing System with 90° Swivel Connector

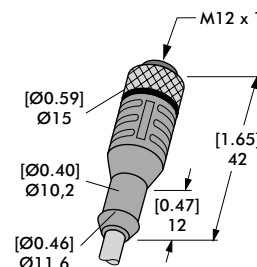


## Inductive Sensor Wiring Diagram

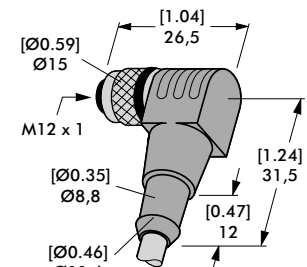
Sensing system immune to interference from AC / DC arc welding.



## Sensor Cable Accessories



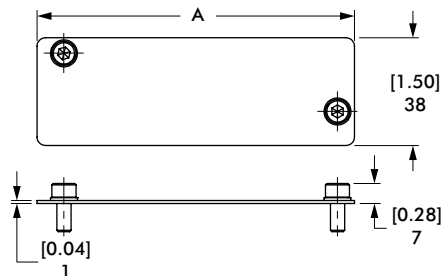
**Straight: 8EL-002-1**



**Angular: 8EL-003-1**

Order no.	Sensor Cables (1 connector & 5m cable)
8EL-002-1	M12x1, Straight, 5-pin Connector with 5 m [16 ft.] Cable
8EL-003-1	M12x1, Angular, 4-pin Connector with 5 m [16 ft.] Cable

## L4, L6, L8 Sensor Cover Plate



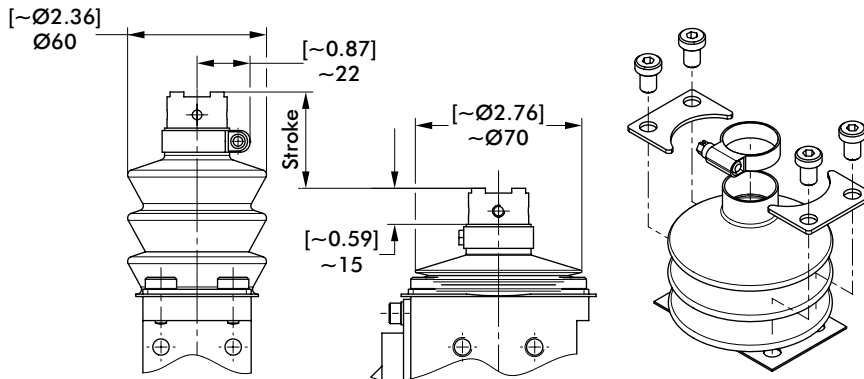
Cover Plate Option	Stroke Option	A mm [in]
L4	B, A, 2, 4	92 [3.62]
L6	C, 6	112 [4.41]
L8	F, 8	132 [5.20]



# 86P40/86P60 ACCESSORIES

Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

## F1 Bellows (Piston Rod Cover)

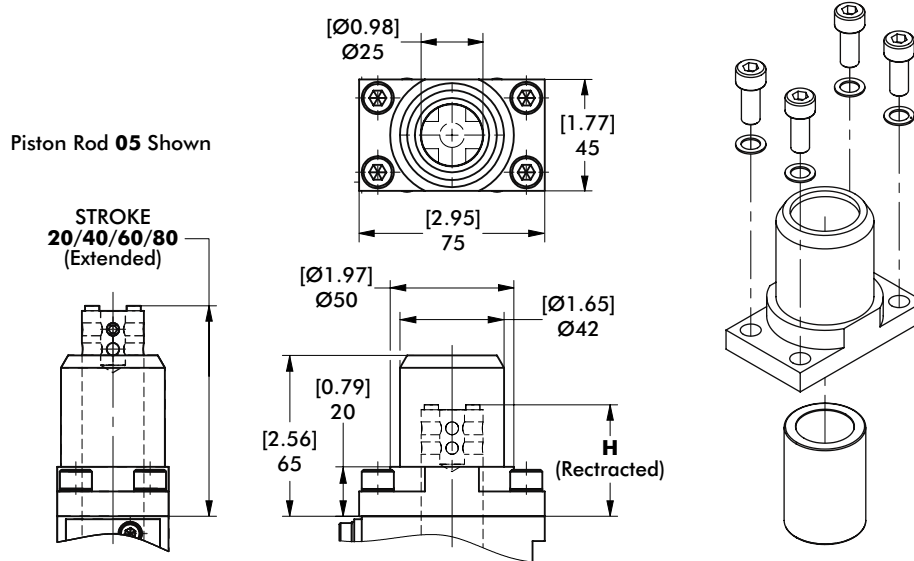


Extended



Retracted

## R1 Guide Bushing

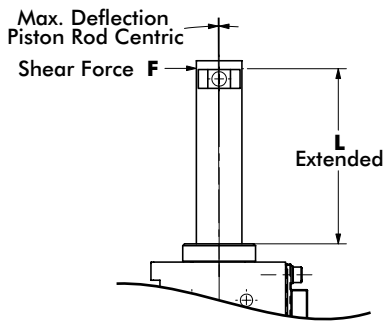


Model No.	Piston Rod Adapter	Stroke				
		H mm [in]	20 mm [in]	40 mm [in]	60 mm [in]	80 mm [in]
86P40-2...	01	22 [0.87]	42 [1.65]	62 [2.44]	82 [3.23]	102 [4.02]
86P60-2...	02	45 [1.77]	65 [2.56]	85 [3.35]	105 [4.13]	125 [4.92]
86P60H2...	05					
56H40-2...						

# 86P40/86P60

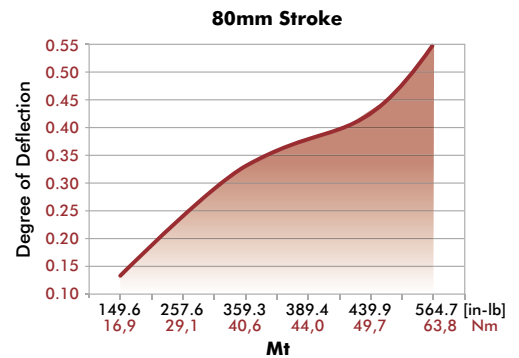
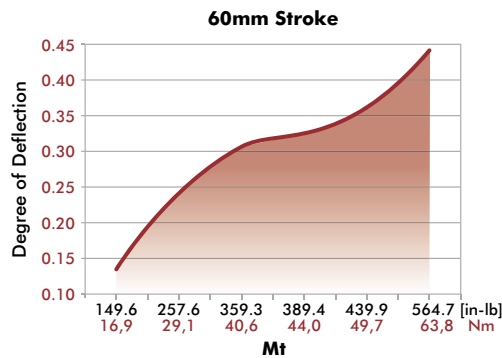
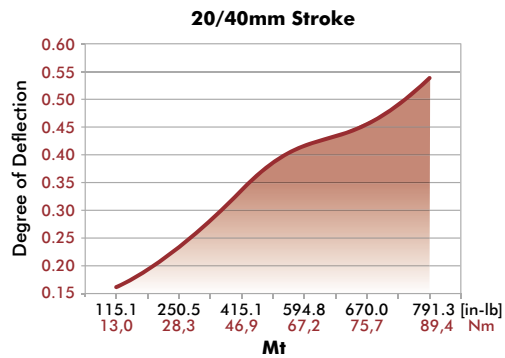
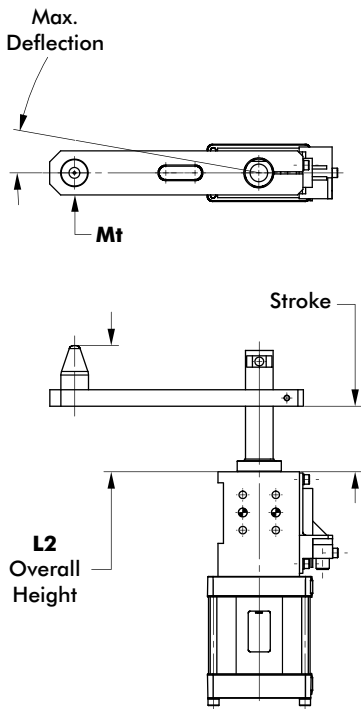
## Pneumatic Pin Package | Single Shaft | Technical Specifications

### Maximum Deflection for Centering Pin

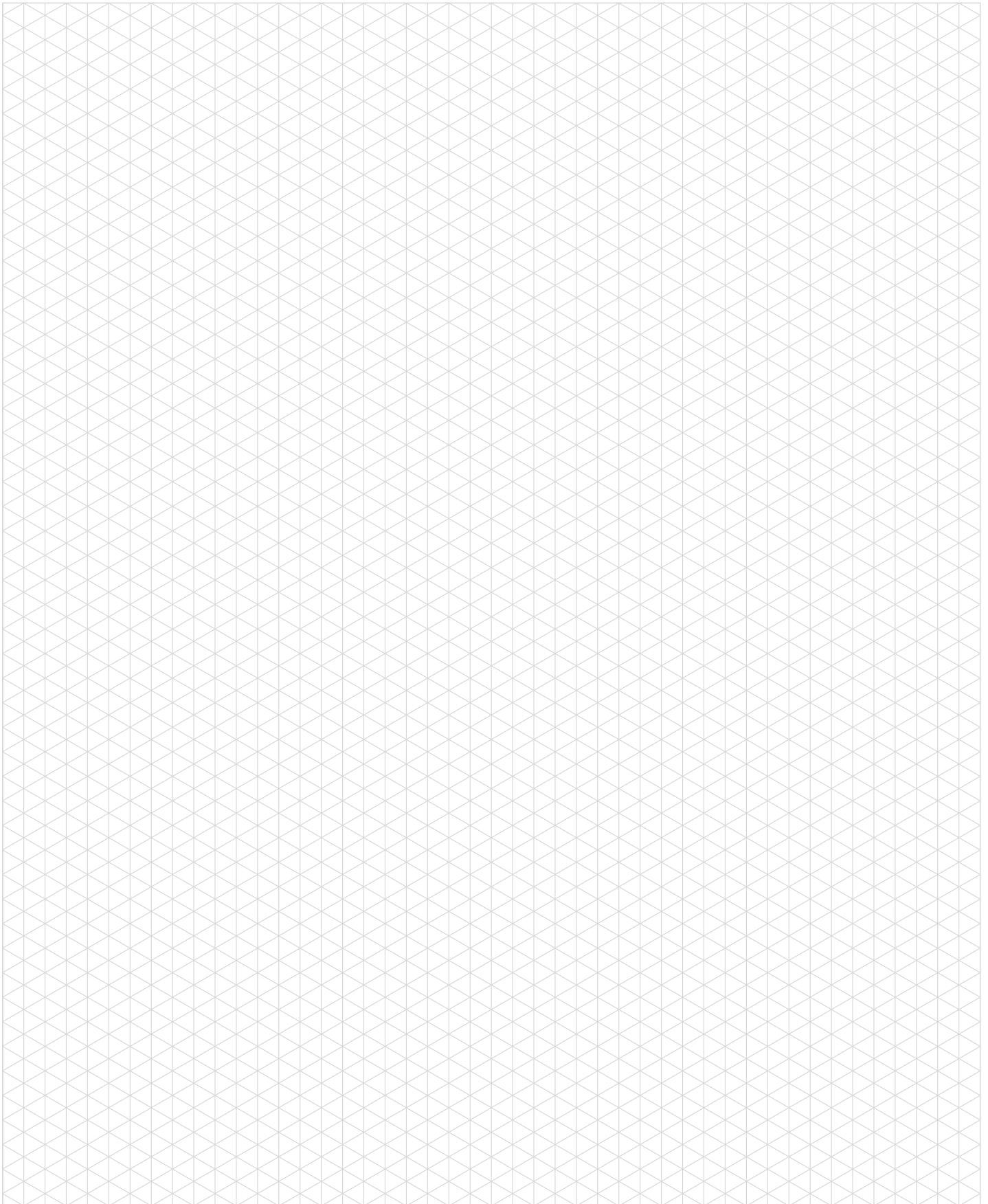


Model no.	Shear force N [lbs]	L mm [in]	Stroke mm [in]	Deflection mm [in]
86P40 / 60-2...B / 2	200 [45]	52 [2.05]	20 [0.79]	0,06 [0.002]
86P40 / 60-2...A / 4		70 [2.76]	40 [1.58]	0,09 [0.004]
86P40 / 60-2...C / 6		90 [3.54]	60 [2.36]	0,12 [0.005]
86P40 / 60-2...F / 8		115 [4.53]	80 [3.15]	0,15 [0.006]

**Caution:** Generally we recommend using an external guide when the transverse force is more than 200 N [45 lbs]. Also independently of the stroke, less transverse forces, when the overall height  $L2 > 120$  mm [4.7 in] (  $L2$  = extended piston rod plus centering pin ).

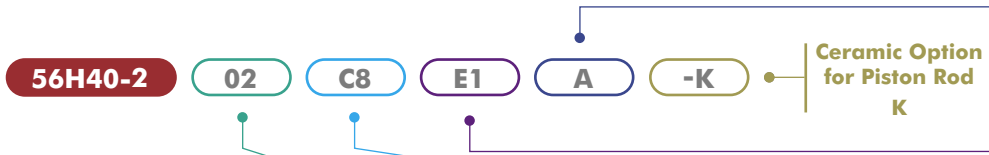


**Caution:** Generally we recommend using an external guide when the transverse force is more than 200 N [45 lbs]. Also independently of the stroke, less transverse forces, when the overall height  $L2 > 120$  mm [4.7 in] (  $L2$  = extended piston rod plus centering pin ).

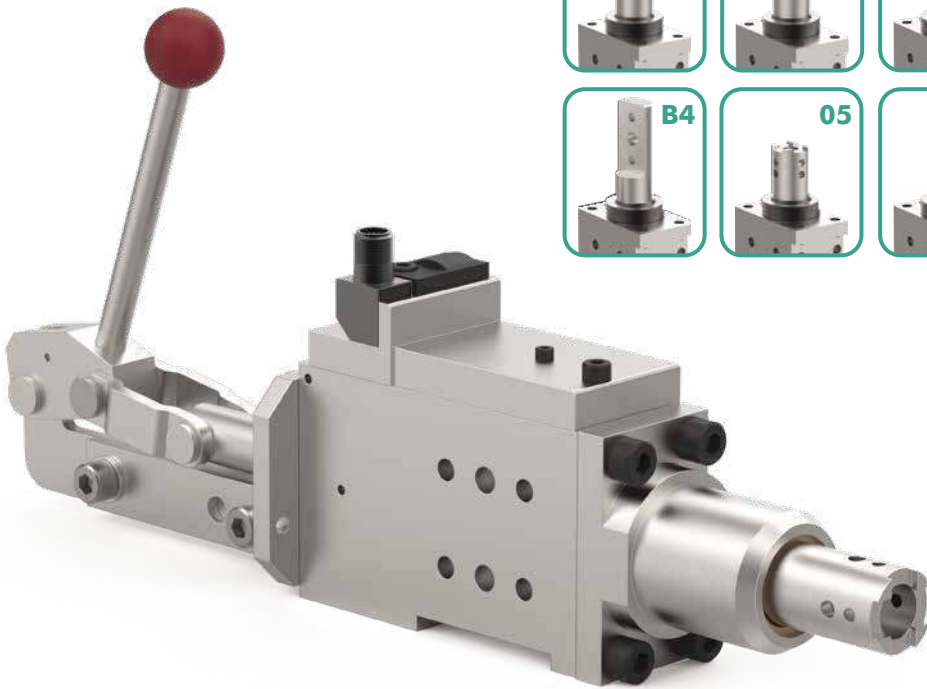


# 56H40-2

Manual Pin Package | Single Shaft | Ordering Information



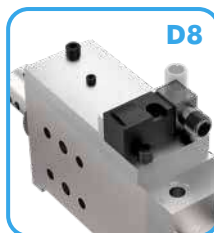
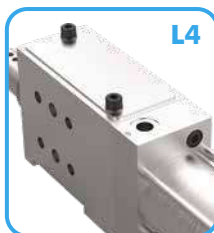
Piston Rod	Description
01	Ø16 mm Inside Hole (Standard)
02	Ø16 mm M6 Threaded Inside Hole, Cross Groove
04	NAAMS Standard
A4	NAAMS Standard Rotated 180°
B4	NAAMS Standard Rotated 90°
C4	NAAMS Standard Rotated 270°
05	Ø10 mm Inside Hole, Cross Groove
07	Ø16 mm Inside Hole, NAAMS
09	Ø20 mm Straight Groove
10	Ø12 mm Straight Groove



Accessories	Description
<b>00</b>	No Accessories
<b>F1</b>	Bellows for piston rods <b>02, 05, 07, 10</b> in strokes <b>B, A, 2, 4</b> (82ZB-013-3)
<b>R1</b>	Guide Bushing for piston rods <b>01, 02, 05</b> (82ZB-192-1)



Sensor	Description
<b>L4</b>	Cover Plate for <b>B, A, 2, 4</b> (86P0-200L4)
<b>L6</b>	Cover Plate for <b>C, 6</b> (86P0-200L6)
<b>D8</b>	Inductive Sensing System with 90° M12x1 Swivel Connector for <b>B, A, 2, 4</b> (86P0-200D8), for <b>C, 6</b> (86P0-200D8006)



**Sensor Cables** Order separately

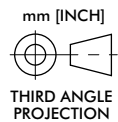
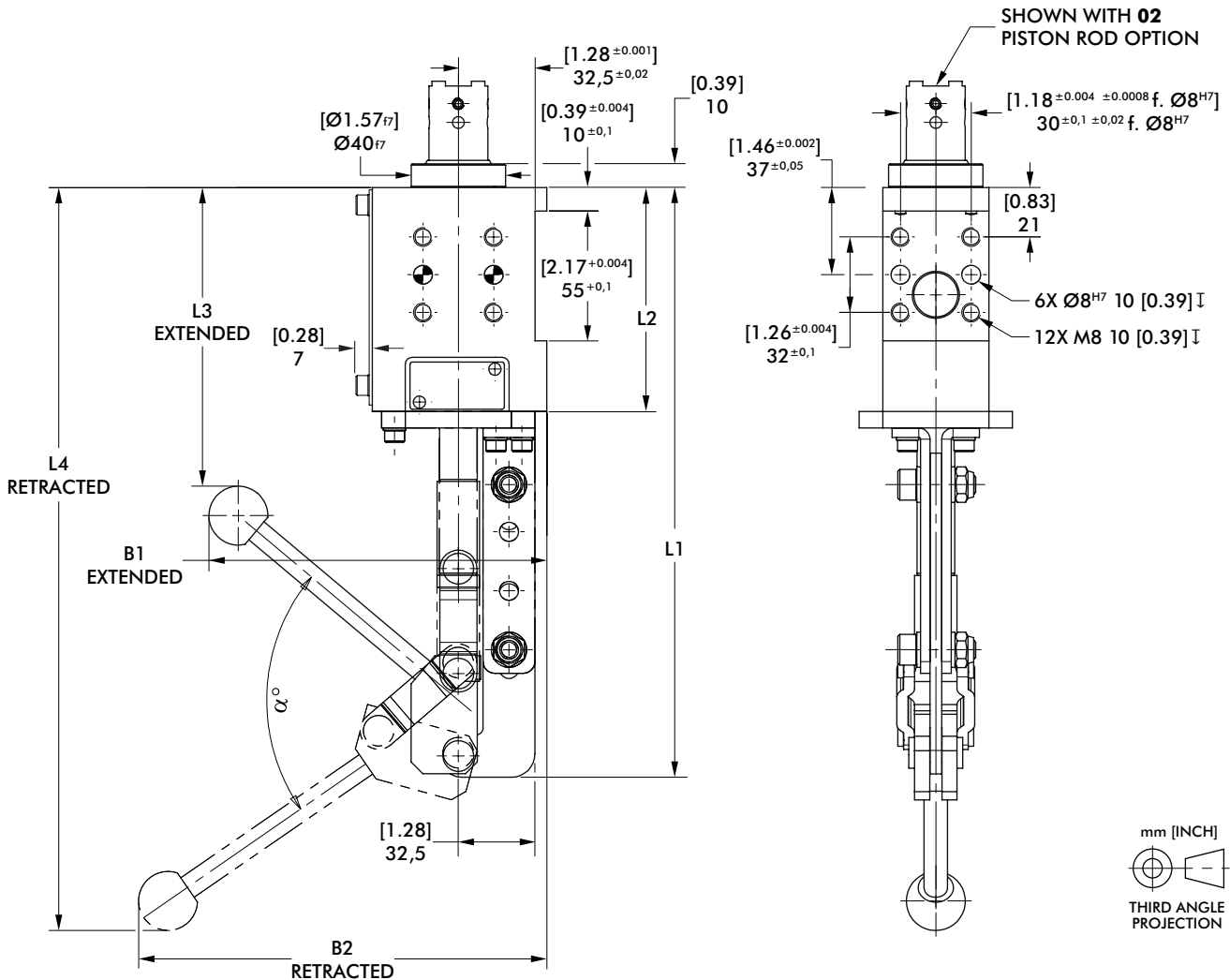
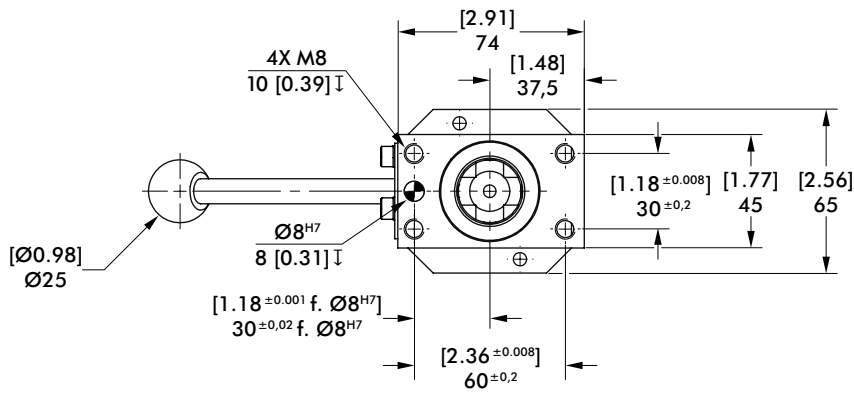
Order No.	Description
8EL-002-1	M12x1, Straight, 5-pin Connector with 5 m [16 ft.] Cable
8EL-003-1	M12x1, Angular, 4-pin Connector with 5 m [16 ft.] Cable

Stroke	Description
	<b>Anti-Twist Device/Low Accuracy</b>
<b>B</b>	20 mm Stroke (8MF-071-1)
<b>A</b>	40 mm Stroke (8CE-231-1)
<b>C</b>	60 mm Stroke (8CE-231-1)
	<b>Anti-Twist Device</b>
<b>2</b>	20 mm Stroke (86P0-20000002)
<b>4</b>	40 mm Stroke (86P0-20000004)
<b>6</b>	60 mm Stroke (86P0-20000006)



# 56H40-2

## Manual Pin Package | Single Shaft | Dimensions and Technical Specifications

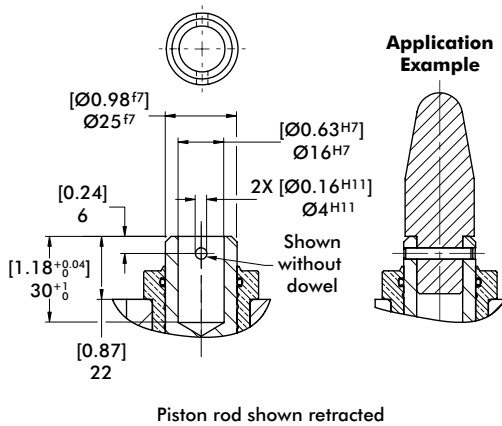


Base Model	Stroke Option	Stroke +2 mm [in]	B1 (extended) mm [in]	B2 (retracted) mm [in]	L1 (max.) mm [in]	L2 mm [in]	L3 (extended) mm [in]	L4 (retracted) mm [in]	Opening Angle α	Weight Kg [lbs]
56H40-2	B, 2	20 [0.79]		188 [7.40]	270 [10.63]		146 [5.75]	277 [10.91]	50°	2,0 [4.41]
	A, 4	40 [1.57]	144 [5.67]	173 [6.81]	250 [9.84]	95 [3.74]	126 [4.96]	315 [12.40]	75°	
	C, 6	60 [2.36]		116 [4.57]	270 [10.63]	115 [4.53]	146 [5.75]	394 [15.51]	109°	

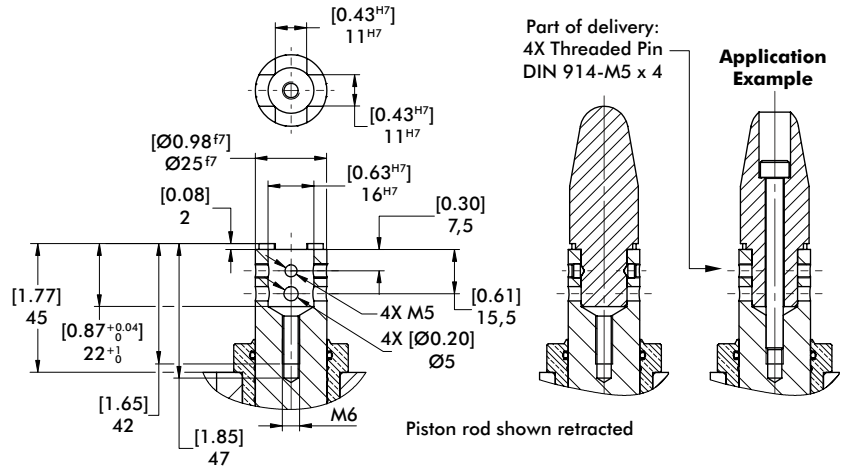
# 56H40-2 PISTON RODS

Manual Pin Package | Single Shaft | Dimensions and Technical Specifications

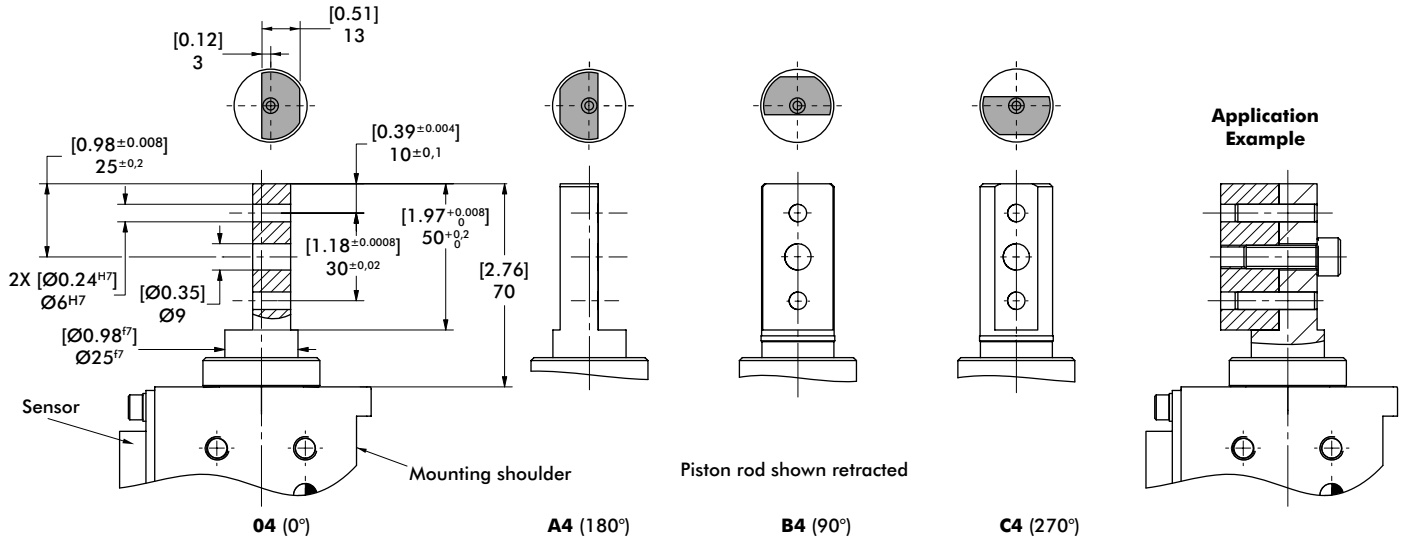
## 01 Ø16 mm Inside Hole



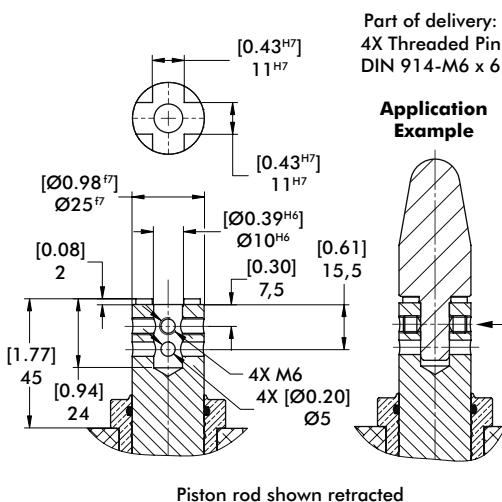
## 02 Ø16 mm M6 Threaded Inside Hole, Cross Groove



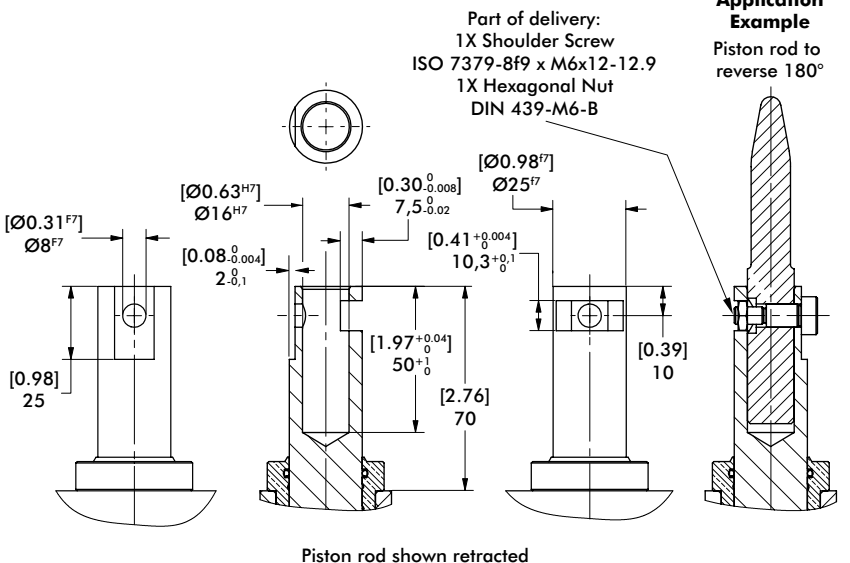
## 04, A4, B4, C4 NAAMS Standard



## 05 Ø10 mm Inside Hole, Cross Groove



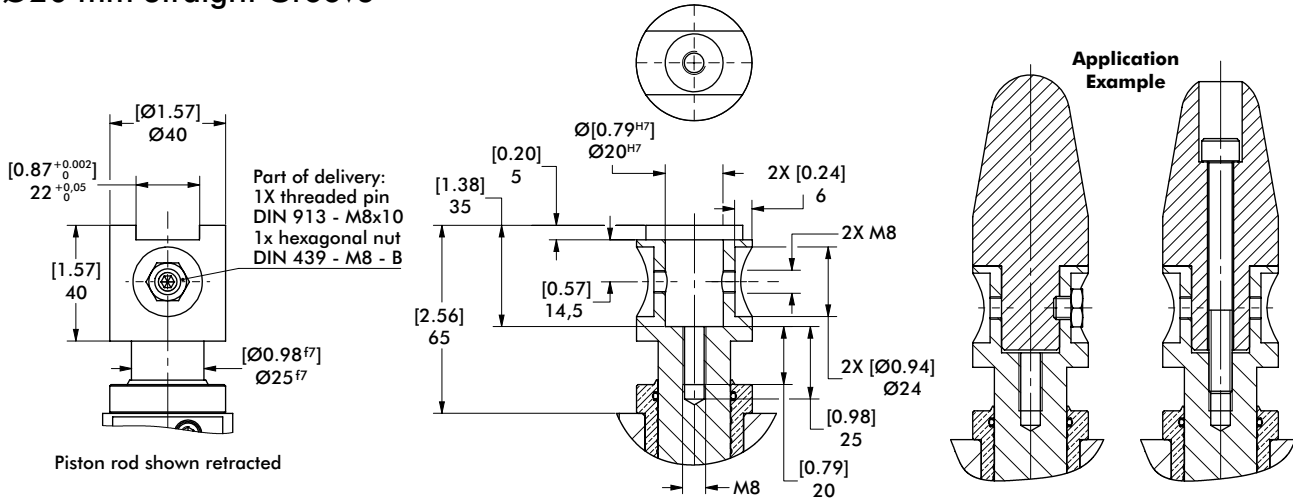
## 07 Ø16 mm Inside Hole, NAAMS



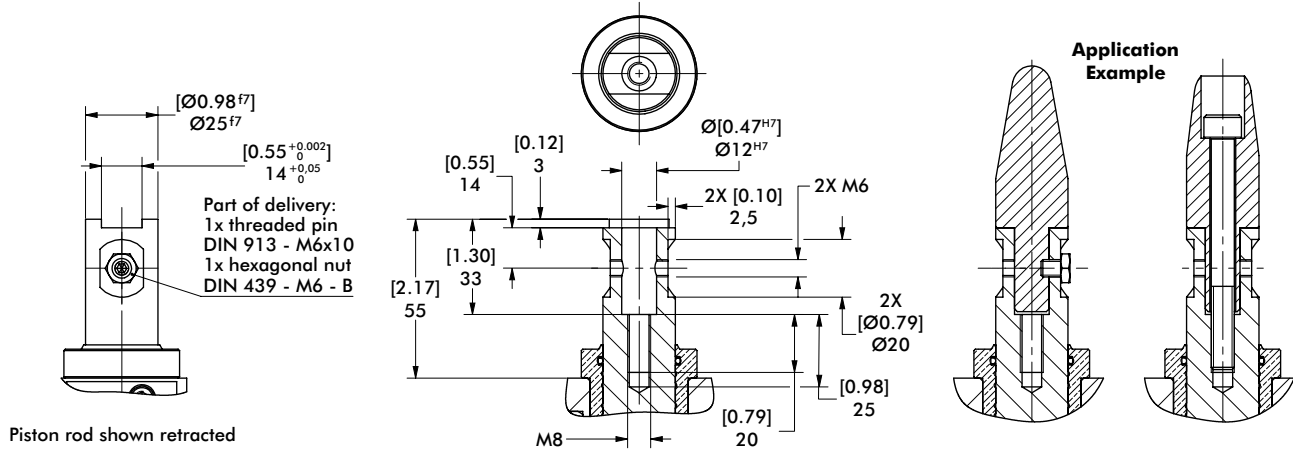
# 56H40-2 PISTON RODS

Manual Pin Package | Single Shaft | Dimensions and Technical Specifications

## 09 Ø20 mm Straight Groove



## 10 Ø12 mm Straight Groove

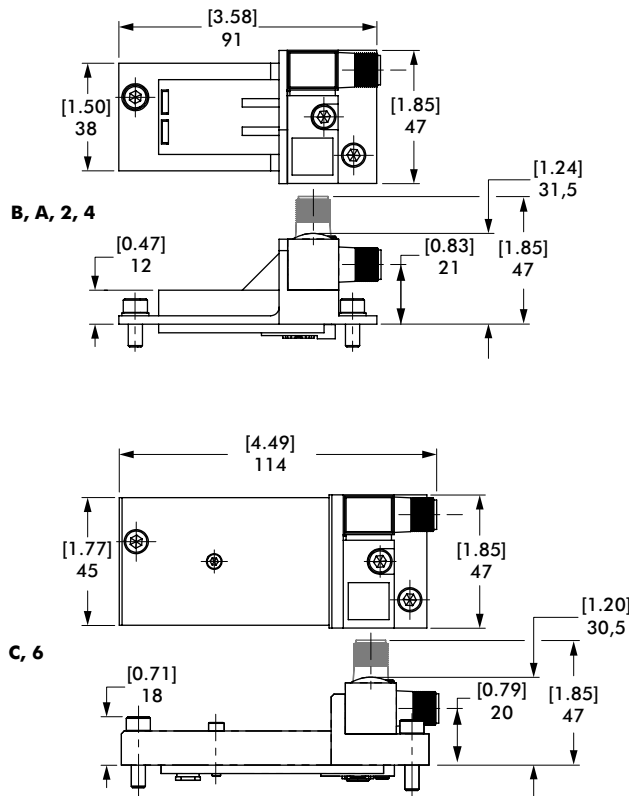




# 56H40-2 SENSORS

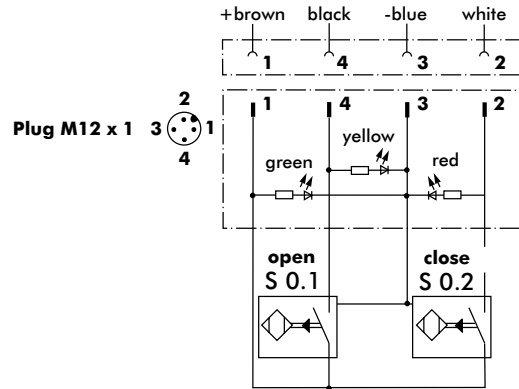
Manual Pin Package | Single Shaft | Dimensions and Technical Specifications

## D8 Inductive Sensing System with 90° Swivel Connector

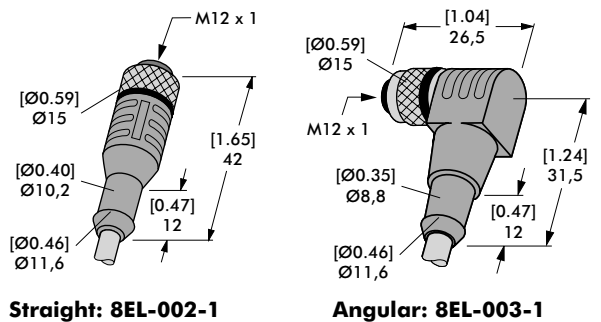


## Inductive Sensor Wiring Diagram

Sensing system immune to interference from AC / DC arc welding.



## Sensor Cable Accessories

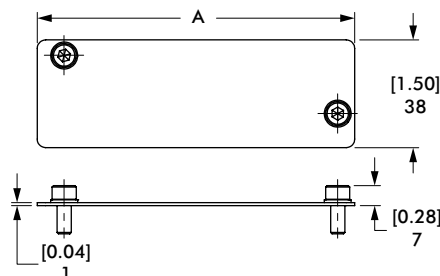


**Order no. Sensor Cables (1 connector & 5m cable)**

**8EL-002-1** M12x1, Straight, 5-pin Connector with 5 m [16 ft.] Cable

**8EL-003-1** M12x1, Angular, 4-pin Connector with 5 m [16 ft.] Cable

## L4, L6 Sensor Cover Plate



Cover Plate Option	Stroke Option	A mm [in]
L4	B, A, 2, 4	92 [3.62]
L6	C, 6	112 [4.41]

# 56H40-2 ACCESSORIES

Manual Pin Package | Single Shaft | Dimensions and Technical Specifications

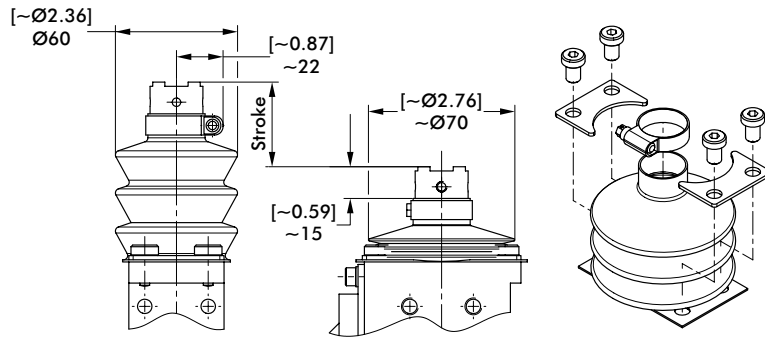
## F1 Bellows (Piston Rod Cover)



Extended



Retracted

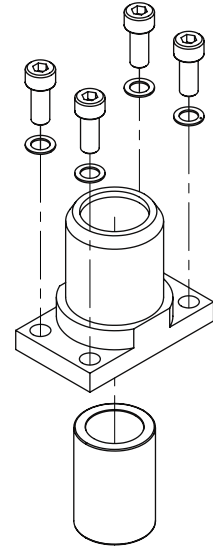
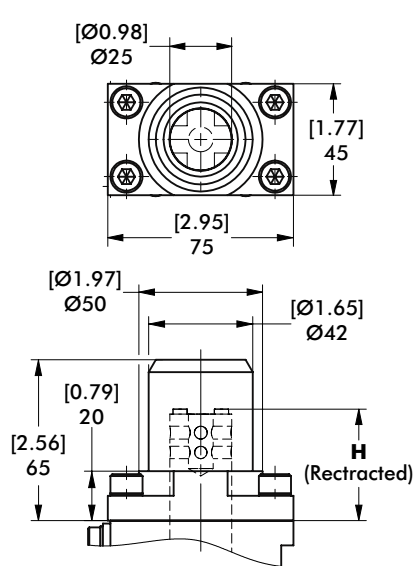
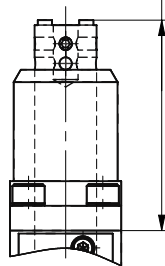


## R1 Guide Bushing



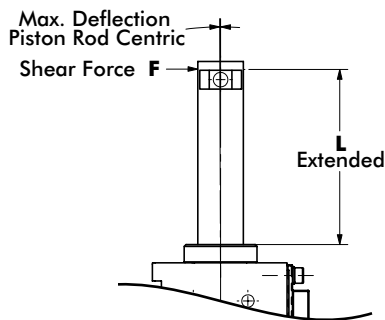
Piston Rod 05 Shown

STROKE  
20/40/60/80  
(Extended)



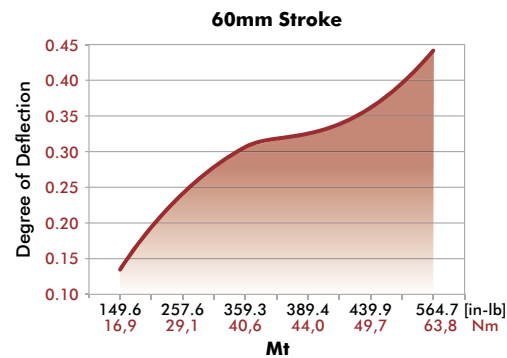
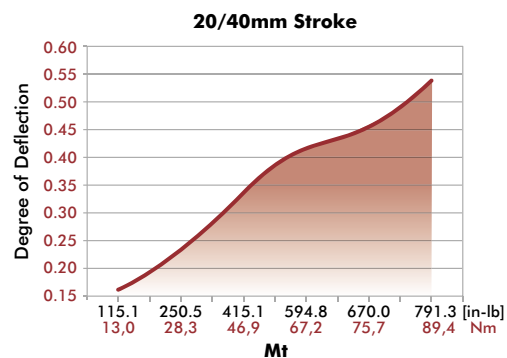
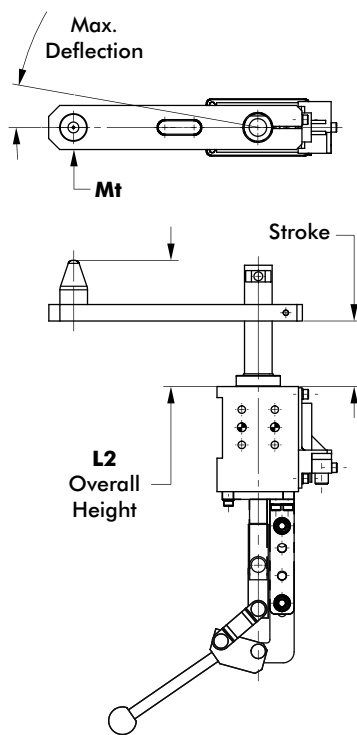
Model No.	Piston Rod Adapter	Stroke				
		H mm [in]	20 mm [in]	40 mm [in]	60 mm [in]	80 mm [in]
86P40-2...	01	22 [0.87]	42 [1.65]	62 [2.44]	82 [3.23]	102 [4.02]
86P60-2...	02	45 [1.77]	65 [2.56]	85 [3.35]	105 [4.13]	125 [4.92]
86P60H2...	03					
56H40-2...	05					

### Maximum Deflection for Centering Pin



Model no.	Shear force N [lbs]	L mm [in]	Stroke mm [in]	Deflection mm [in]
56H40-2...B / 2		52 [2.05]	20 [0.79]	0,06 [0.002]
56H40-2...A / 4	200 [45]	70 [2.76]	40 [1.58]	0,09 [0.004]
56H40-2...C / 6		90 [3.54]	60 [2.36]	0,12 [0.005]

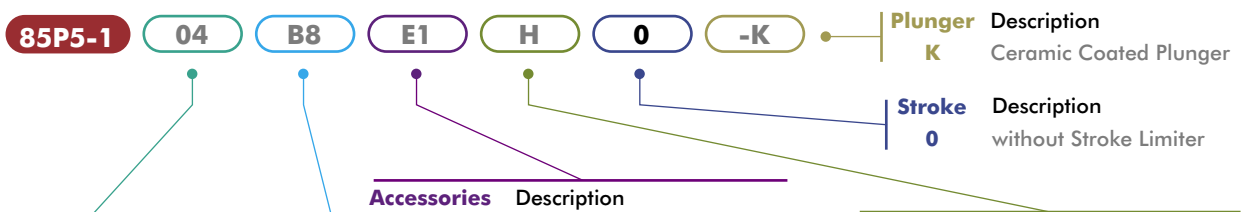
**Caution:** Generally we recommend using an external guide when the transverse force is more than 200 N [45 lbs]. Also independently of the stroke, less transverse forces, when the overall height  $L2 > 120$  mm [4.7 in] ( $L2 =$  extended piston rod plus centering pin ).



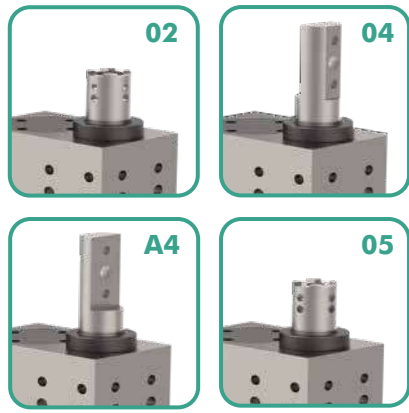
**Caution:** Generally we recommend using an external guide when the transverse force is more than 200 N [45 lbs]. Also independently of the stroke, less transverse forces, when the overall height  $L2 > 120$  mm [4.7 in] ( $L2 =$  extended piston rod plus centering pin ).

# 85P5-1

## Pneumatic Pin Package | Single Shaft | Ordering Information



Piston Rod	Description
02	Ø16 mm M6 Threaded Inside Hole, Cross Groove
04	NAAMS Standard
A4	NAAMS Standard Rotated 180°
05	Ø10 mm Inside Hole, Cross Groove



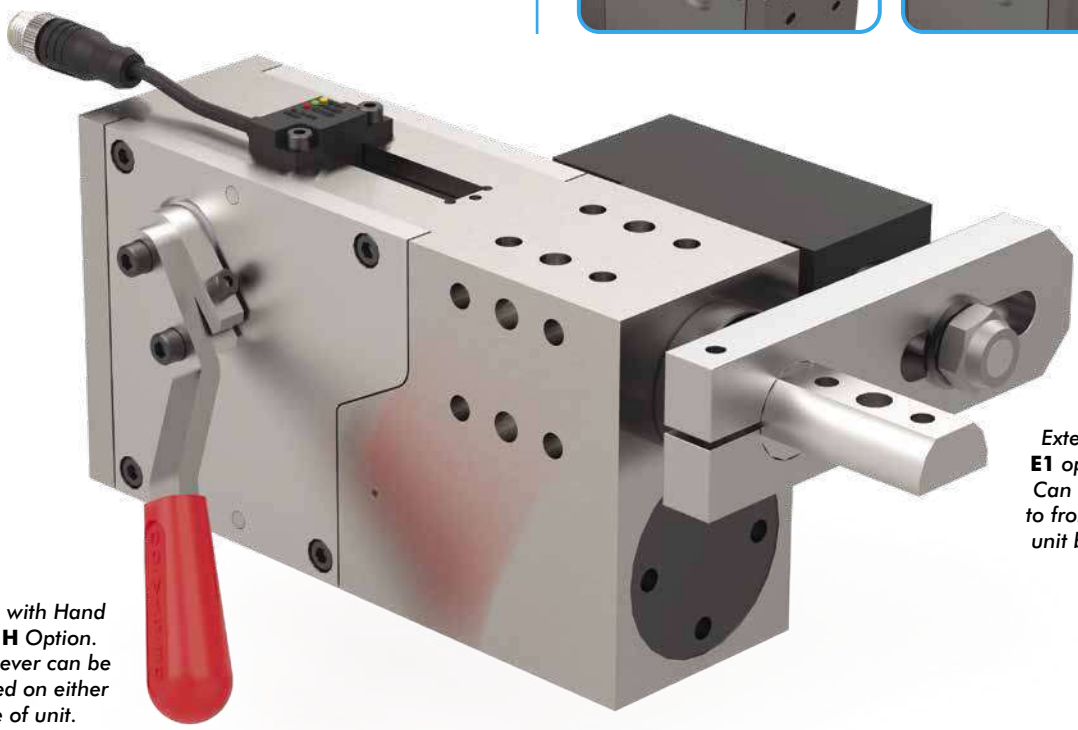
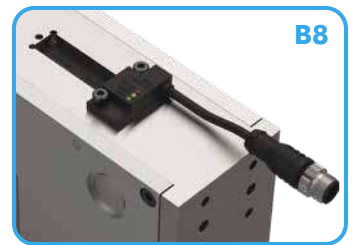
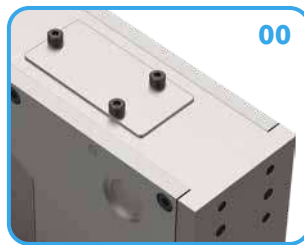
Accessories	Description
00	No Accessories
E1*	External Guide (82ZB-010-2) *External Guide can be mounted to front or sides of unit by customer.



Hand Lever	Description
0	No Hand Lever
H	Hand Lever *Hand Lever can be attached on either side of unit.



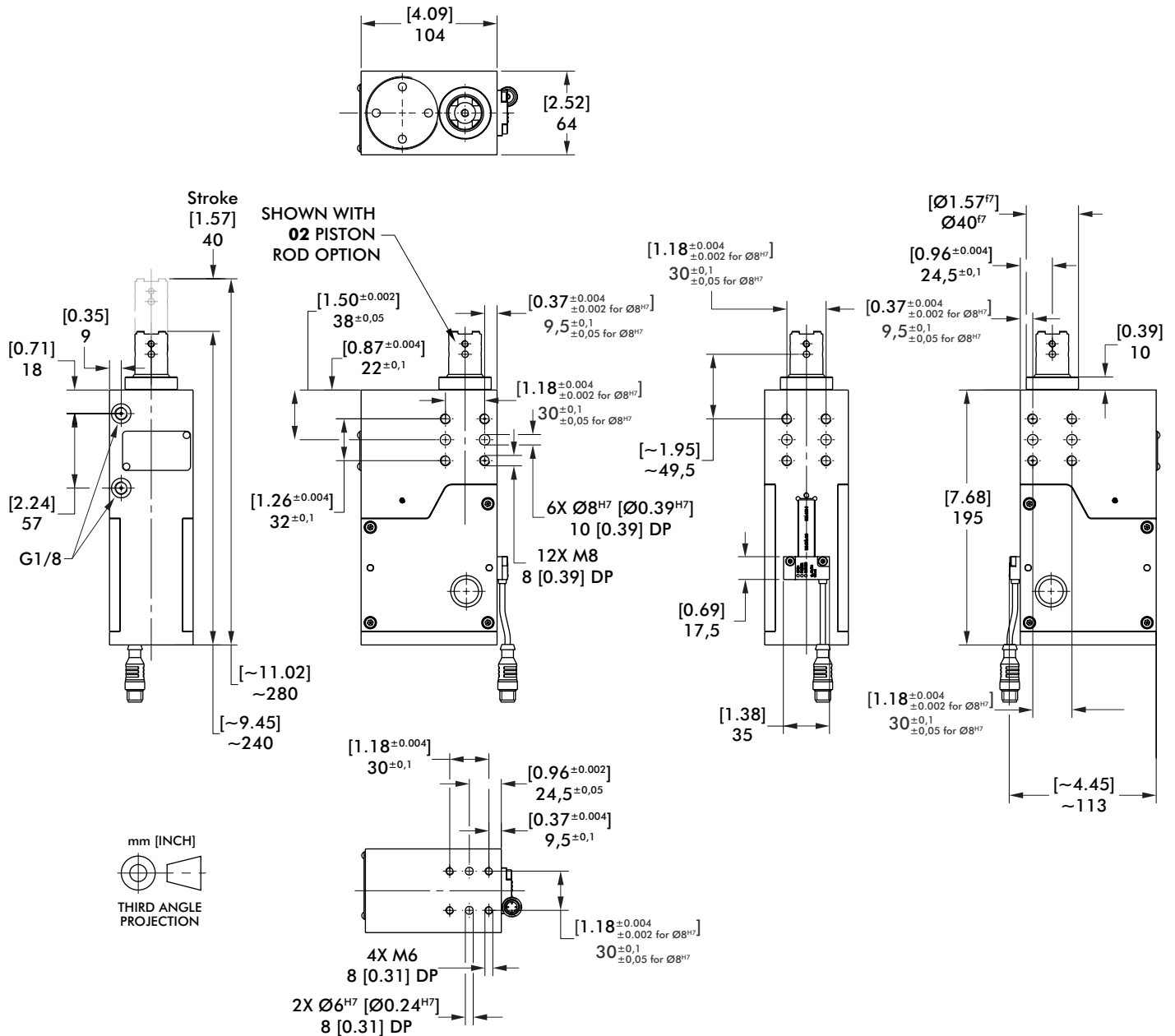
Sensor	Description
00	Without Sensing System
B8	Inductive Sensing System with M12x1 Cable Connector (8EA-033-2)



Shown with Hand Lever H Option. Hand Lever can be attached on either side of unit.

External Guide E1 option shown. Can be mounted to front or sides of unit by customer.

## Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications



Medium: Operation with oil free air is permissible

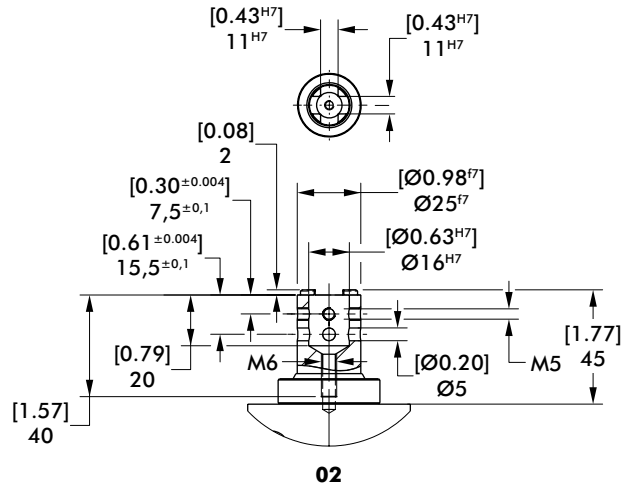
**Note:** Extracting force and retracting force shown in this chart are only available with the last 2 mm stroke at extracted position. In the other range of the stroke the forces will be approximately 30% of value in the chart.

Base Model	Stroke mm [in]	Pushing Force at 6 bar N [lbf]	Retraction Force at 6 bar N [lbf]	Holding Force at 6 bar N [lbf]	Max. Operating Pressure bar [psi]	Piston Ø mm [in]	Weight Kg [lbs]	Air consumption per double stroke at 5 bar dm <sup>3</sup> [ft <sup>3</sup> ]
85P5-1	40 [1.57]	2000 [449]	1000 [225]	5000 [1124]	6 [87]	50 [1.97]	3,8 [8.36]	1,1 [0.04]

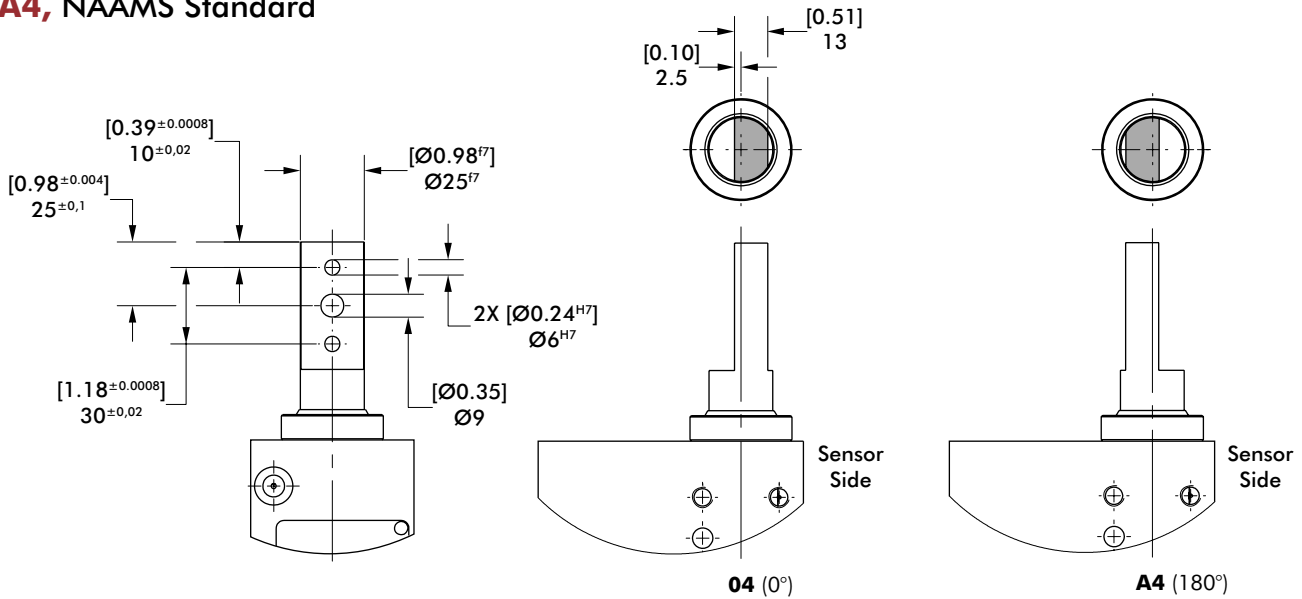
# 85P5-1 PISTON RODS

Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

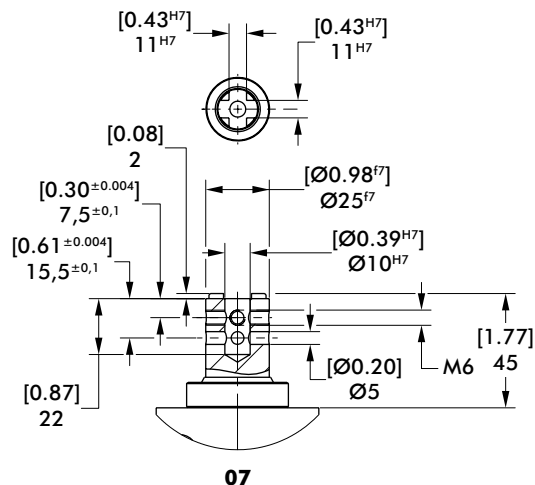
## 02 Ø16 mm M6 Threaded Inside Hole, Cross Groove



## 04, A4, NAAMS Standard



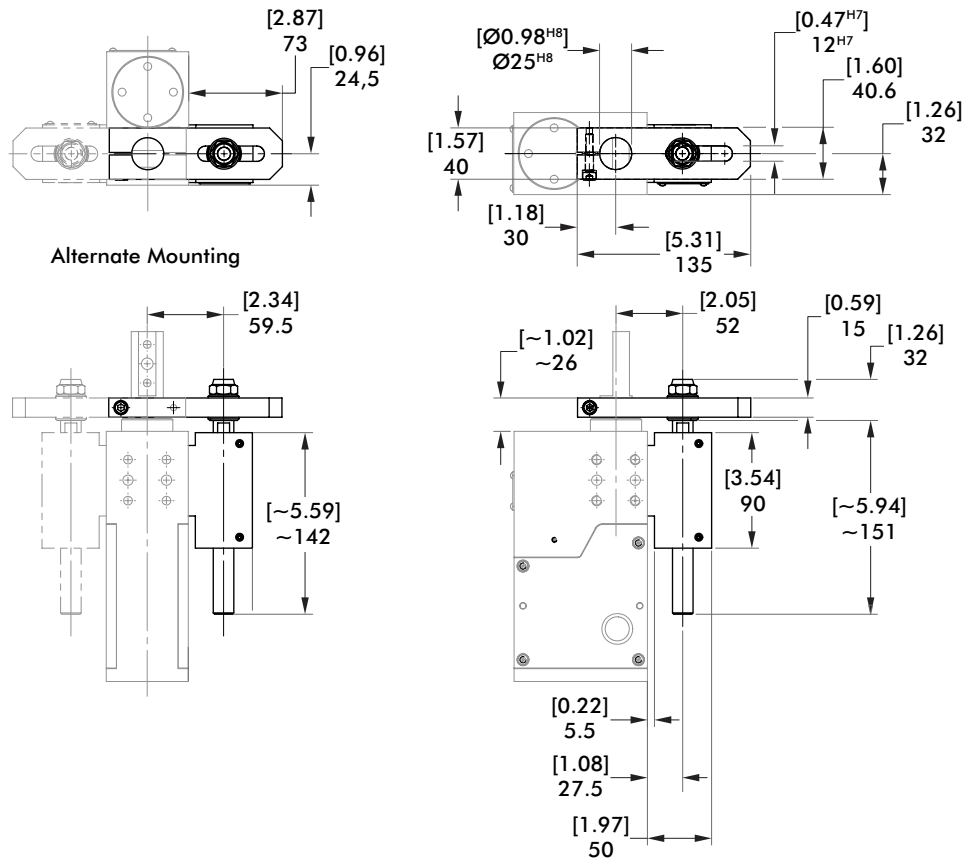
## 07 Ø16 mm Inside Hole, NAAMS



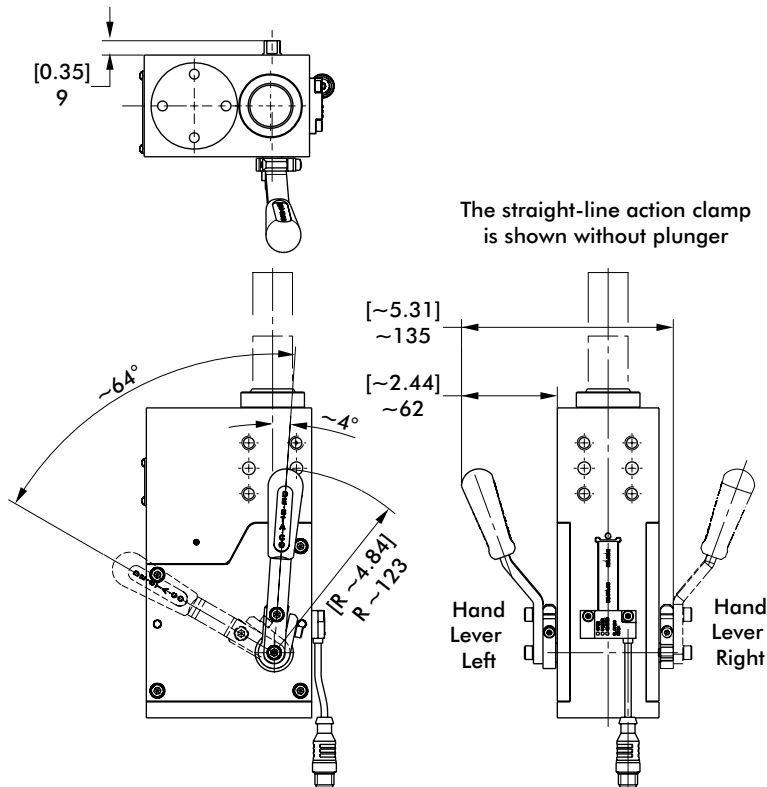
# 85P5-1 OPTIONS

## Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

### E1 External Guide



### H Hand Lever



Model no.

Weight  
kg [lb]

85P5-1\*\*\*\*00H0

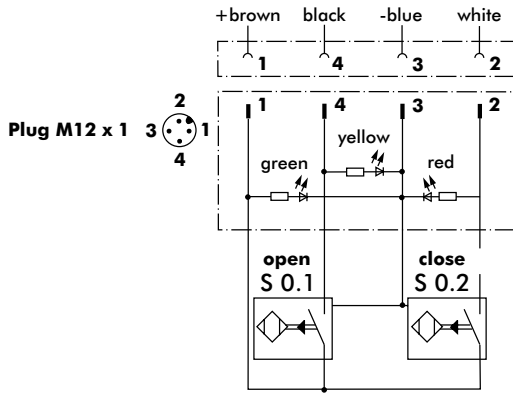
4 [8.82]

# 85P5-1

## Pneumatic Pin Package | Single Shaft | Dimensions and Technical Specifications

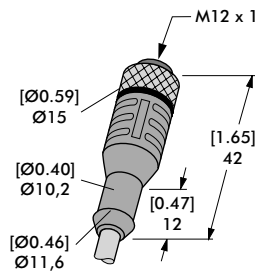
### Inductive Sensor Wiring Diagram

Sensing system immune to interference from A.C./D.C. arc welding.

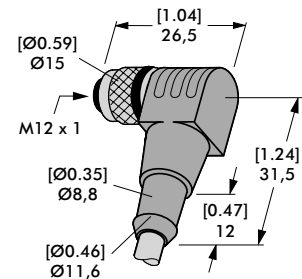


### Sensor Accessories and Spare Parts

Description	Order no.
<b>Sensor Cables</b> (1 connector & 5 m cable)	
M12x1 connector, straight, 5-pin	<b>8EL-002-1</b>
M12x1 connector, 90° angular, 4-pin	<b>8EL-003-1</b>
<b>Spare Parts</b>	<b>Order no.</b>
<b>Cylinder</b>	<b>8PW-105-1</b>
<b>Cylinder Seal Kit</b>	<b>8PW-105-1-00</b>

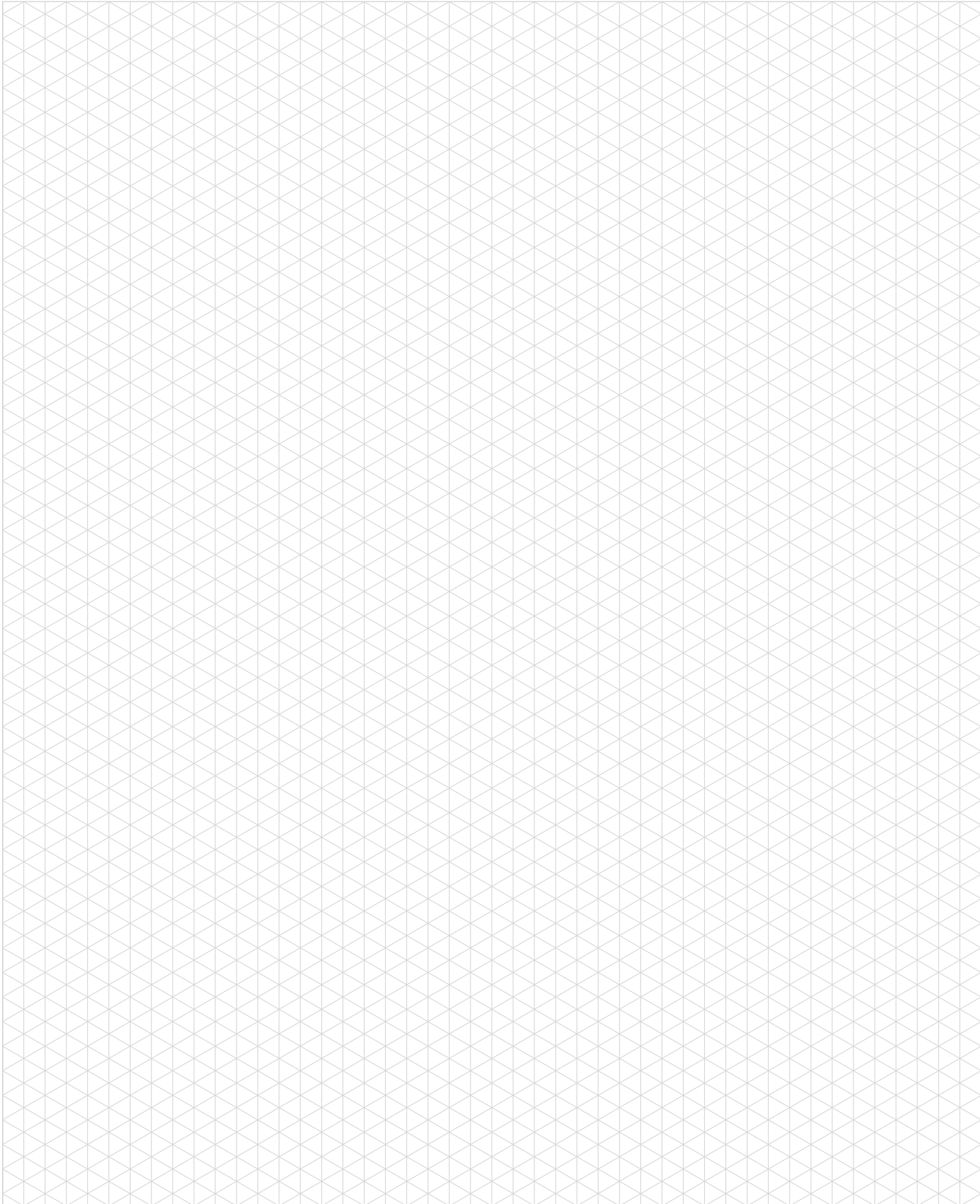


**Straight: 8EL-002-1**



**Angular: 8EL-003-1**



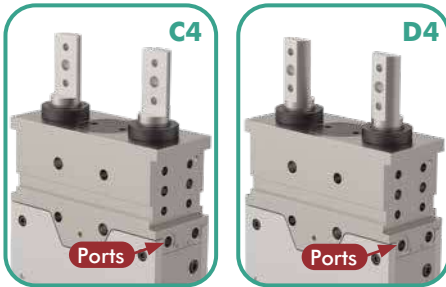


# 85D5-2

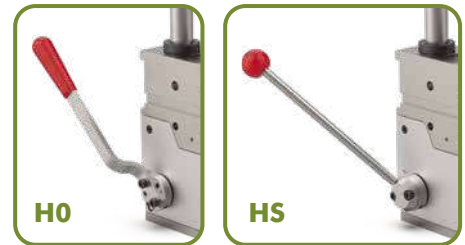
## Pneumatic Pin Package | Dual Shaft | Ordering Information

**85D5-2** **C4** **L8** **10** **H0** **4** | Stroke 4 | Description 40 mm Stroke

Piston Rod	Description
<b>C4</b>	NAAMS Standard
<b>D4</b>	NAAMS Standard Rotated 180°



Hand Lever	Description
<b>00</b>	No Hand Lever
<b>H0</b>	Standard Hand Lever
<b>HS</b>	Weldable Hand Lever

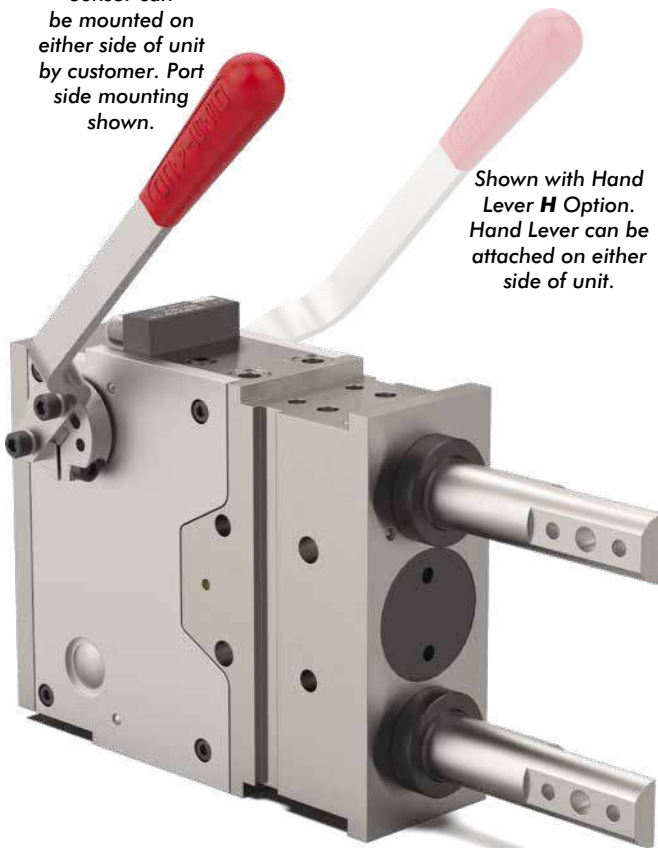


Hand Lever Shafts*	Description
<b>10</b>	Non-port side
<b>20</b>	Port side

\*Hand Lever can be attached on either side of unit.



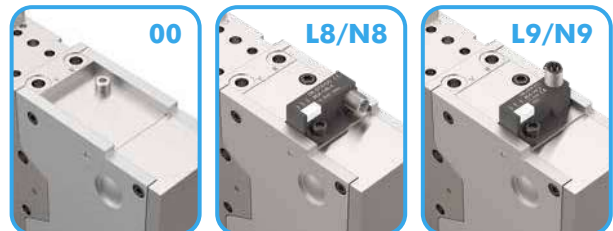
Sensor can be mounted on either side of unit by customer. Port side mounting shown.



Shown with Hand Lever **H** Option. Hand Lever can be attached on either side of unit.

Sensor	Description
<b>00</b>	Without Sensing System
<b>L8</b>	PNP Sensor with In-line M12x1 Connector (8EA-146-4-B)
<b>N8</b>	NPN Sensor with In-line M12x1 Connector (8EA-154-4-B)
<b>L9</b>	PNP Sensor with 90° M12x1 Connector (8EA-147-4-B)
<b>N9</b>	NPN Sensor with 90° M12x1 Connector (8EA-155-4-B)
<b>K8</b>	PNP Sensor with M12x1 Cable Connector (8EA-158-4-B)
<b>K9</b>	NPN Sensor with M12x1 Cable Connector (8EA-167-4-B)

\*Sensors can be mounted on opposite side by customer.

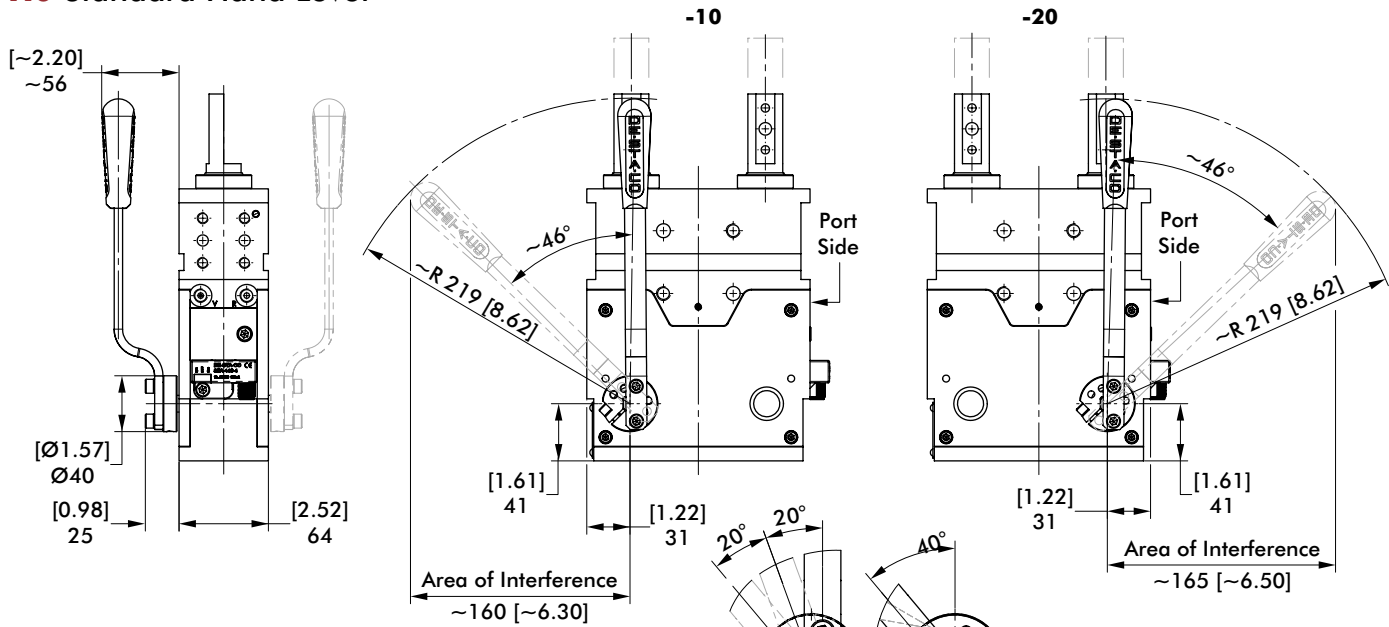




# 85D5-2 OPTIONS

Pneumatic Pin Package | Dual Shaft | Dimensions and Technical Specifications

## H0 Standard Hand Lever



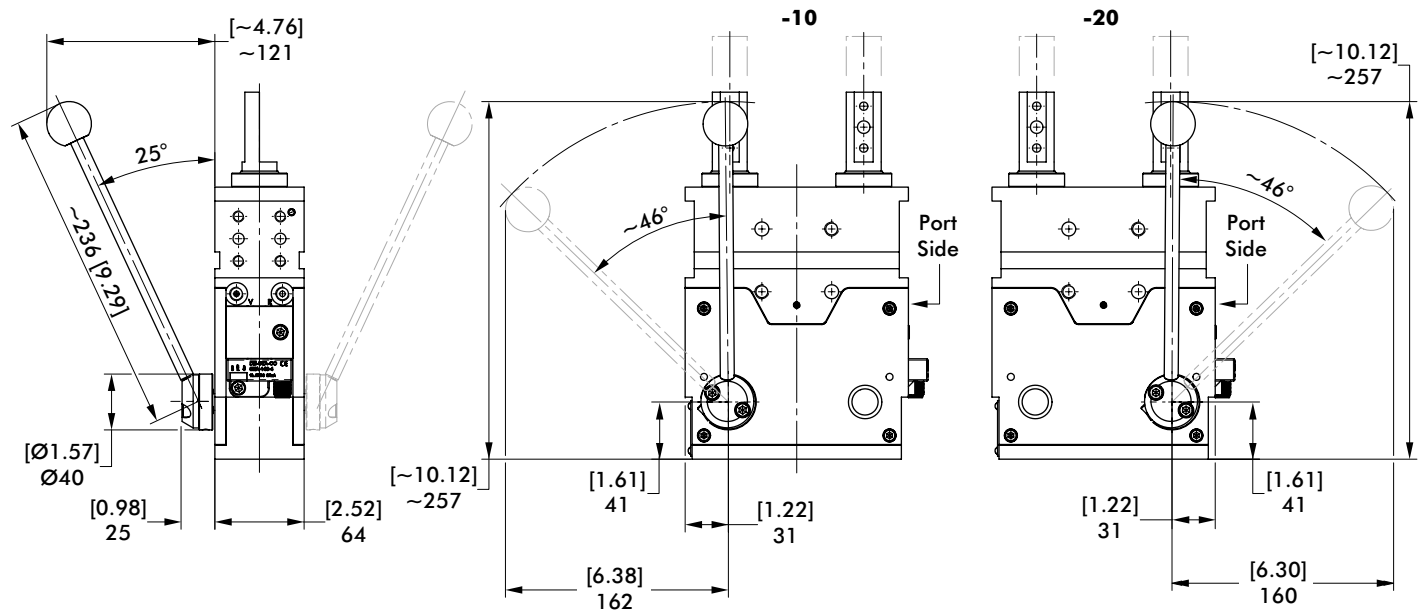
**Note:**  
Specified dimensions for the area of interference apply only to the shown example.

The start position and the angle of the hand lever changes by mounting of the hand lever on the other side of the clamp or by rebuilding of the lever on the clamp piece.

Hand lever angle can be changed by further mounting options on the clamp piece

Model no.	Weight kg [lb]
85D5-2*****H04	8,3 [18.29]

## H0 Weldable Hand Lever



**Note:**  
The view shows an example for a position of the welded hand lever.

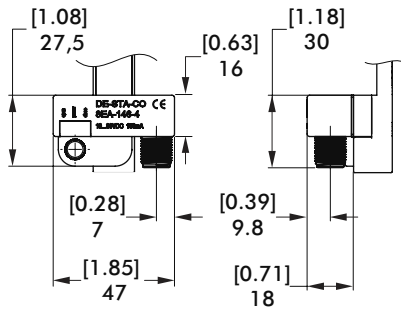
The hand lever is delivered loose enclosed and can be welded by the customer in the required position. Easy custom left hand or right hand mounting in required position.

Model no.	Weight kg [lb]
85D5-2*****HS4	8,3 [18.29]

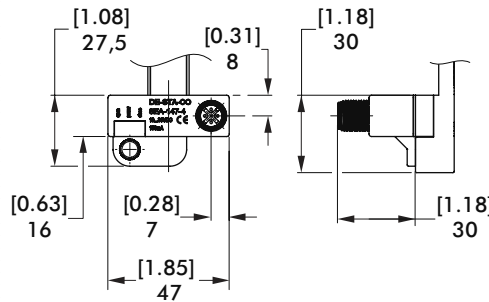
# 85D5-2 SENSORS

Pneumatic Pin Package | Dual Shaft | Dimensions and Technical Specifications

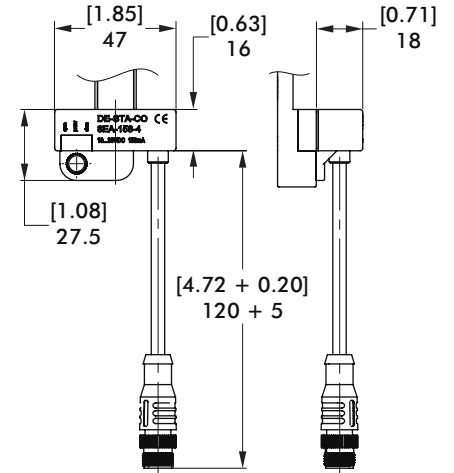
## L8, N8 Inductive Sensing System



## L9, N9 Inductive Sensing System with 90° Connector

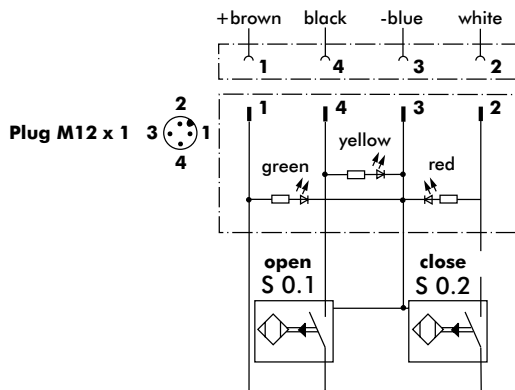


## K8, K9 Inductive Sensing System with Pigtail Connector



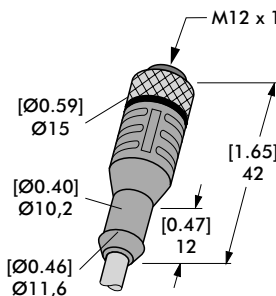
## Inductive Sensor Wiring Diagram

Sensing system immune to interference from AC / DC arc welding.

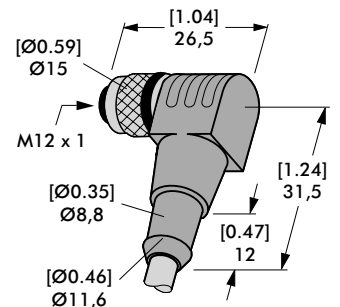


## Sensor Cable Accessories

Sensor Cables (1 connector & 5m cable)	Order no.
M12x1 connector, straight, 5-pin	<b>8EL-002-1</b>
M12x1 connector, 90° angular, 4-pin	<b>8EL-003-1</b>



**Straight Cable**  
8EL-002-1



**Angular Cable**  
8EL-003-1

# 86D40/86D60

## Pneumatic Pin Package | Dual Shaft | Ordering Information

**86D40**

**-1**

**A4**

**D8**

**00**

**A**

**K**

**Plunger** Description

**K** Ceramic Option for Piston Rod

**Base Model** Description

**86D40** 40 mm Cylinder (G1/8 Port)

**86D60** 63 mm Cylinder (G1/4 Port)

**Accessories** Description

**00** No Accessories

**01** Locking Device for Retracted Position. Mountable on both sides (H1 only) (86D60H1000001)

**Hand Lever** Description

**-1** No Hand Lever

**H1** Handle for Manual Control (86D60 only)


**Piston Rod** Description

**04** NAAMS Standard


**A4** NAAMS Standard Rotated 180°

**11** Dual Bolt Mounting (86D40-1 Only)


**04**




**A4**




**11**




**B**



**A**



**C**



**Sensor\*** for 86D40

**L4** Cover Plate (86D0-100L4)

**D8** with 90° M12x1 Swivel Connector (86D40-100D8)

\*Sensors can be mounted on opposite side by customer.


**Sensor\*** for 86D60

**L6** Cover Plate (86D0-100L6)


**D8** with 90° M12x1 Swivel Connector (86D0-100D8)

\*Sensors can be mounted on opposite side by customer.


**L4**




**D8**




**L6**




**D8**



**86D40-1**



**86D60-1**

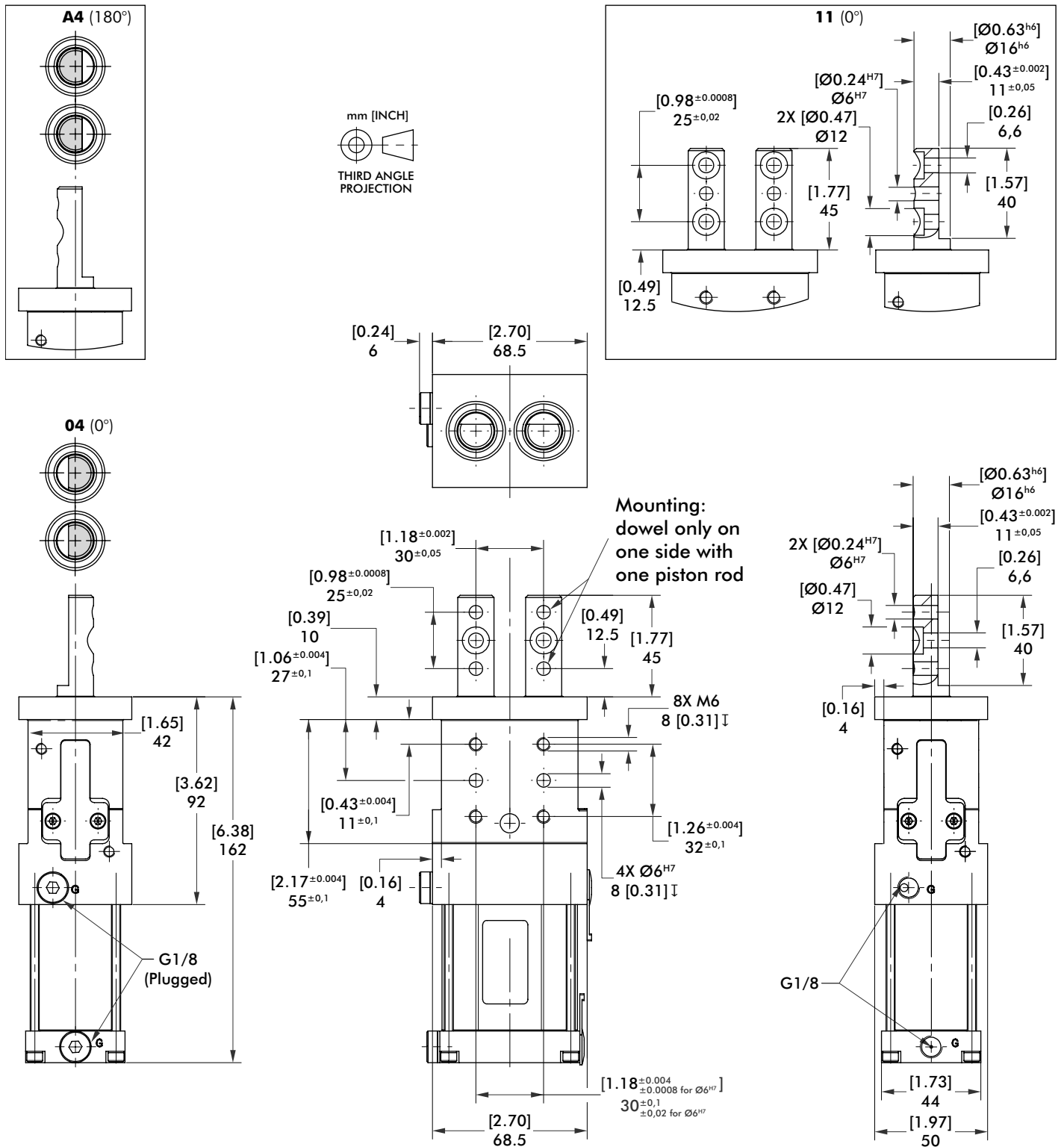


Stroke Option: **A, B**

Stroke Option: **A, B, C**

86D40 shown with sensor mounted on opposite side of unit.

## Pneumatic Pin Package | Dual Shaft | Dimensions and Technical Specifications



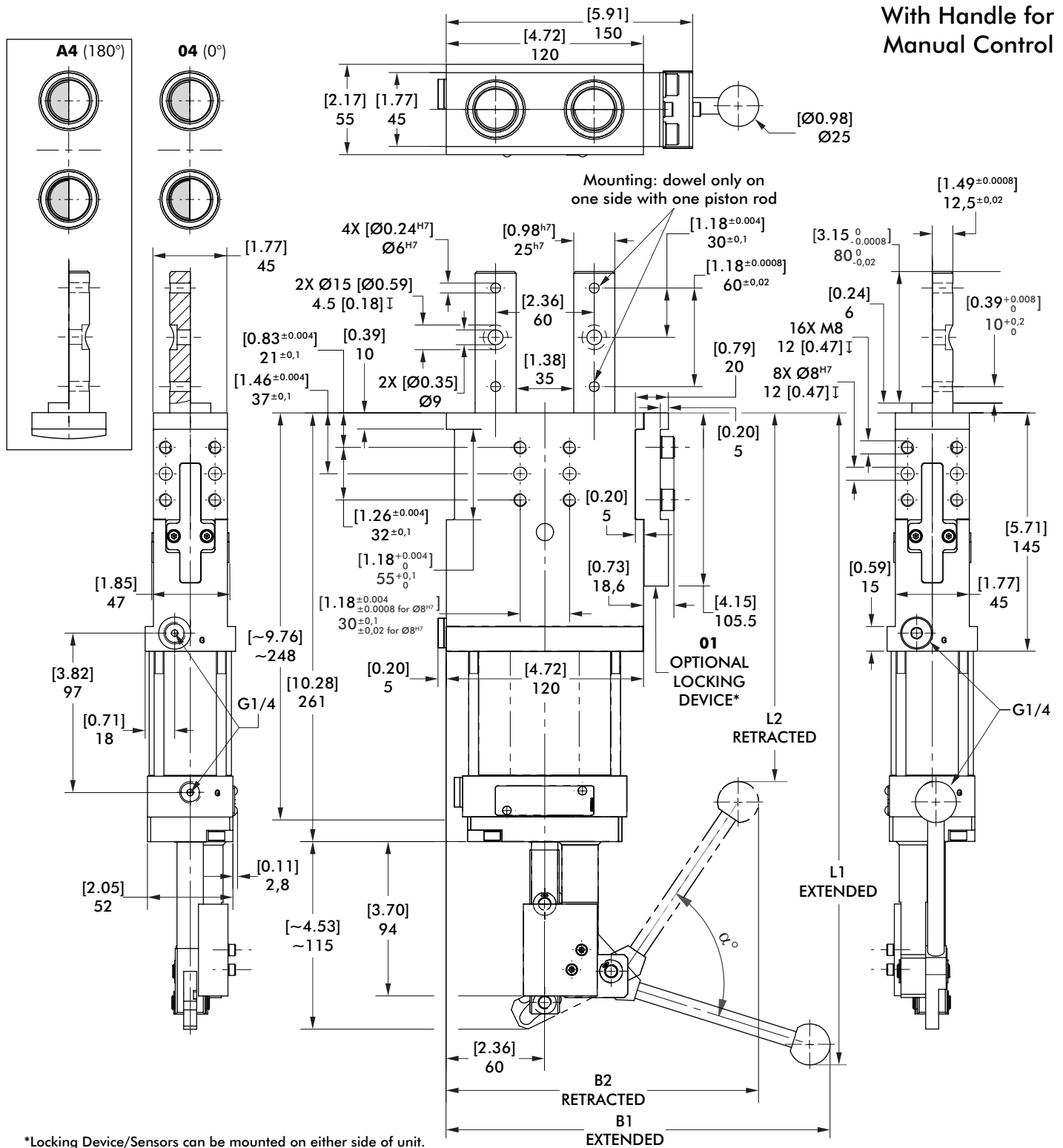
Base Model	Stroke +2 [0.08] mm [in]	Pushing Force at 5 bar N [lbf]	Retraction Force at 5 bar N [lbf]	Max. Operating Pressure bar [psi]	Piston Ø mm [in]	Weight Kg [lbs]	Air consumption per double stroke at 5 bar dm <sup>3</sup> [ft <sup>3</sup> ]
86D40-1.....A	40 [1.57]	700 [157]	600 [135]	6 [87]	40 [1.57]	1,5 [3.31]	0,75 [0.03]
86D40-1.....B	20 [0.79]	700 [157]	600 [135]	6 [87]	40 [1.57]	1,5 [3.31]	0,47 [0.02]





## Pneumatic Pin Package | Dual Shaft | Dimensions and Technical Specifications

With Handle for Manual Control

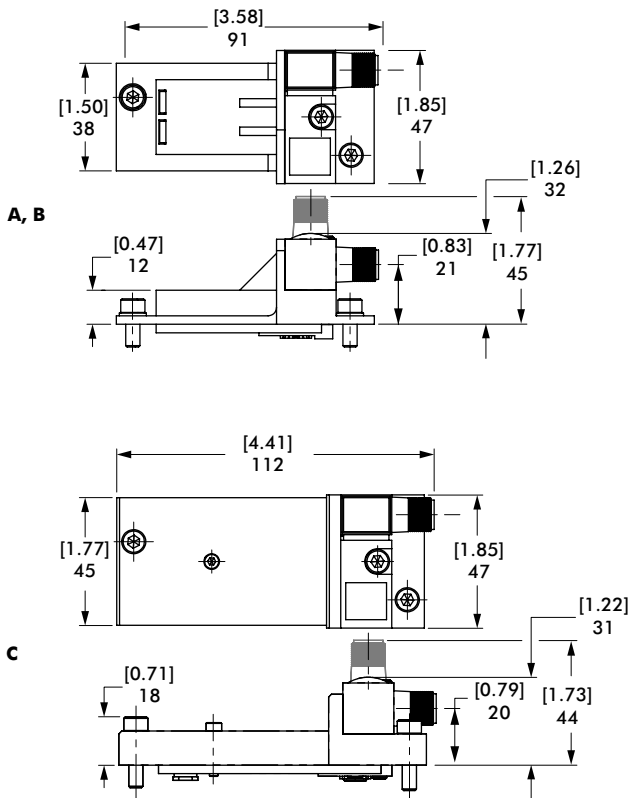


Base Model	Stroke Option	Stroke +2 [0.08] mm [in]	~B1 (extended) mm [in]	~B2 (retracted) mm [in]	~L1 (extended) mm [in]	~L2 (retracted) mm [in]	Opening Angle α	Weight Kg [lbs]
86D60H1	B, 2	20 [0.79]	242 [9.53]		351 [13.82]		52.6°	5,78 [12.74]
	A, 4	40 [1.57]	228 [8.98]	190 [7.48]	295 [11.61]	224.5 [8.84]	26.5°	5,79 [12.76]
	C, 6	60 [2.36]	234 [9.21]		397 [15.63]		73.3°	5,76 [12.69]

# 86D40/86D60 SENSORS

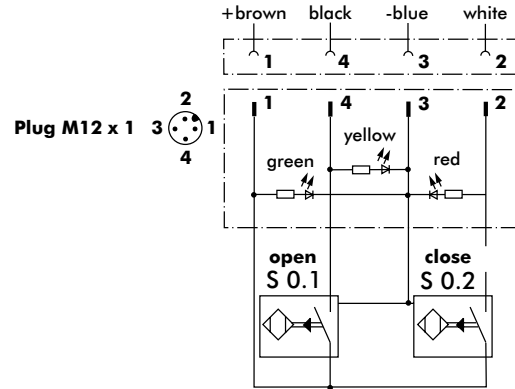
Pneumatic Pin Package | Dual Shaft | Dimensions and Technical Specifications

## D8 Inductive Sensing System with 90° Swivel Connector

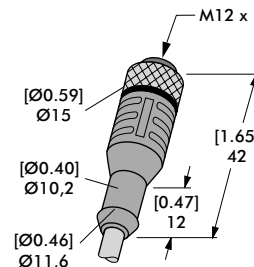


## Inductive Sensor Wiring Diagram

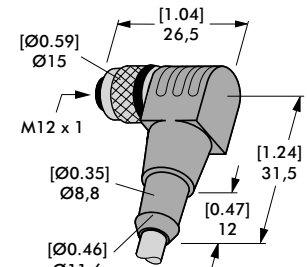
Sensing system immune to interference from AC / DC arc welding.



## Sensor Cable Accessories

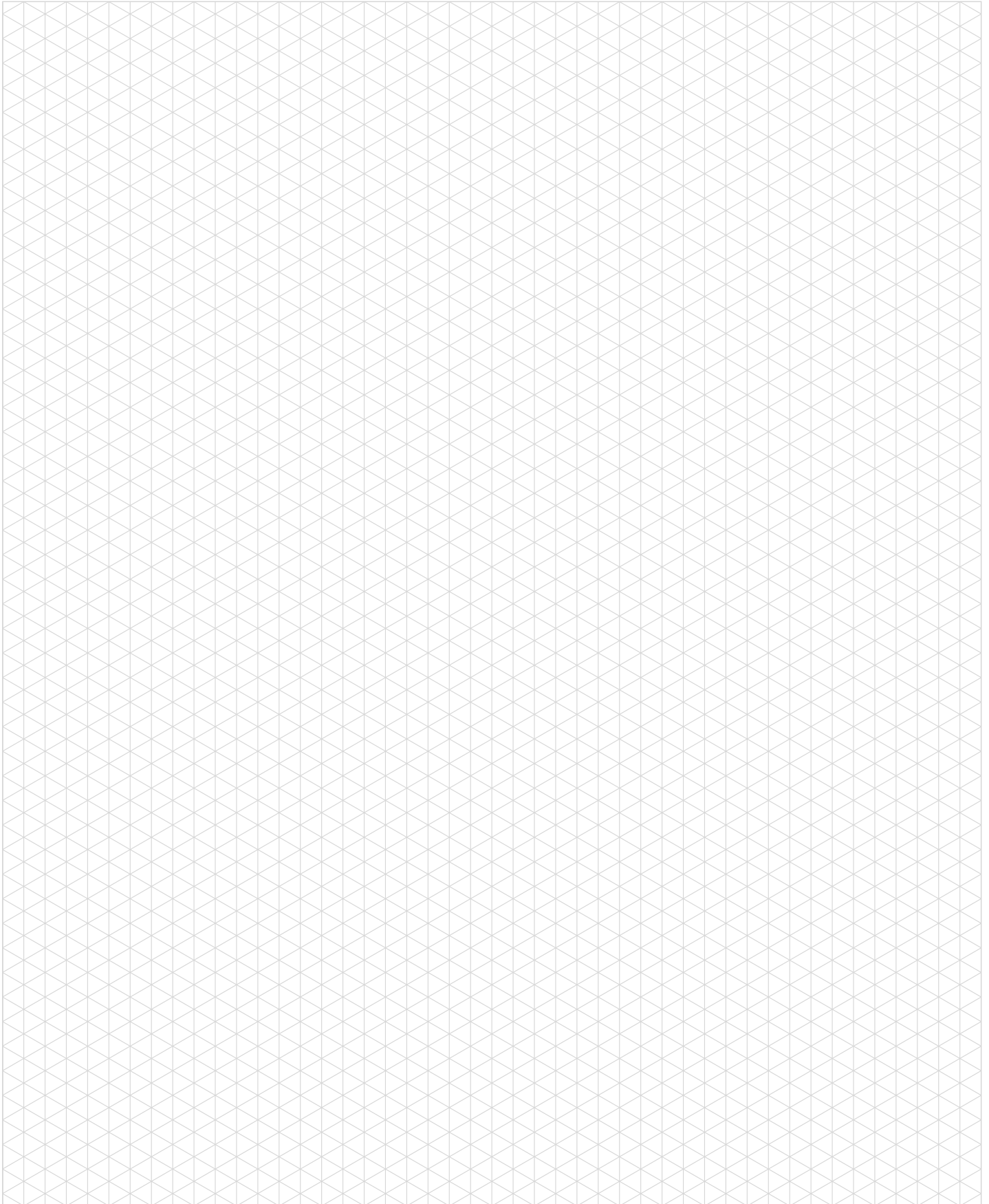


**Straight: 8EL-002-1**



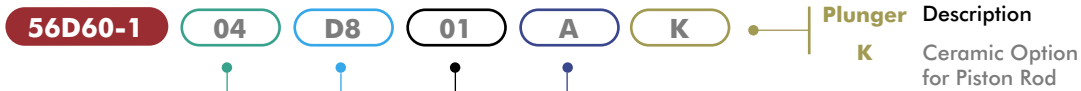
**Angular: 8EL-003-1**

Sensor Cables (1 connector & 5m cable)	Order no.
M12x1 connector, straight, 5-pin	<b>8EL-002-1</b>
M12x1 connector, 90° angular, 4-pin	<b>8EL-003-1</b>

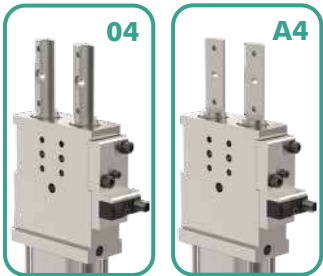


# 56D60-1

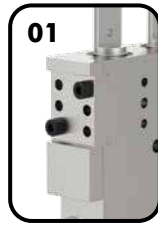
## Manual Pin Package | Dual Shaft | Ordering Information



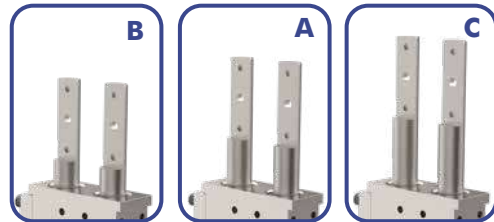
Piston Rod	Description
<b>04</b>	NAAMS Standard
<b>A4</b>	NAAMS Standard Rotated 180°



Accessories	Description
<b>00</b>	No Accessories
<b>01</b>	Locking Device for Retracted Position. Mountable on both sides (86D60H1000001)

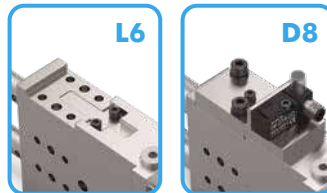


Stroke	Description
<b>B</b>	20 mm Stroke (86D0-1000000B)
<b>A</b>	40 mm Stroke (86D0-1000000A)
<b>C</b>	60 mm Stroke (86D0-1000000C)



Sensor*	Description
<b>L6</b>	Cover Plate (86D0-100L6)
<b>D8</b>	with 90° M12x1 Swivel Connector (86D0-100D8)

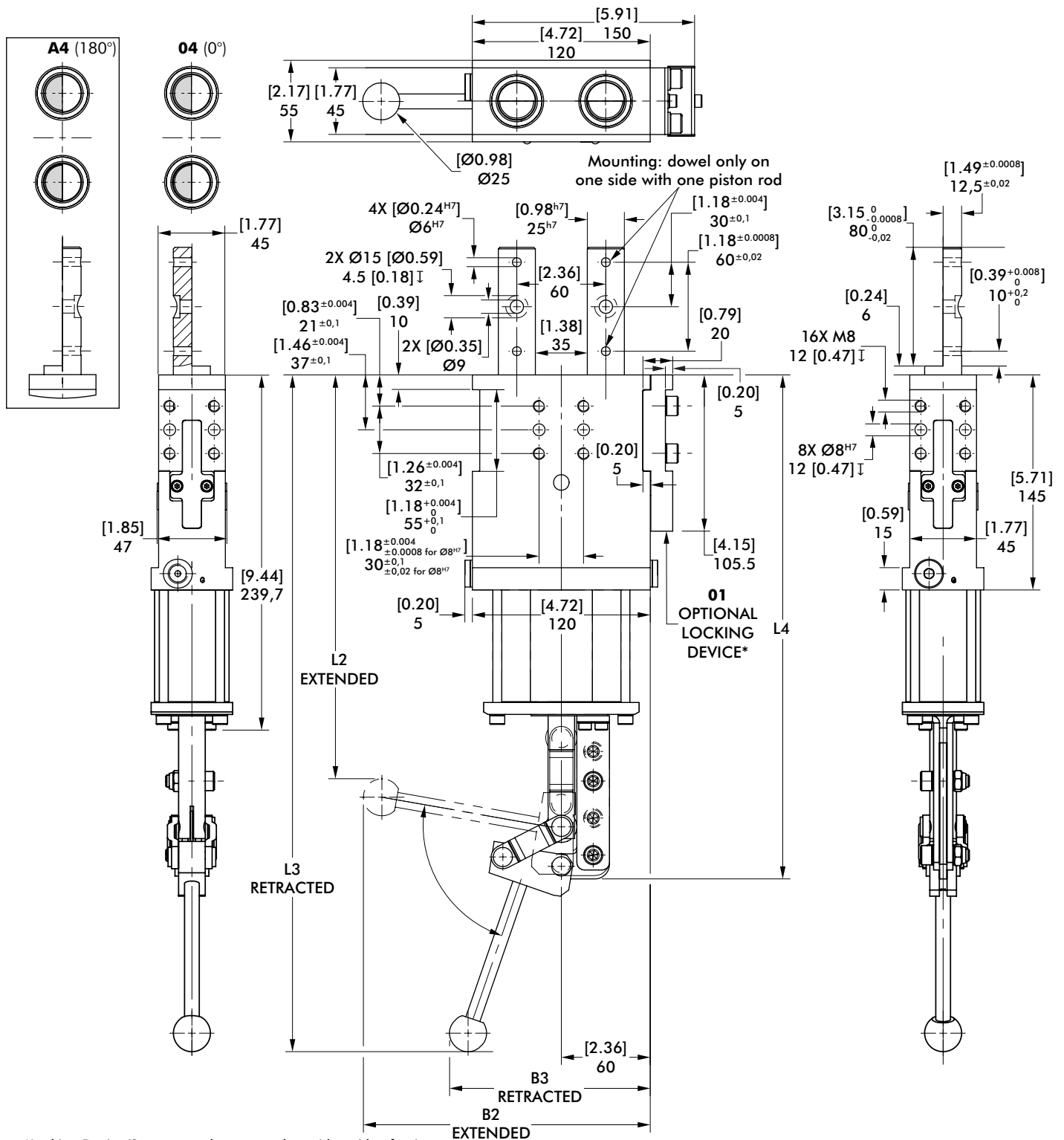
\*Sensors can be mounted on opposite side by customer.



**56D60-1**

Stroke Option: **A, B, C**

## Manual Pin Package | Dual Shaft | Dimensions and Technical Specifications



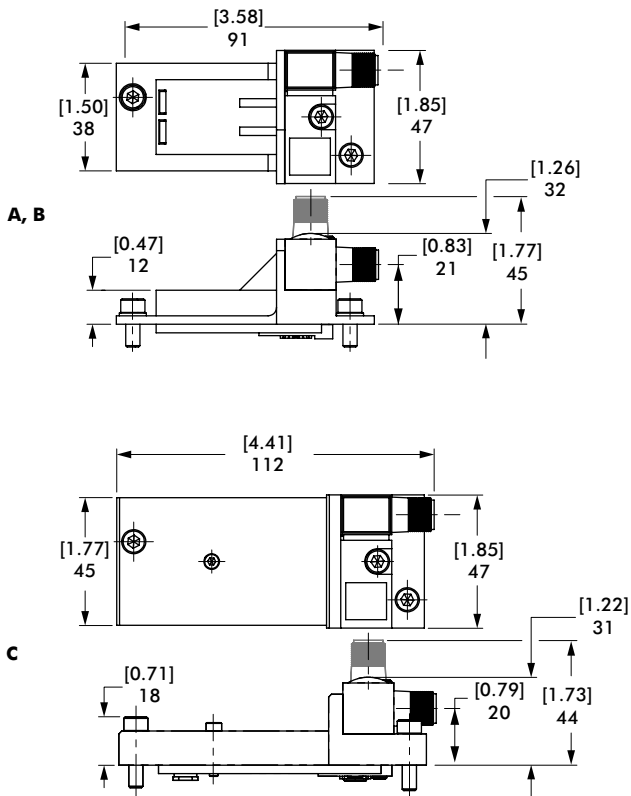
\*Locking Device/Sensors can be mounted on either side of unit.

Base Model	Stroke Option	Stroke +2 [0.08] mm [in]	~B2 (extended) mm [in]	~B3 (retracted) mm [in]	~L2 (extended) mm [in]	~L3 (retracted) mm [in]	~L4	Opening Angle $\alpha$	Weight Kg [lbs]
56D60H1	B	20 [0.79]	193 [7.60]	167 [6.57]	290 [11.42]	450 [17.72]	358 [14.09]	63.3°	5,78 [12.74]
	A	40 [1.57]	196 [7.72]	191 [7.52]	319 [12.56]	432 [17.01]	378 [14.88]	43°	5,79 [12.76]
	C	60 [2.36]	194 [7.64]	136 [5.35]	273 [10.75]	457 [17.99]	340 [13.39]	80.9°	5,76 [12.69]

# 56D60-1 SENSORS

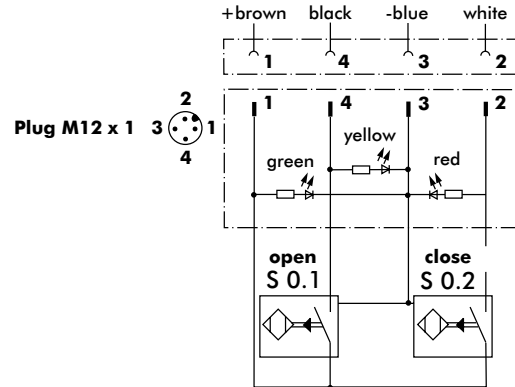
Manual Pin Package | Dual Shaft | Dimensions and Technical Specifications

## D8 Inductive Sensing System with 90° Swivel Connector

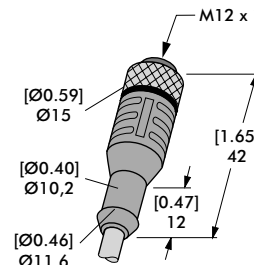


## Inductive Sensor Wiring Diagram

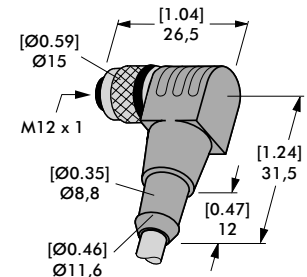
Sensing system immune to interference from AC / DC arc welding.



## Sensor Cable Accessories

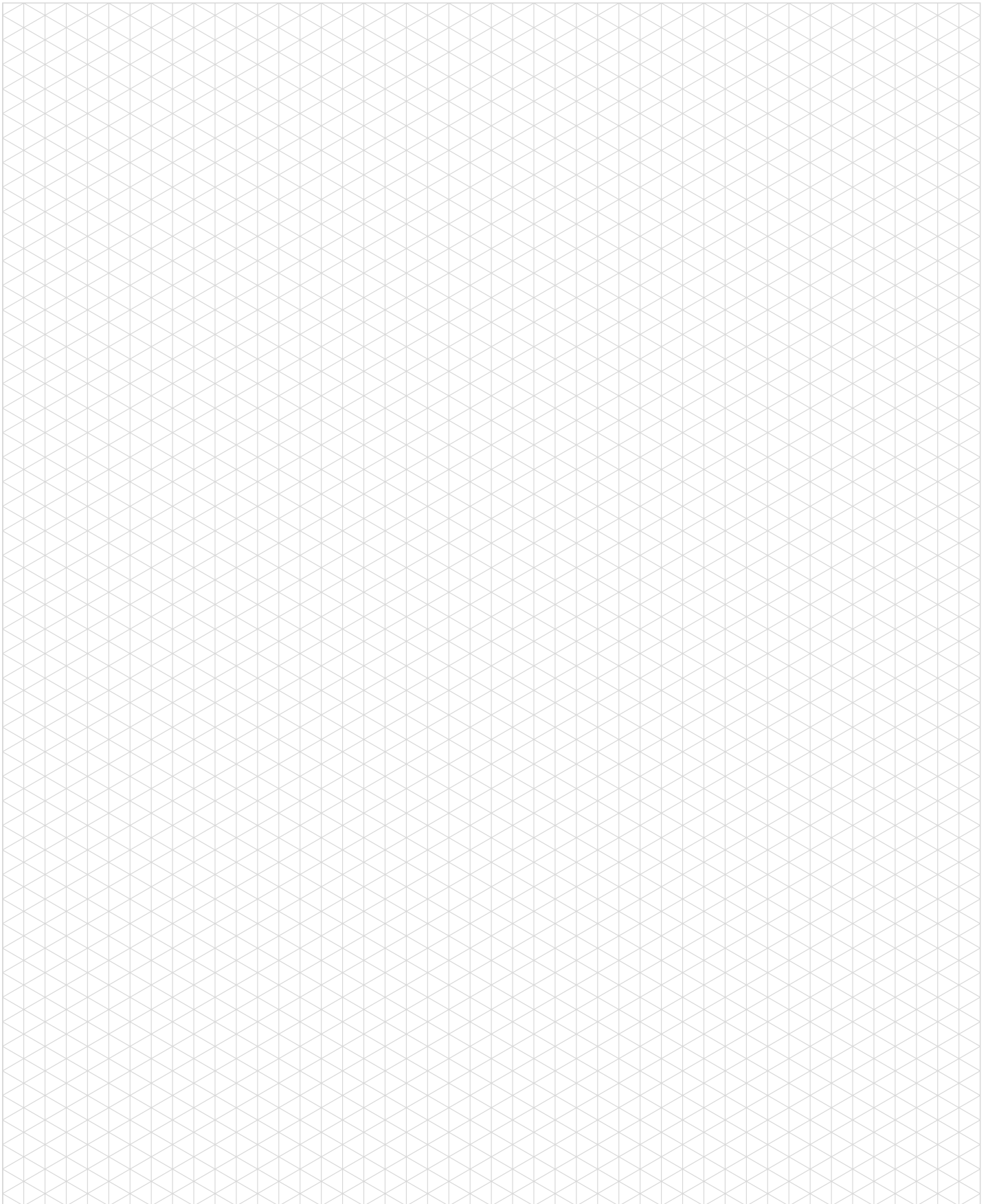


**Straight: 8EL-002-1**



**Angular: 8EL-003-1**

Sensor Cables (1 connector & 5m cable)	Order no.
M12x1 connector, straight, 5-pin	<b>8EL-002-1</b>
M12x1 connector, 90° angular, 4-pin	<b>8EL-003-1</b>



# RCM/RFM

## Pneumatic Pivot Units | Ordering Information

RFM 125 .2 - 129 V/LS PX P N X

**Base** Description  
**RCM** Standard  
**RFM** Integrated Braking

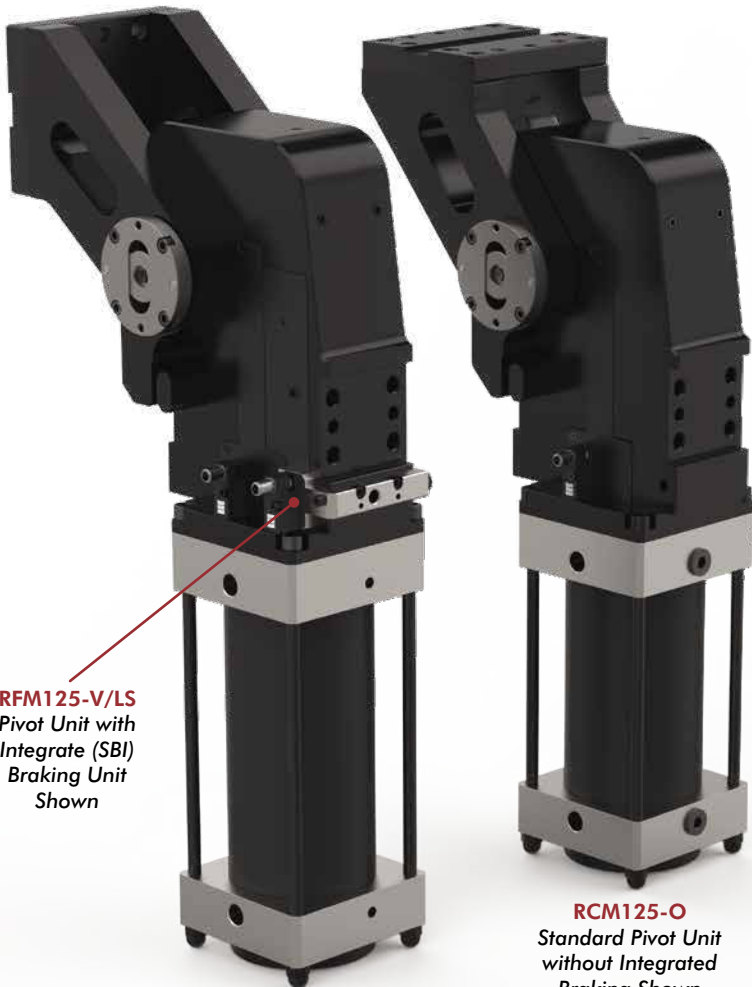
Cylinder	Description
100	100 mm Bore
125	125 mm Bore
160	160 mm Bore
200	200 mm Bore

Opening Angles			
100		125, 160, 200	
O	O/LS	V	V/LS
N/A		15°	
29°		30°	
45°		43°	
61°		61°	
77°		76°	
92°	N/A	92°	
104°	N/A	104°	
121°	N/A	121°	
		91°	N/A
		107°	N/A
		N/A	129°

Opening angles are easily field adjustable.

**Saddle Orientation**  
 O  
 V  
 O/LS  
 V/LS

**Description**  
 Horizontal  
 Vertical  
 Inverted Horizontal  
 Inverted Vertical



**RFM125-V/LS**  
 Pivot Unit with  
 Integrate (SBI)  
 Braking Unit  
 Shown

**RCM125-O**  
 Standard Pivot Unit  
 without Integrated  
 Braking Shown

### RCM Series



RCM100-O RCM125-O RCM160-O RCM200-O

### RFM Series



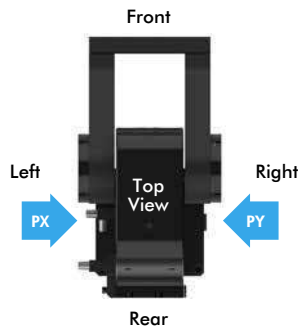
RFM100-V RFM125-V RFM160-V RFM200-V



Ports	Description
N	NPT Ports
G	G Port

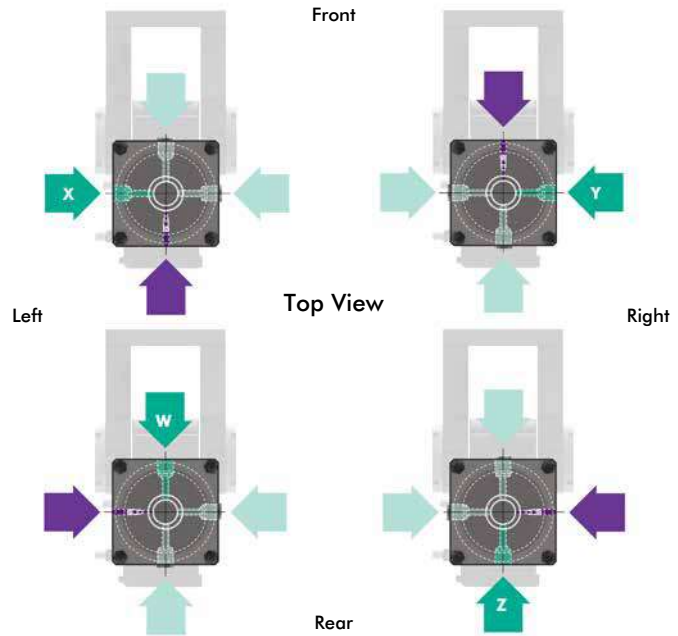
Proximity Switch Type	Description
0	No Proximity Switch
P	Pepperl+Fuchs Proximity Switch

Proximity Switch Location	Description
P0	No Proximity Switch
PX	Proximity Switch on Left-Side
PY	Proximity Switch on Right-Side



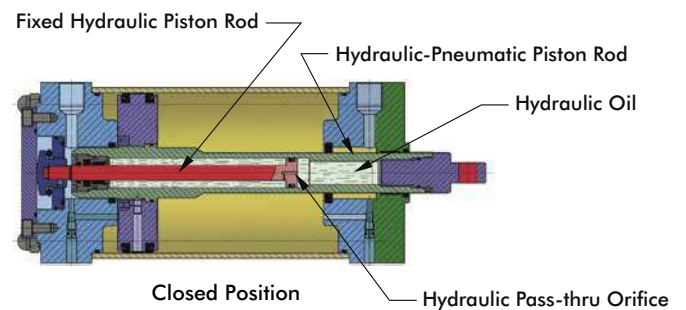
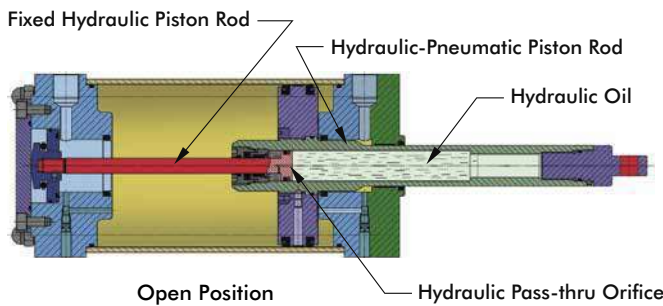
Cylinder Orientation	Description
X	Left-Facing Airport
Y	Right-Facing Airport
W	Front-Facing Airport
Z	Rear-Facing Airport

<span style="color: green;">■</span>	Air Port
<span style="color: lightgrey;">■</span>	Air Ports Plugged
<span style="color: purple;">■</span>	Cushion Adjustment



### Cylinder Operating Principle

The RFM/RCM series pivot units uses a combined pneumatic and hydraulic cylinder, using a hydraulic/pneumatic piston rod within the standard pneumatic cylinder structure. This will allow for standard pneumatic operation while providing shock absorption or dampening in heavy duty applications during opening and closing positioning.

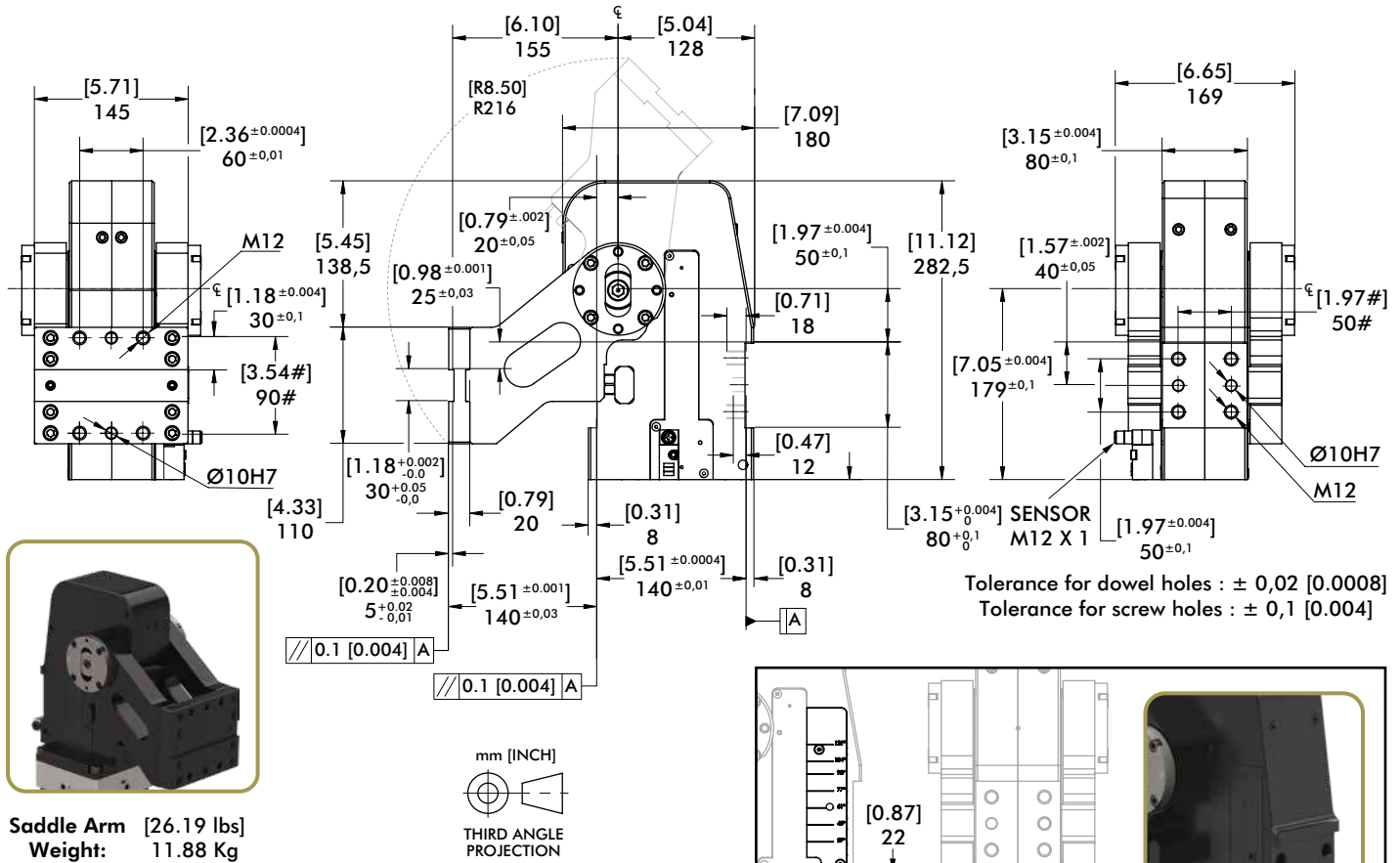


Specifications	Units	100	125	160	200
Max Torque by Load [5 bar] Opening Angle $\leq 92^\circ$	Nm [ft-lbs]	150 [111]	240 [171]	410 [302]	660 [487]
Max Torque by Load [5 bar] Opening Angle $> 92^\circ / \leq 121^\circ$	Nm [ft-lbs]	110 [81]	180 [133]	300 [221]	480 [354]
Max Torque by Load [5 bar] Opening angle $> 121^\circ$	Nm [ft-lbs]	55 [41]	65 [48]	100 [74]	175 [129]
Holding Moment	Nm [ft-lbs]	2000 [1475]	3500 [2581]		
RCM Weight	kg [lbs]	~27 [60]	~61 [134]	~74 [163]	~81 [178]
RFM Weight	kg [lbs]	~30 [66]	~64 [141]	~77 [169]	~84 [185]

# RCM/RFM

## Pneumatic Pivot Units | Dimensions

### RCM/RFM100 Vertical "V" Orientation Pivot Dimensions

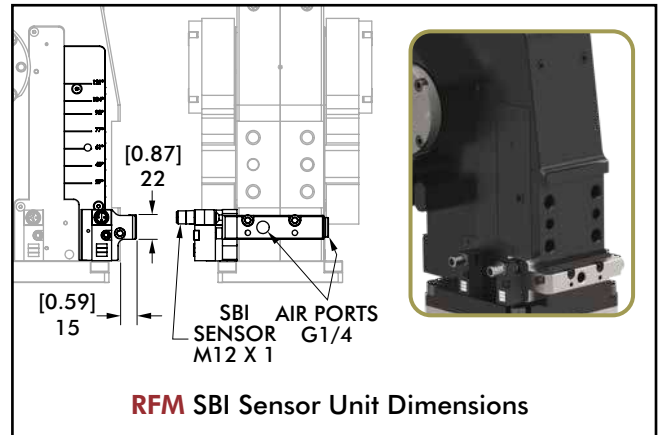
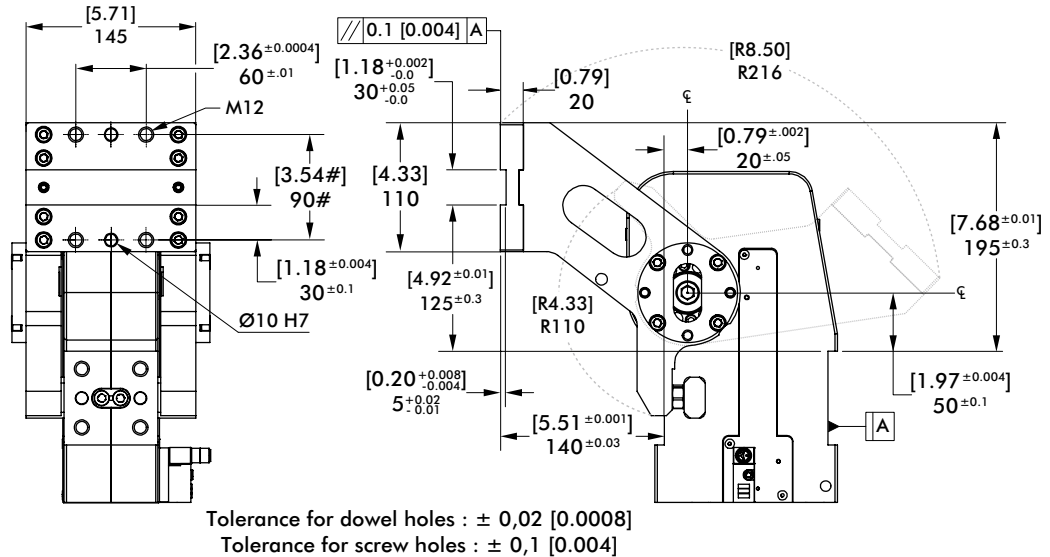


### RCM/RFM100 Vertical "V/LS" Orientation Pivot Dimensions



**Saddle Arm** [27.38 lbs]  
**Weight:** 12.42 Kg

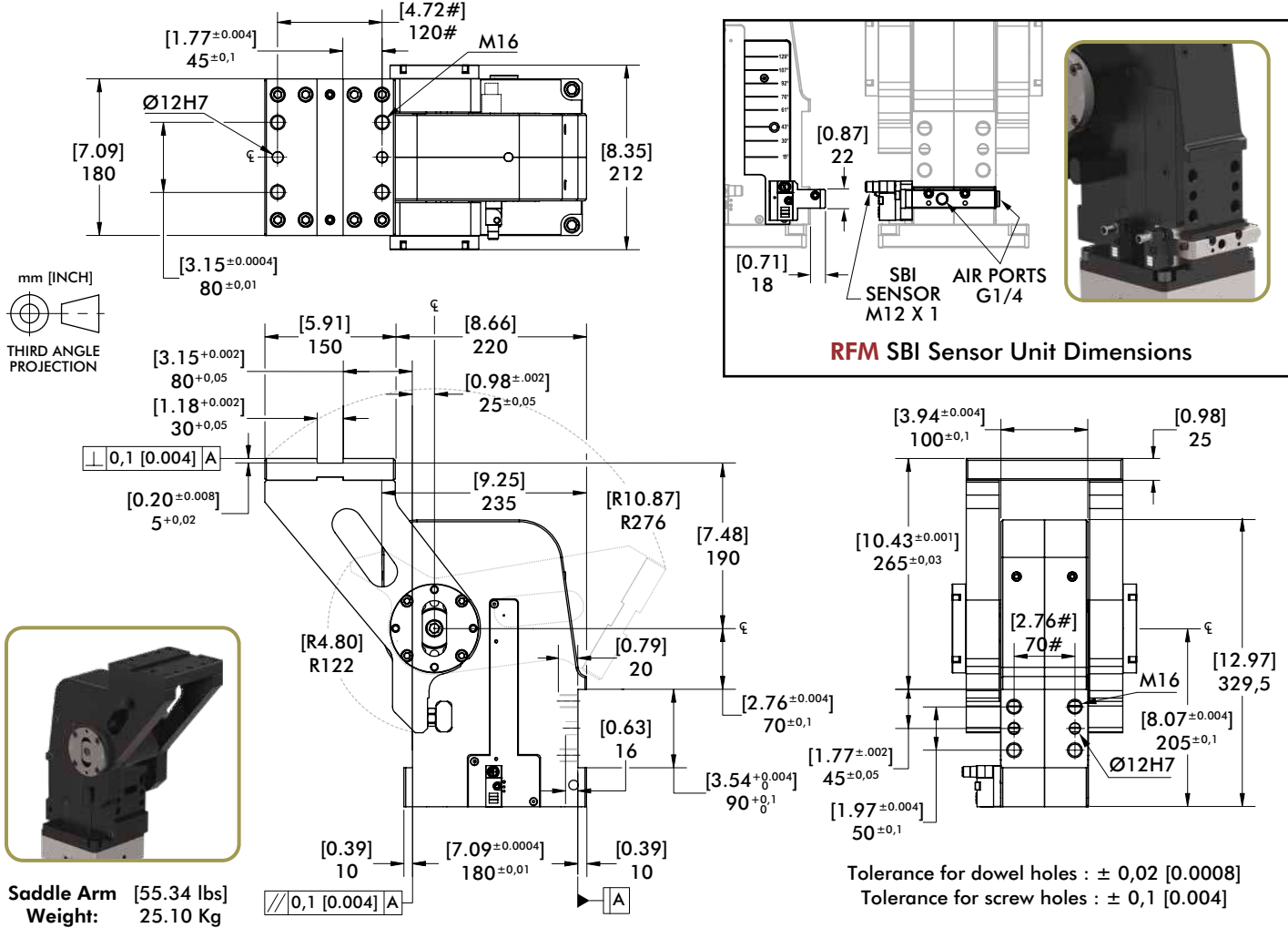
mm [INCH]  
 THIRD ANGLE PROJECTION



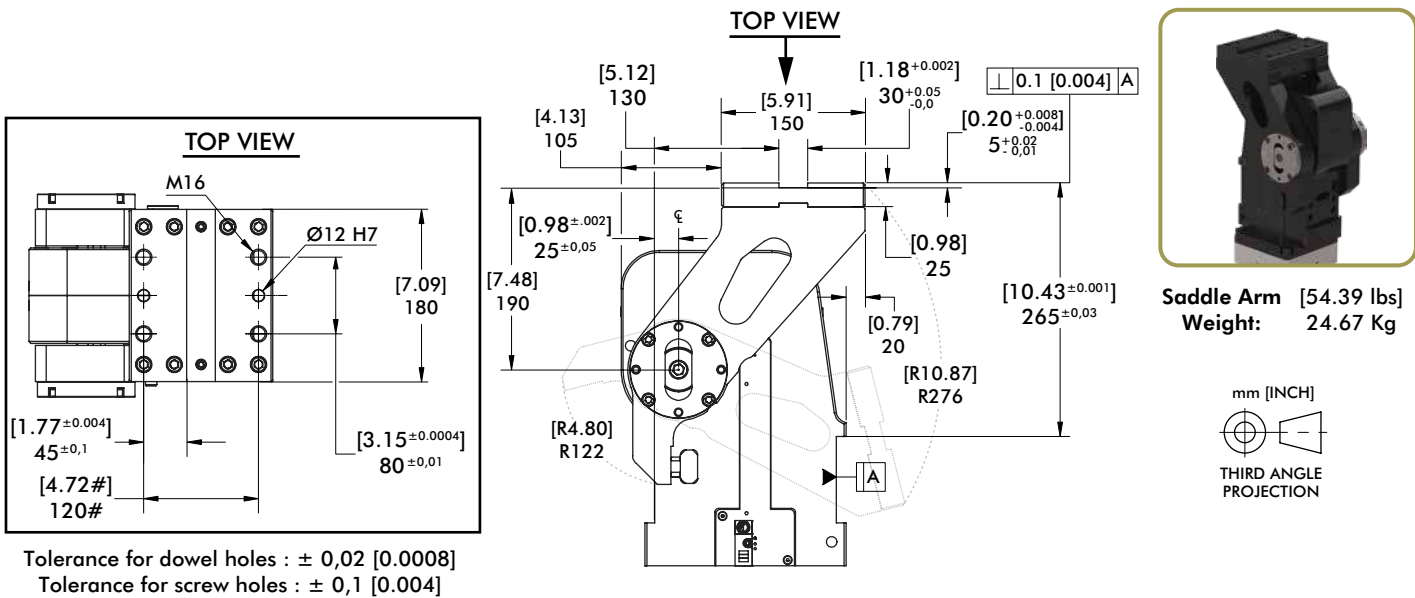




### RCM/RFM125, 160, 200 Horizontal "O" Orientation Pivot Unit and Saddle Dimensions

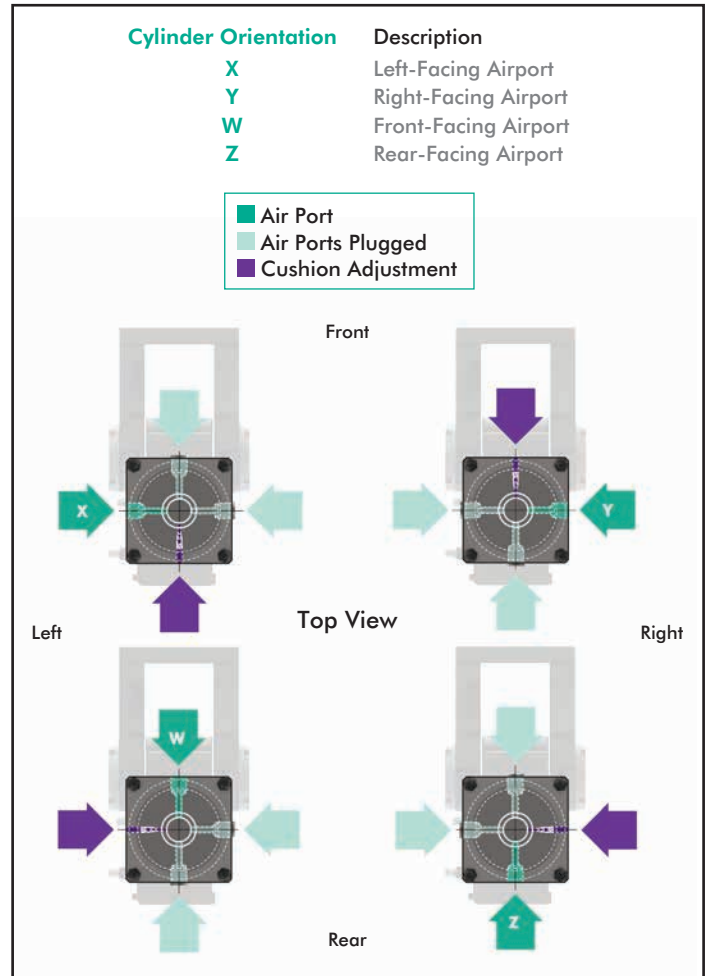
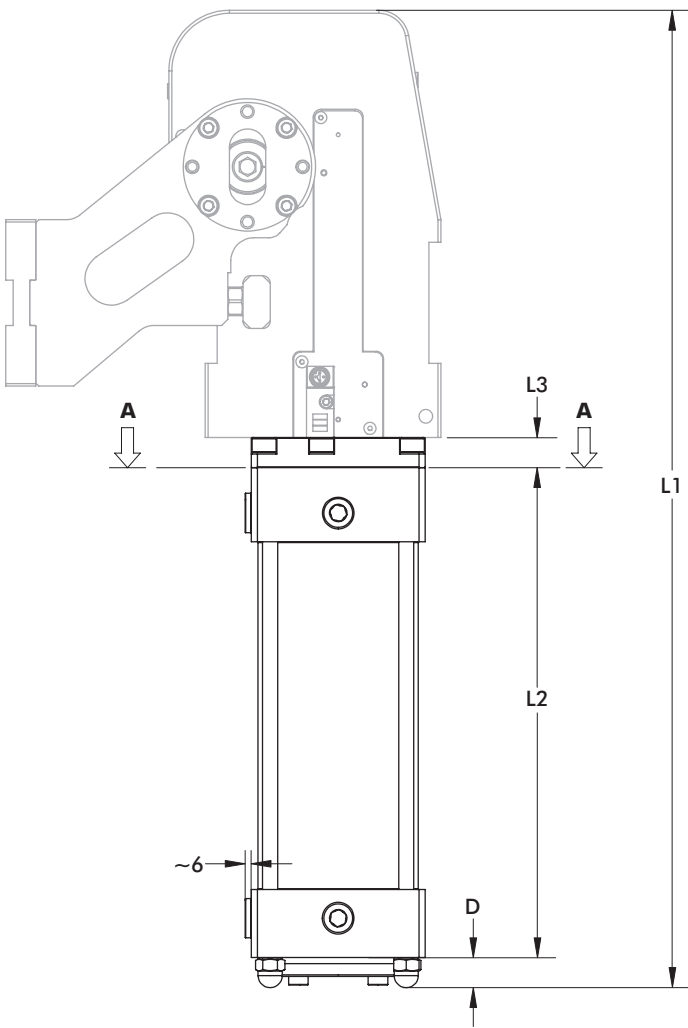


### RCM/RFM125, 160, 200 Horizontal "O/LS" Orientation Saddle Dimensions

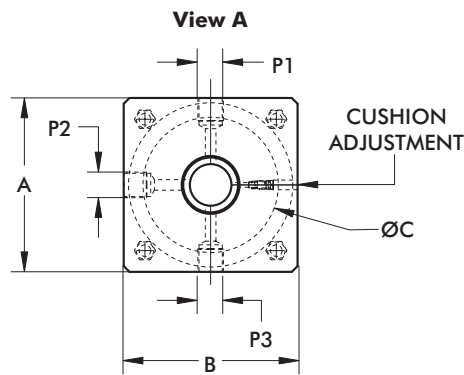


# RCM/RFM

## Pneumatic Pivot Units | Cylinder Dimensions

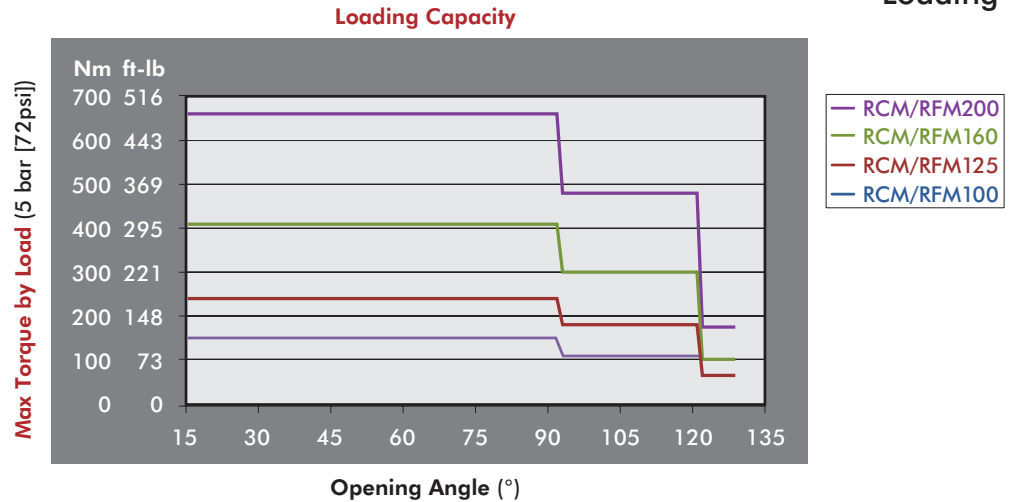


mm [INCH]  
THIRD ANGLE PROJECTION



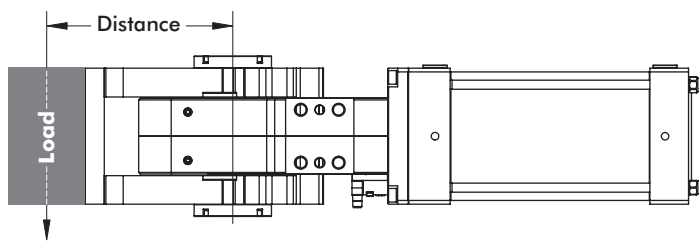
For Models	A	B	C	D	L1	L2	L3	P1-P3
RCM/RFM100.2	[4.53] 115	[4.53] 115	[3.94] 100	[0.75] 19	[25.41] 645,5	[12.76] 324	[0.79] 20	[1/2NPT] G1/2
RCM/RFM125.2	[6.30] 160	[6.30] 160	[4.92] 125	[0.91] 23	[29.17] 741	[14.35] 364,5	[0.94] 24	[3/4NPT] G3/4
RCM/RFM160.2	[7.09] 180	[7.09] 180	[6.30] 160	[0.75] 19	[29.55] 750,5	[14.59] 370,5	[1.08] 27,5	[3/4NPT] G3/4
RCM/RFM200.2	[8.66] 220	[8.66] 220	[7.87] 200	[0.75] 19	[29.70] 754,5	[14.82] 376,5	[1.16] 29,5	[3/4NPT] G3/4

### Loading Capacity



Model	Max. Torque by Load Nm [ft-lb]								
	Opening Angle ≤ 92°			Opening Angle > 92° / ≤ 121°			Opening Angle > 121°		
	4 bar [58 psi]	5 bar [72 psi]	6 bar [87 psi]	4 bar [58 psi]	5 bar [72 psi]	6 bar [87 psi]	4 bar [58 psi]	5 bar [72 psi]	6 bar [87 psi]
RCM/RFM100.2	120 [89]	150 [111]	190 [140]	90 [66]	110 [81]	130 [96]	45 [33]	55 [41]	65 [48]
RCM/RFM125.2	180 [133]	240 [177]	290 [214]	140 [103]	180 [133]	210 [155]	55 [41]	65 [48]	80 [59]
RCM/RFM160.2	320 [236]	410 [302]	500 [369]	260 [192]	300 [221]	360 [266]	85 [63]	100 [74]	125 [92]
RCM/RFM200.2	510 [376]	660 [487]	800 [590]	380 [280]	480 [354]	570 [420]	130 [96]	175 [129]	210 [155]

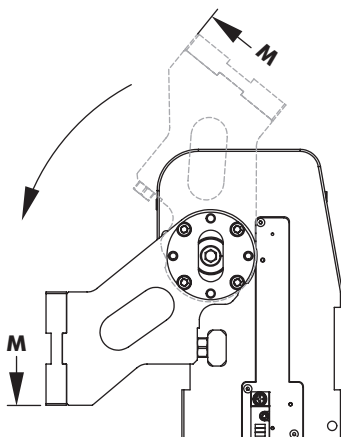
### Side Loading Capacity



Max. applicable load with swivel unit positioned on its side (6 bar [87 psi])

Models	Max. Torque by Load @ 6 bar [87 psi] Nm [ft-lb]
RCM/RFM100.2	[59] 80
RCM/RFM125.2	
RCM/RFM160.2	[148] 200
RCM/RFM200.2	

### Angular Speed Limitation



To avoid elevated angular speed it's necessary to respect the min. times among the electric signal of opening and that of closing brought in tab.

If don't respect the value report in tab, the device may break.

Model	Least Time Between Opening Electric Signal & Closing (Seconds) @ 6 bar [87 psi]				
	45°	76°	91°	121°	129°
RCM/RFM100.2	0.6	0.9	1.0	1.2	1.5
RCM/RFM125.2	0.8	1.1	1.2	1.4	1.7
RCM/RFM160.2	0.9	1.2	1.3	1.5	1.8
RCM/RFM200.2	1.4	1.7	1.8	2.1	2.5

# RCM/RFM

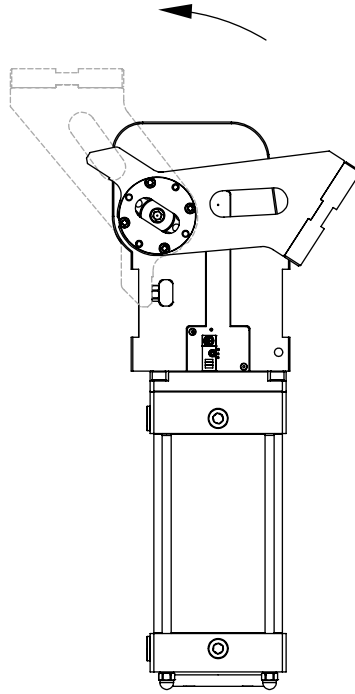
## Pneumatic Pivot Units | Time Diagrams

### Closing Operation

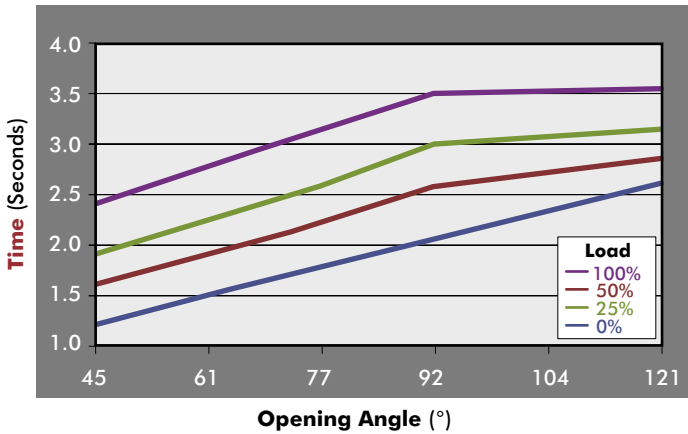
Working Pressure: 5 bar [72 psi]

Arm Type: O (shown)

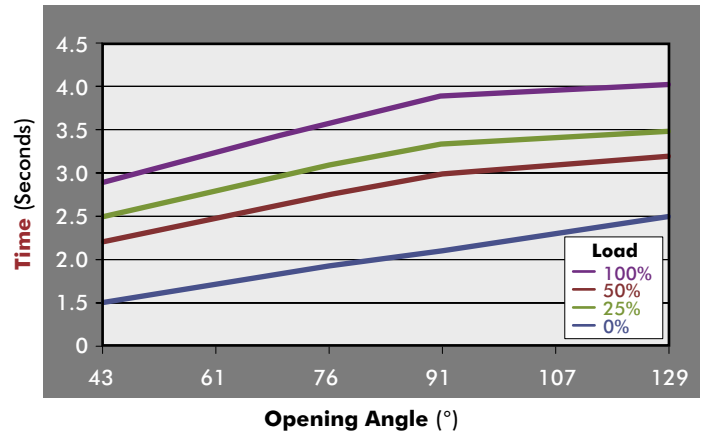
Swivel Unit Position: Vertical (shown)



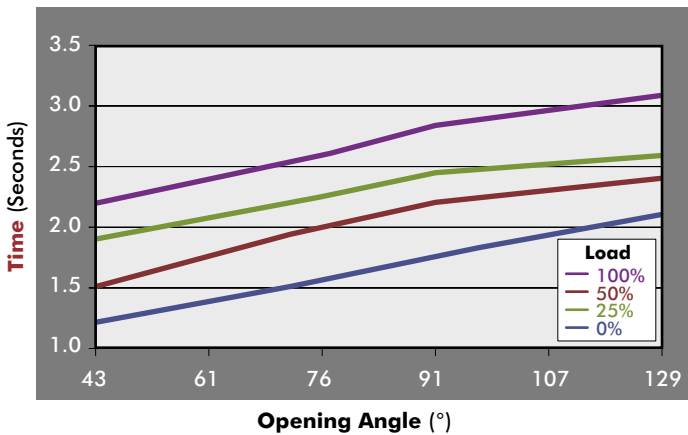
**RFM/RCM100.2**



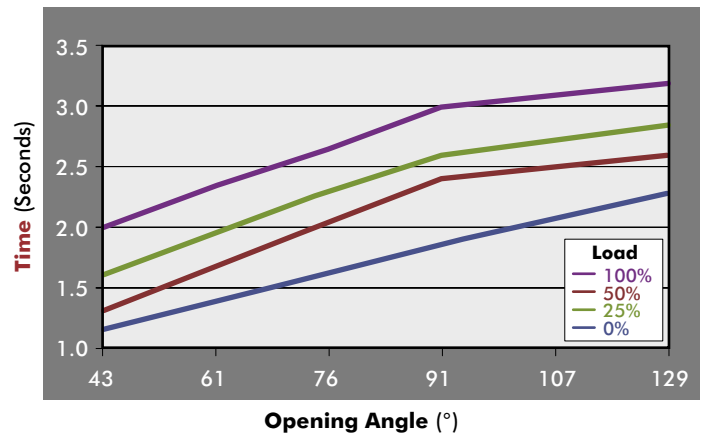
**RFM/RCM125.2**



**RFM/RCM160.2**



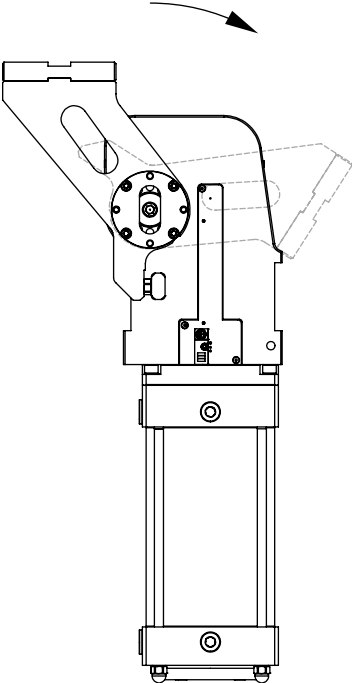
**RFM/RCM200.2**



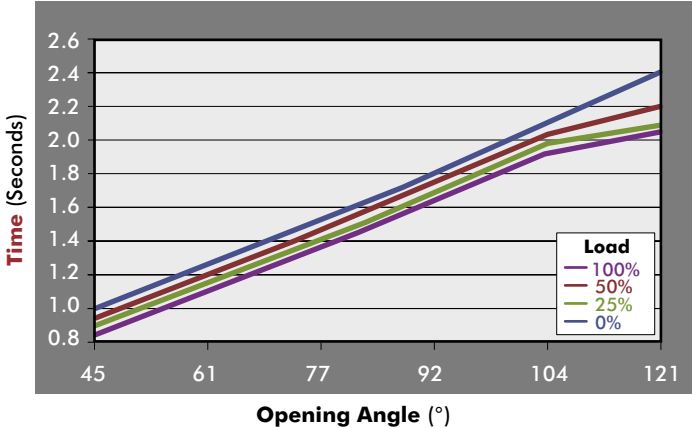


### Opening Operation

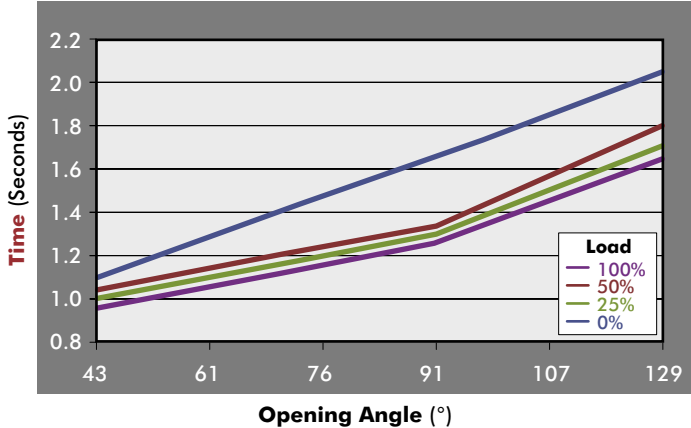
Working Pressure: 5 bar [72 psi]  
Arm Type: O (shown)  
Swivel Unit Position: Vertical (shown)



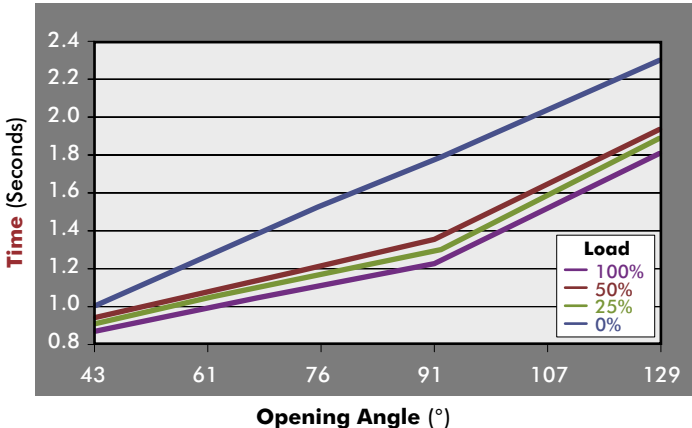
**RFM/RCM100.2**



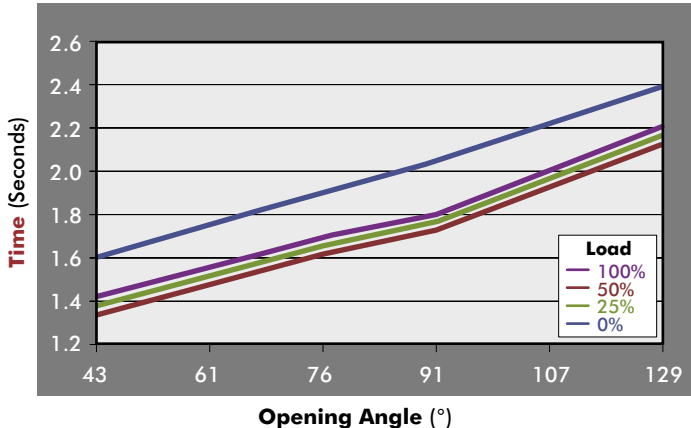
**RFM/RCM125.2**



**RFM/RCM160.2**



**RFM/RCM200.2**



# RCM/RFM

## Pneumatic Pivot Units | Sensor Technical Specifications

### Open/Close Sensor

**Proximity Switch Type:\*** Pepperl+Fuchs  
**Feeding Voltage:** 10-30 VDC  
**Max. Commutating Current:** 200 mA  
**Power Supply:** < 20mA  
**Voltage Drop:** < 2 V  
**Temperature Range:** -25° / 70° C

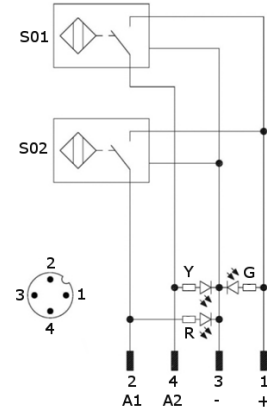


Pepperl+Fuchs

### Pepperl+Fuchs

for Model	Power Amplifier (1)	Sensor's Satellite (2)	Complete Inductive Switch
RCM/RFM100.2	3/413	3/417	RFMSI – 1.2/A
RCM/RFM125.2			RFMSI – 125.2/A
RCM/RFM160.2			RFMSI – 160.2/A
RCM/RFM200.2			RFMSI – 200.2/A

**S01 = Opening Signal**  
**S02 = Closing signal**  
**Y = Yellow LED**  
**G = Green LED**  
**R = Red LED**  
**1 = Brown Wire**  
**2 = Black Wire**  
**3 = Blue Wire**  
**4 = White Wire**



### Integrated Locking Sensor (SBI)

**Locking Sensor Type:\*** Pepperl+Fuchs  
**Output Type:** PNP  
**Feeding Voltage:** 10-30 VDC  
**Max. Commutating Current:** 200 mA  
**Power Supply:** < 25mA  
**Voltage Drop:** < 2 V  
**Temperature Range:** -25° / 70° C

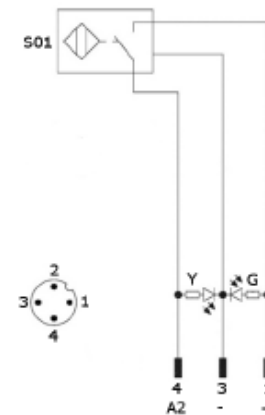


Pepperl+Fuchs

### Pepperl+Fuchs

for Model	Sensor Type
RFM100.2	RF1 – BIF
RFM125.2	RF2 – BIF
RFM160.2	
RFM200.2	

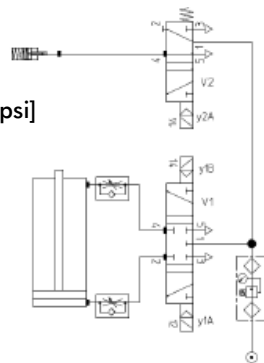
**S01 = Opening Signal**  
**Y = Yellow LED**  
**G = Green LED**  
**1 = Brown Wire**  
**3 = Blue Wire**  
**4 = White Wire**



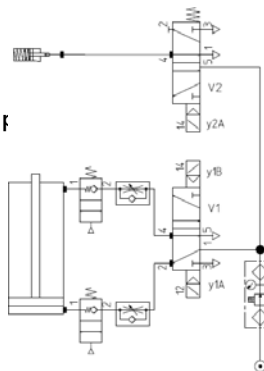
\*Proximity switch and locking sensor types cannot be mixed.

### Pneumatic Control Diagrams

**Control Valve: 5/3**  
**Pressure Range: 4-8 bar [58-116 psi]**



**Control Valve: 5/2**  
**Pressure Range: 4-8 bar [58-116 psi]**



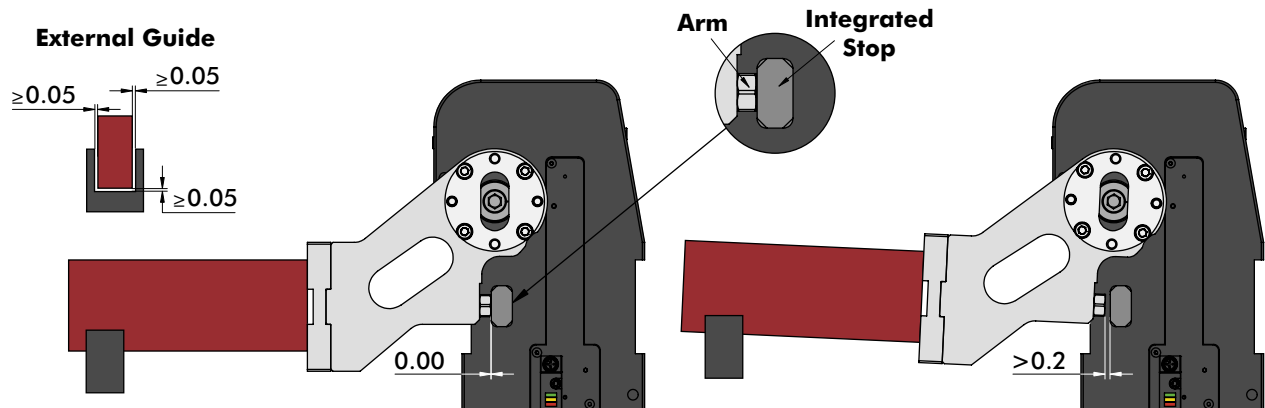
### Air Consumption

Model	Opening Angle (°)	Air consumption @ 5 bar [72 psi] litre [ft3]	Air Consumption @ 6 bar [87 psi] litre [ft3]
RCM/RFM100.2	29°	5,9 [167]	6,9 [195]
	77°	10,3 [292]	12,1 [343]
	121°	14,3 [405]	16,7 [473]
RCM/RFM125.2	15°	7,9 [224]	9,2 [261]
	76°	18,0 [510]	21,0 [595]
	107°	22,4 [634]	26,2 [742]
RCM/RFM160.2	129°	24,7 [699]	28,8 [816]
	15°	14,2 [402]	16,6 [470]
	76°	31,0 [878]	36,2 [1025]
RCM/RFM200.2	107°	38,5 [1090]	44,9 [1271]
	129°	42,2 [1195]	49,3 [1396]
	15°	20,8 [589]	24,3 [688]
RCM/RFM200.2	76°	47,4 [1342]	55,3 [1566]
	107°	59,2 [1676]	69,1 [1957]
	129°	65,1 [1843]	76,0 [2152]

### Shock Absorber, External Stop Guide Usage

Make sure that the swivel unit makes the complete stroke until the closing position is reached (0°). Any interference with external bodies can cause serious damage to the device and to the equipment mounted on it.

**Note:** The use of external stops and shock absorbers is not recommended as they can have negative effects on the life of the unit.



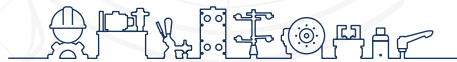
**CORRECT USE:** Integrated Stop is properly used. The distance between the arm and the Integrated Stop = [0.00] 0,00

**INCORRECT USE:** External Stop being used does not allow the arm to reach a 0° position. The distance between the arm and the Integrated Stop is greater than [0.008] 0,2

If External Guides are used, the following points must be guaranteed:

- The swivel unit must fully reach the closed position
- The above measures for External Guides must be maintained
- They must not be used as External Stops

If the points indicated above are not followed, we reserve the right to void the warranty.



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