

Series **86P40-2, 86P60-2** Product Overview

Pneumatic pin packages, single units

Models: **86P40-2**  
**86P60-2**

**Application:**

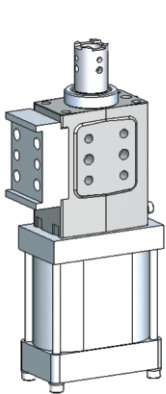
Accurate positioning of sheet metal parts in welding equipment and handling systems. At the end of the welding process, the pins are retracted from the pin holes. The component can thus be easily removed from the jig.

**Key areas of application:**

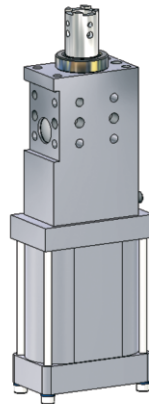
Automotive manufacturing, sheet processing industry, jig and general mechanical engineering.

**Features:**

- Compact, low weight design
- High accuracy due to twin piston rod guide
- Lateral and front-face mounting areas
- Length of stroke: 20, 40 and 60 mm
- Various mounting bases for centering pin including precision bore holes and grooves or integrated thread
- Inductive sensing module with LED display



**86P60-202L4H14**  
with adaptor



**86P60-202L6006**  
stroke 60 mm

Order no. for **86P40/60-2** pin packages

Example Model no.: **86P40 - 2 02 C8 00 A - K** ————— **K = ceramic coated pin**

**86P40-2**      **86P60-2**

H1 (optional to make up for 86P6-1...)

**Base model**

**02** = piston rod adaptor  
Ø 16 mm, cross groove  
**8MS-104-1**

**05** = piston rod adaptor  
Ø 10 mm, cross groove  
**8MS-108-1**

**Piston rod adaptor**

**L4** (stroke 20/40) =  
without sensing system,  
cover plate  
**86PO-200L4**

**L6** (stroke 60) =  
without sensing system,  
cover plate  
**86PO-200L6**

**C8** =  
with sensing system  
**86PO-200C8**  
(for stroke 20/40)  
**86PO-200C8006**  
(for stroke 60)

**D8** =  
with sensing system  
**86PO-200D8**  
(for stroke 20 / 40)  
**86PO-200D8006**  
(for stroke 60)

**C6** = with sensing  
system  
**86PO-200C6**  
(for stroke 20 / 40)  
**86PO-200C6006**  
(for stroke 60)

**Inductive sensing system**

**00** = without accessories

**E1** =  
(only with A or B)  
**E2** = (only with C)  
external guide

**F1** =  
Bellow  
**82ZB-013-3**  
(for stroke 20/40)

**G1** =  
Bellow/Adaptor  
(for stroke 20/40)

**H1** =  
Adaptor  
**86PO-2000H1**

**J1** =  
(only with A and B)  
external guide  
Adaptor  
**86PO-20000J1**

**Accessories**

**A** = 40 mm stroke  
**C** = 60 mm stroke  
Anti - twist device  
low accuracy  
**8CE-231-1**

**B** = 20 mm stroke  
Anti - twist device  
low accuracy  
**8MF-071-1**

**2** = 20 mm stroke  
Anti - twist device  
**86PO-20000002**

**4** = 40 mm stroke  
Anti - twist device  
**86PO-20000004**

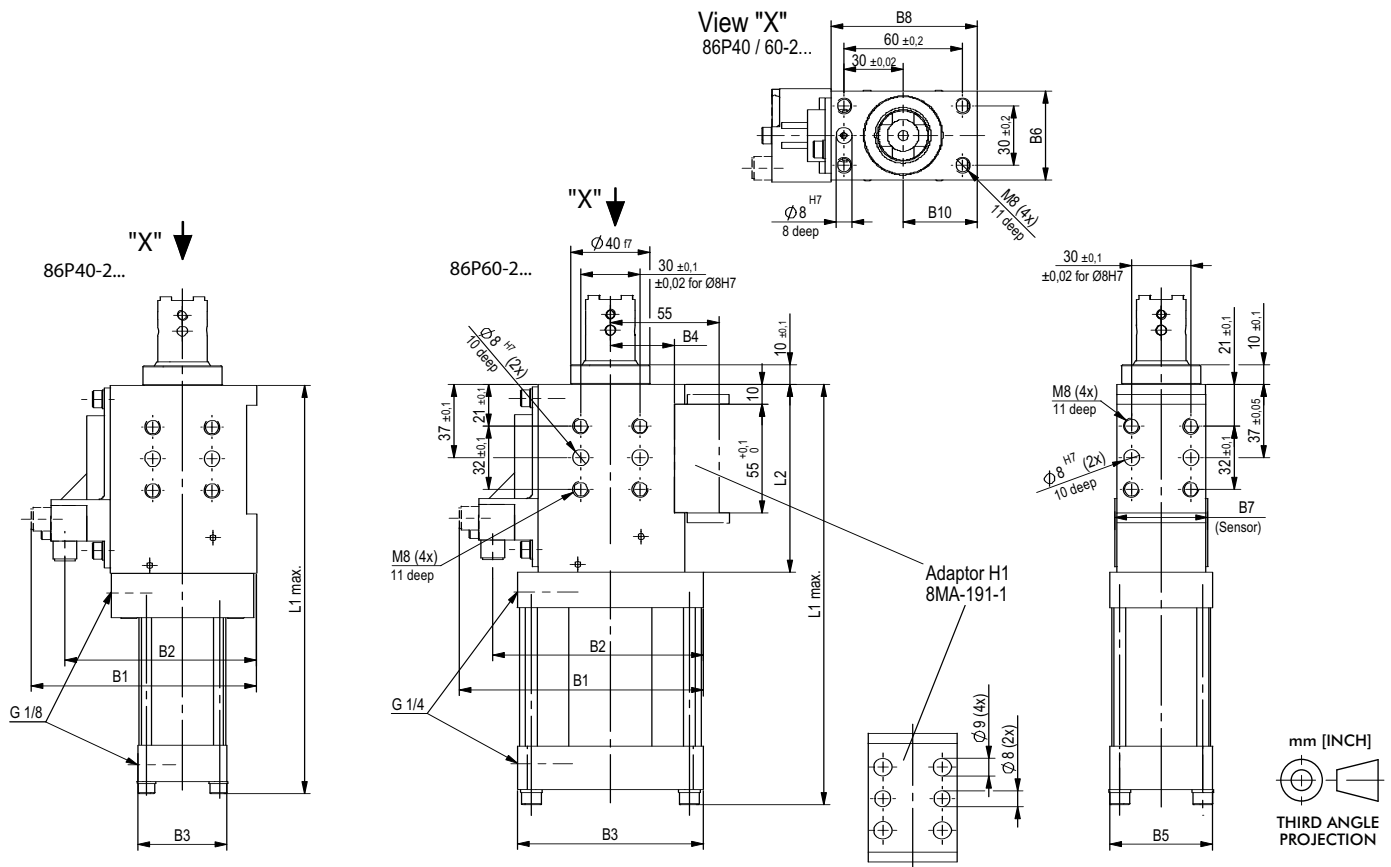
**6** = 60 mm stroke  
Anti - twist device  
**86PO-20000006**

**Instructions**

Series 86P40/60-2 Technical Information

Model no.		Pushing force at 5 bar N [lbs]	Retraction force at 5 bar N [lbs]	Max. operating pressure bar [psi]	Piston Ø mm [in]	Stroke +2 mm [in]	Weight Kg [lbs]	Air consumption per double stroke at 5 bar dm <sup>3</sup> [ft <sup>3</sup> ]
w/o sensing	with inductive sensing connector M12x1 w/ lead							
86P40-2...L4...	86P40-2..._8...	620 [139]	520 [117]	6 [87]	40 [1.57]	20 [0.79]	1,6 [3.52]	0,5 [0.02]
86P40-2...L4...	86P40-2..._8...	620 [139]	520 [117]	6 [87]	40 [1.57]	40 [1.57]	1,6 [3.52]	0,7 [0.02]
86P40-2...L6...	86P40-2..._8...	620 [139]	520 [117]	6 [87]	40 [1.57]	60 [2.36]	2,0 [4.84]	0,9 [0.04]
86P60-2...L4...	86P60-2..._8...	1550 [348]	1400 [315]	6 [87]	63 [2.48]	20 [0.79]	2,0 [4.40]	0,8 [0.02]
86P60-2...L4...	86P60-2..._8...	1550 [348]	1400 [315]	6 [87]	63 [2.48]	40 [1.57]	2,0 [4.40]	1,4 [0.05]
86P60-2...L6...	86P60-2..._8...	1550 [348]	1400 [315]	6 [87]	63 [2.48]	60 [2.36]	2,6 [5.72]	2,0 [0.08]

Series 86P40-2, 86P60-2 Standard Pin Package Dimensions

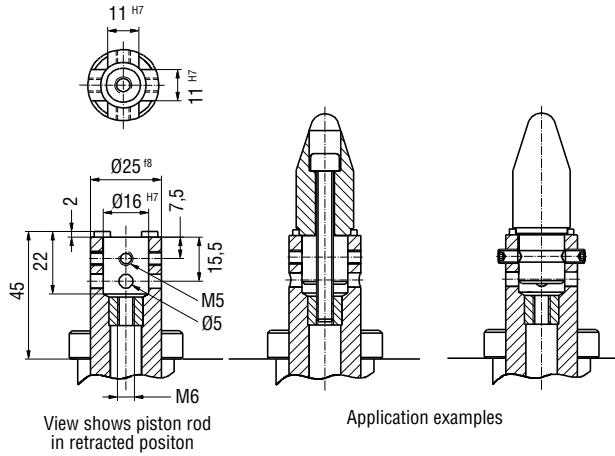


Medium: Operation with oil free air permissible

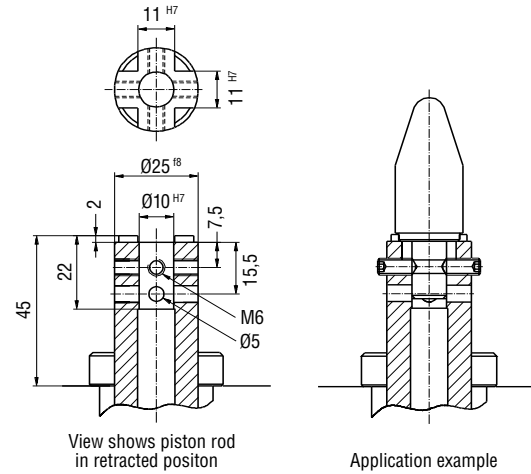
Model no.		B1	B2	B3	B4 + 0,02	B5	B6	B7	B8	B10	L1 max.	L2
w/o sensing	with inductive sensing connector M12x1 w/ lead											
86P40-2...L4...	86P40-2..._8...	114	97	45	32,5	45	45	47	74	37,5	207	95
86P40-2...L4...	86P40-2..._8...	114	97	45	32,5	45	45	47	74	37,5	207	95
86P40-2...L6...	86P40-2..._8...	114	97	45	32,5	45	45	47	74	37,5	247	115
86P60-2...L4...	86P60-2..._8...	124	107	94	32,5	52	45	47	74	37,5	213	95
86P60-2...L4...	86P60-2..._8...	124	107	94	32,5	52	45	47	74	37,5	213	95
86P60-2...L6...	86P60-2..._8...	124	107	94	32,5	52	45	47	74	37,5	253	115

Series **86P40-2, 86P60-2** Accessories

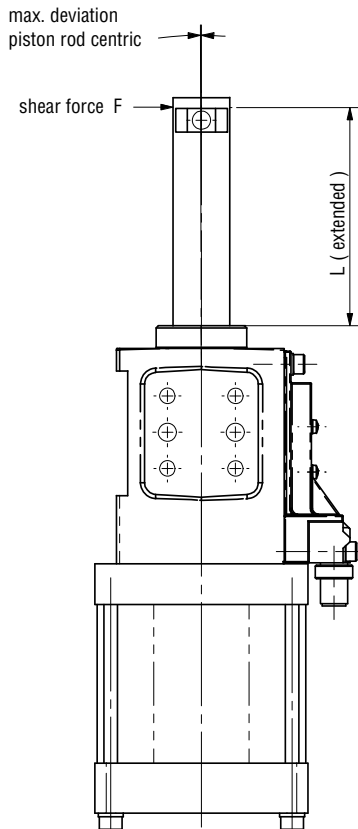
Piston Rod Model **-202** Detail mounting base  $\varnothing 16$  mm for **86P40-2, 86P60-2**



Piston Rod Model **-205** Detail mounting base  $\varnothing 10$  mm for **86P40-2, 86P60-2**



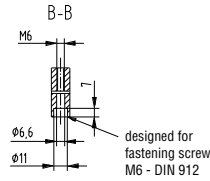
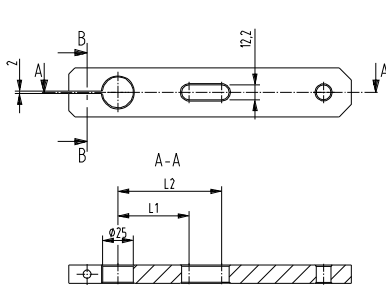
Max deflection for centering pin for **86P40-2, 86P60-2**



Model no.	Sheer force N [lbs]	L mm [in]	Stroke mm [in]	Deviation mm [in]
<b>86P40 / 60-2...B / 2</b>	200 [45]	52 [2.0]	20 [0.08]	0,06 [0.002]
<b>86P40 / 60-2...A / 4</b>	200 [45]	70 [2.8]	40 [1.60]	0,09 [0.004]
<b>86P40 / 60-2...C / 6</b>	200 [45]	90 [3.5]	60 [2.40]	0,12 [0.007]

**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 ).

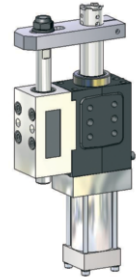
Example application of an off-center centering pin for 86P40-2, 86P60-2



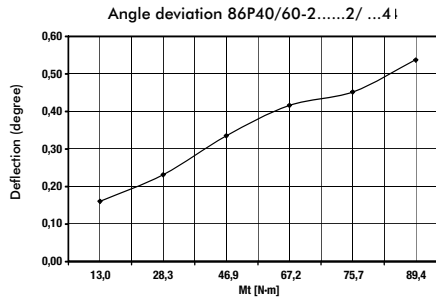
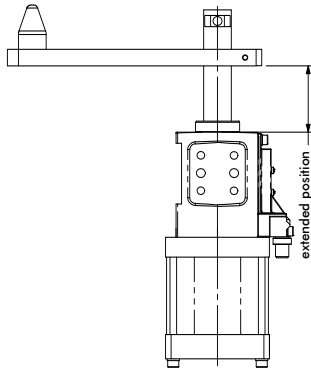
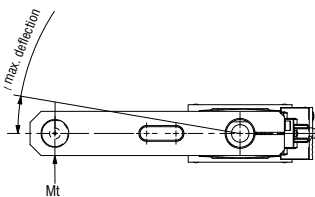
The component shown in this example is to be made by the customer

Model no.	L1	L2
86P40/60-2...E1 86P40/60-2...E2	58	62
86P40/60-2...J1*	80,5	84,5

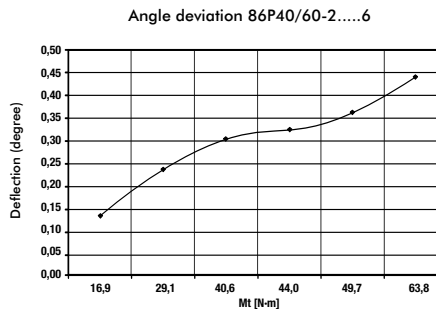
\* J1 is not available with stroke 60 mm.



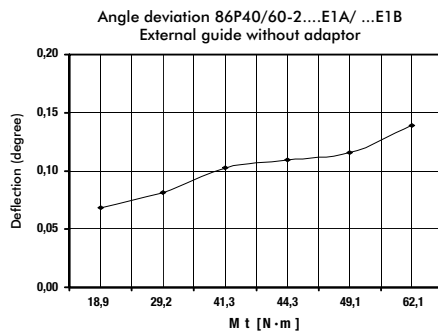
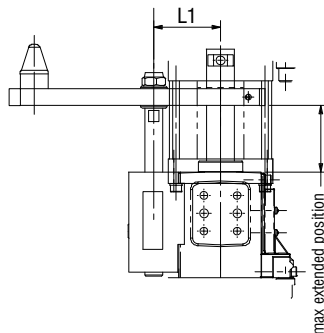
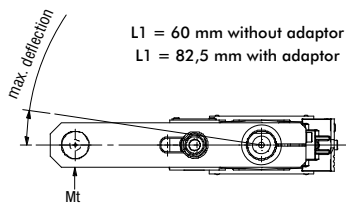
Internal anti-rotation device



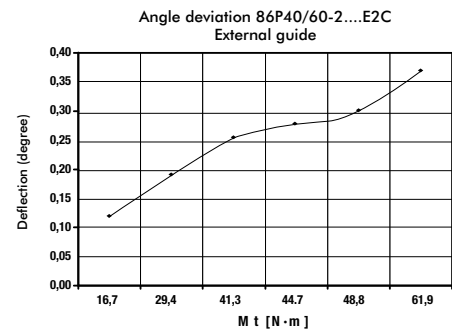
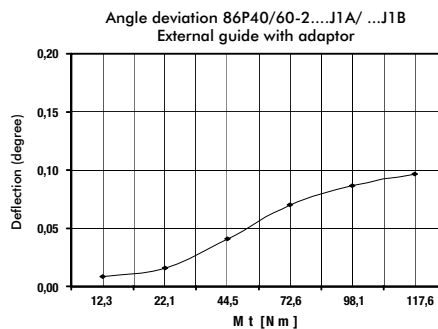
**Caution:** Generally we recommend using an external guide when the transverse force is more than 200 N [45 lbs]. Also independently of the stroke, less transverse forces, when the overall height L2 > 120 mm [4.7 in] (L2 = extended piston rod plus centering pin).



External guide 82ZB-009-2, 82ZB-010-2, 82ZB-090-1

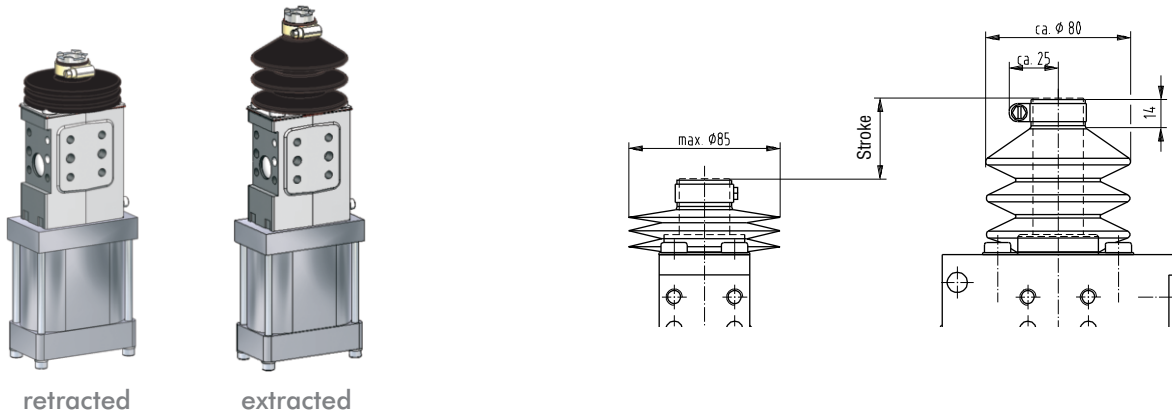




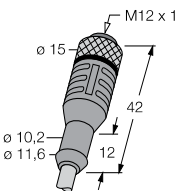
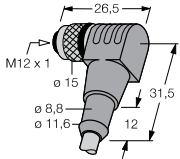
**Caution:** Generally we recommend using an external guide when the transverse force is more than 200 N [45 lbs]. Also independently of the stroke, less transverse forces, when the overall height L2 > 120 mm [4.7 in] (L2 = extended piston rod plus centering pin).



Series **86P40-2, 86P60-2** Accessories

Piston rod cover (Bellows) **82ZB-013-3**



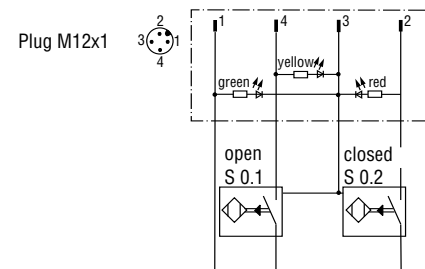
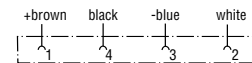
Specifications	Order no.
<b>External guide</b> (use w/o bellows) 	<b>82ZB-009-2</b> <b>82ZB-010-2</b> (only with A+B) <b>82ZB-090-1</b> (with C)
<b>Bellows</b> (use w/o external guide only) 	<b>82ZB-013-3</b> (only strokes 20 und 40)
<b>Connecting cable</b> (1 connector socket & 5 m cable)	
<b>Connector socket M12x1 straight, 5-pin</b> 	<b>8EL-002-1</b>
<b>Connector socket M12x1 90 angular, 4-pin</b> 	<b>8EL-003-1</b>

Wiring diagram of electrical sensing system

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

Inductive design:

- **C8** Connector plug M12x1, parallel with piston rod
- **D8** Connector plug M12x1, 90° swivel



Major spare parts for **86P40/60-2...**

Specifications	Order no. for 86P40/60-2...
<b>End position sensing system</b>	
C8 connector plug M12x1, parallel with piston rod	<b>86P0-200C8</b> (stroke 20/40) <b>86P0-200C8006</b> (stroke 60)
D8 connector plug M12x1, 90° swivel	<b>86P0-200D8</b> (stroke 20/40) <b>86P0-200D8006</b> (stroke 60)
Seal kit	<b>8PW-079-1-00</b> (for 82P40-2) <b>8PW-080-1-00</b> (for 82P60-2)