

# BPW Brake Cylinders

for disc and drum brake axles

## Technical data

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## The power plant for your brake system. Brake cylinders from BPW.

In a brake system, it is of the utmost importance to achieve an optimum interplay between the individual components. The brake cylinders have a decisive role to play in this, because they have to provide a perfectly modulated force transfer within the brake system. BPW develops and produces its own brake cylinders for drum and disc brakes – further proof of our extensive expertise when it comes to brakes. As a system supplier, our product range includes diaphragm and spring-type cylinders.

### Delivery variants of BPW brake cylinders



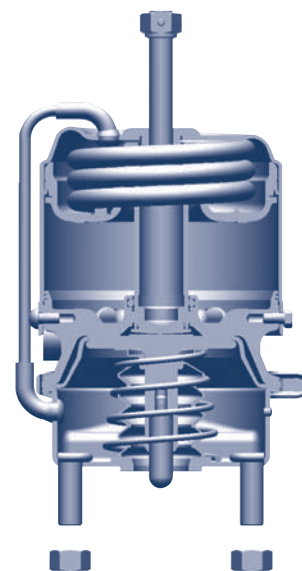
#### Diaphragm cylinders

They act as a service brake and are characterised by their compact external dimensions and low weight.



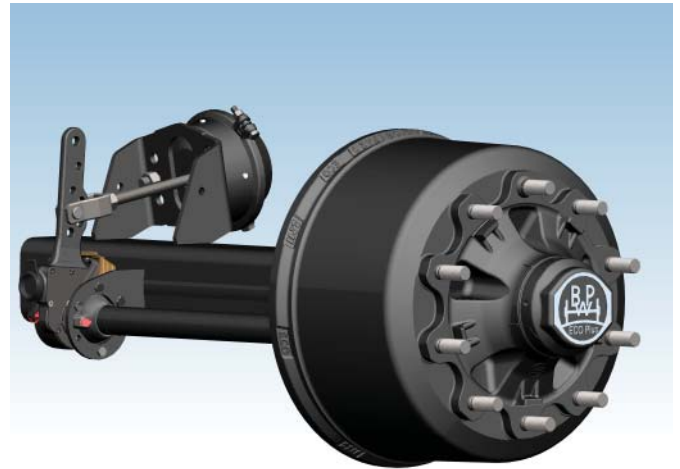
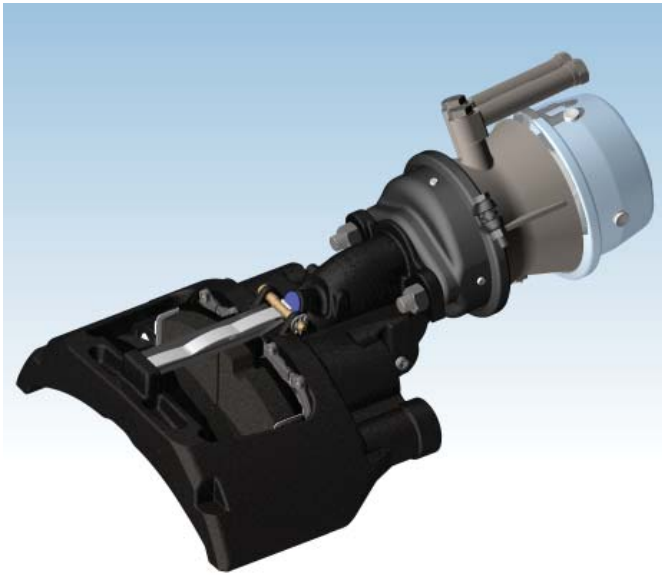
#### Diaphragm-diaphragm (M-M) cylinders

They act both as a service brake as well as an auxiliary and parking brake. They are lighter than the diaphragm-piston cylinder.



#### Diaphragm-piston (M-K) cylinders

They have the same function as a diaphragm/diaphragm cylinder. Their greater spring-type accumulator force means they are suited above all for vehicles with higher axle loads and limited installation space.



For axles with disc brakes			For axles with drum brakes	
Diaphragm cylinder	Diaphragm/diaphragm cylinder	Diaphragm/piston cylinder	Diaphragm cylinder	Diaphragm/diaphragm cylinder
14"	14/24"		12"	
15"	15/24"		16"	16/24"
16"	16/24"	16/16"	20"	20/30"
18"	18/24"		24"	24/30"
20"	20/24"	20/24"	30"	30/30"
22"		22/24"	36"	
24"		24/24"		

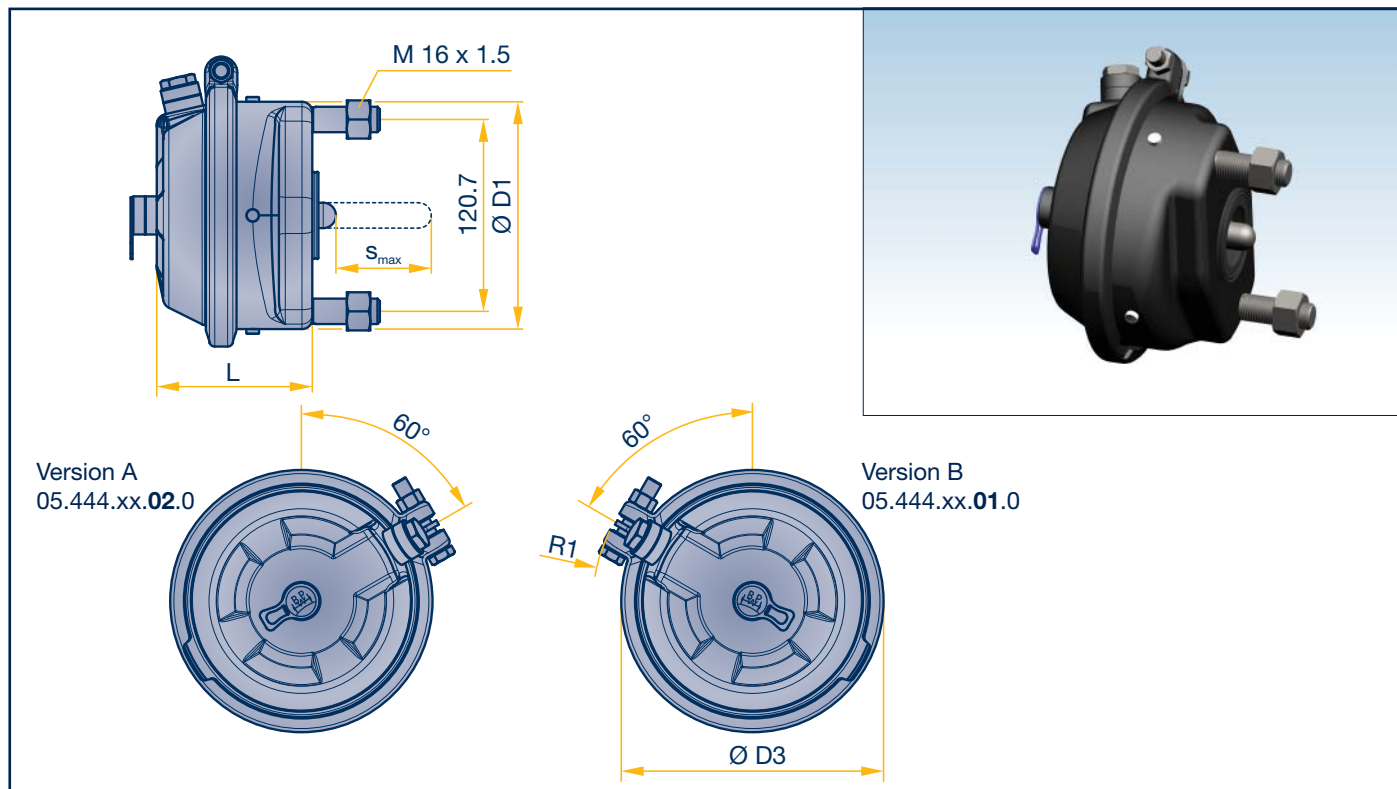
In the original equipment the brake cylinder can be delivered completely with BPW axles. If the lever length is > 150 mm, make sure that only long-stroke diaphragm cylinders are used. Always use long-stroke cylinders with automatic slack adjusters.

## BPW brake cylinders – Features and benefits

- Sustained high quality assured by testing and continuous quality checks (FMEA, dimension test, release pressure test, functional test on the vehicle, vibration test, dirt test, fatigue strength test with one million braking cycles, hot and cold test (80 °, -40 °), force output check)
- Improved sealing using innovative flanging technique
- Optimum corrosion protection for the housing components by means of various high-quality coating procedures
- Optimum corrosion protection for the springs by means of double coating
- Inch and metric connections available
- BPW drum brake cylinders are standard long-stroke cylinder
- Easy to install because of extended compressed air connection (standard in spring-type cylinders for disc brakes)
- In drum brakes, there is no need for an external return spring between the slack adjuster and air cylinder bracket (precondition: mounting on BPW axles, round hole yoke end and lever length > 100 mm)
- New ECE certificates and test reports are available on the BPW website

# BPW Brake Cylinder for Axles with Disc Brakes

## 1 Diaphragm cylinder



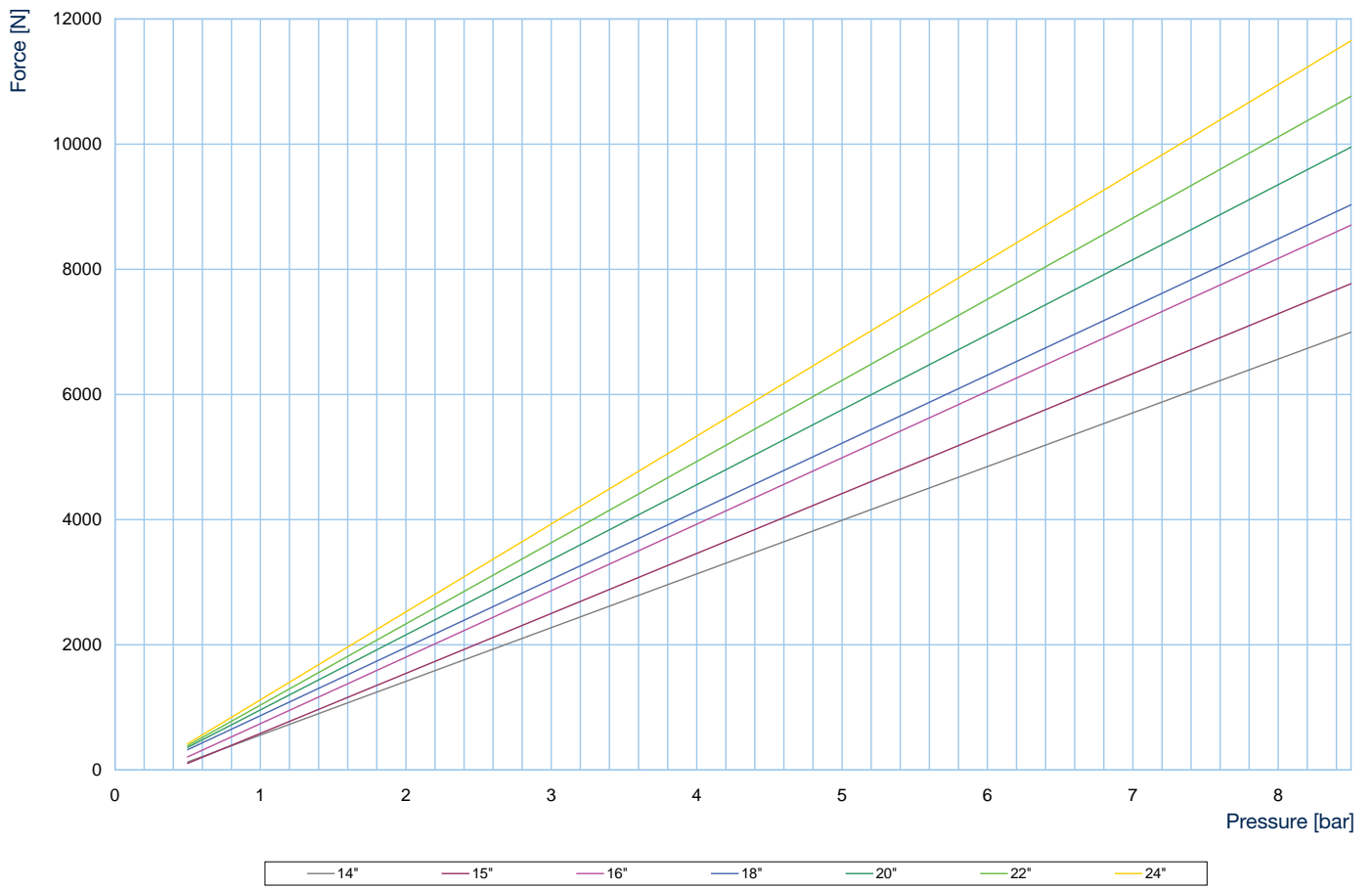
## Installation dimensions BPW brake cylinder

Cylinder size	L mm	D1 mm	D3 mm	R1 mm
14"	101	143	165	101.5
15"	101	143	165	101.5
16"	101	145	165	101.5
18"	116	150	176	107
20"	115	150	176	107
22"	120	160	186	112
24"	120	160	186	112

## Versions of BPW brake cylinder

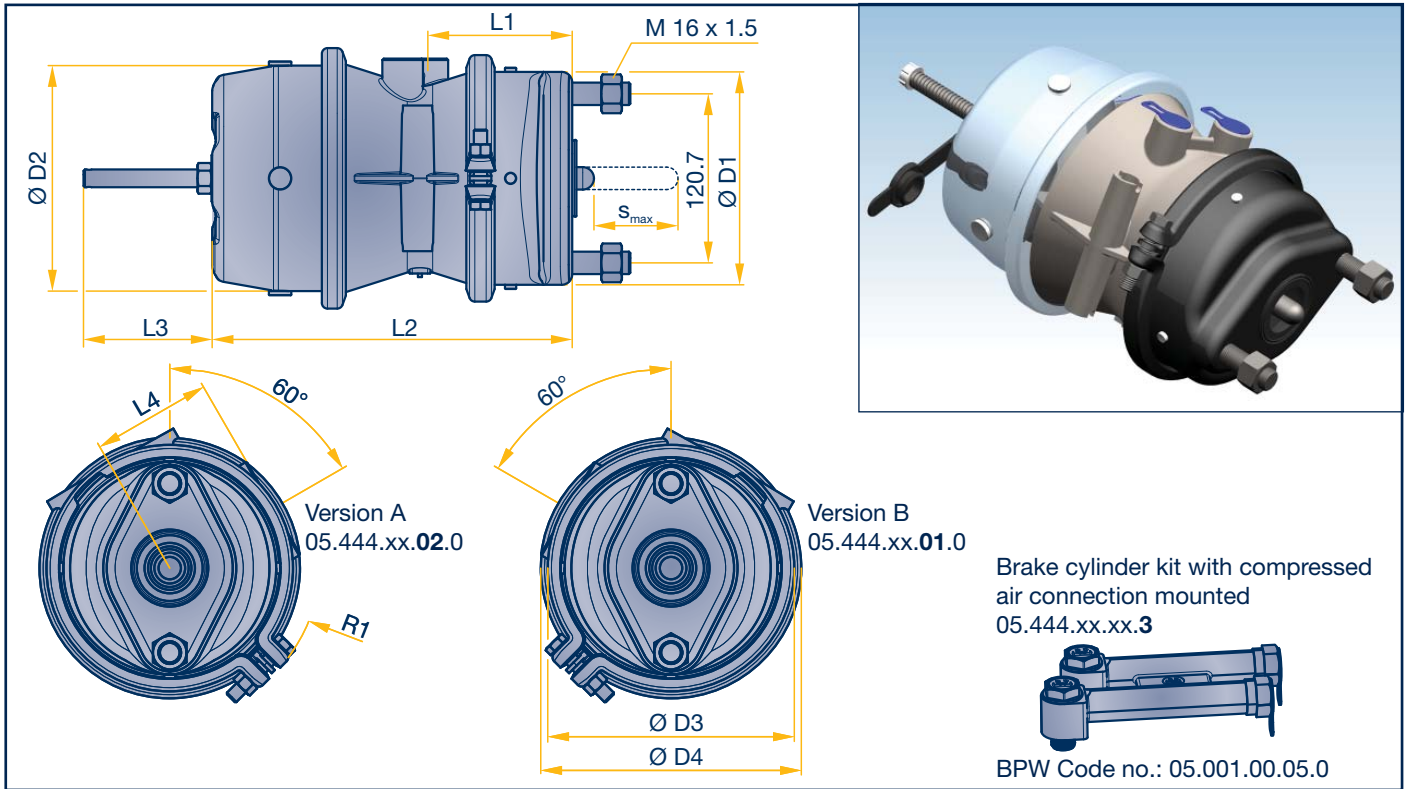
Cylinder size	Version BPW brake cylinder		Test report BC 0055.2		
	BPW Code number Version A	BPW Code number Version B	Compressed air cylinder		
			Maximum stroke $s_{max}$ (mm)	Average thrust $Th_A$ (N)	Effective stroke $s_p$ (mm)
14"	05.444.30.02.0	05.444.30.01.0	62	865p - 300	1.45p + 43
15"	05.444.31.02.0	05.444.31.01.0	60	958p - 372	0.78p + 51
16"	05.444.32.02.0	05.444.32.01.0	60	1062p - 320	0.89p + 47
18"	05.444.33.02.0	05.444.33.01.0	65	1088p - 218	1.14p + 52
20"	05.444.34.02.0	05.444.34.01.0	65	1199p - 239	0.85p + 57
22"	05.444.35.02.0	05.444.35.01.0	69	1297p - 259	0.39p + 60
24"	05.444.36.02.0	05.444.36.01.0	66	1404p - 281	0.42p + 62

Characteristic line of diaphragm cylinder 14 - 24" for disc brakes



# BPW Brake Cylinder for Axles with Disc Brakes

## 2 Diaphragm-diaphragm (M-M) cylinders



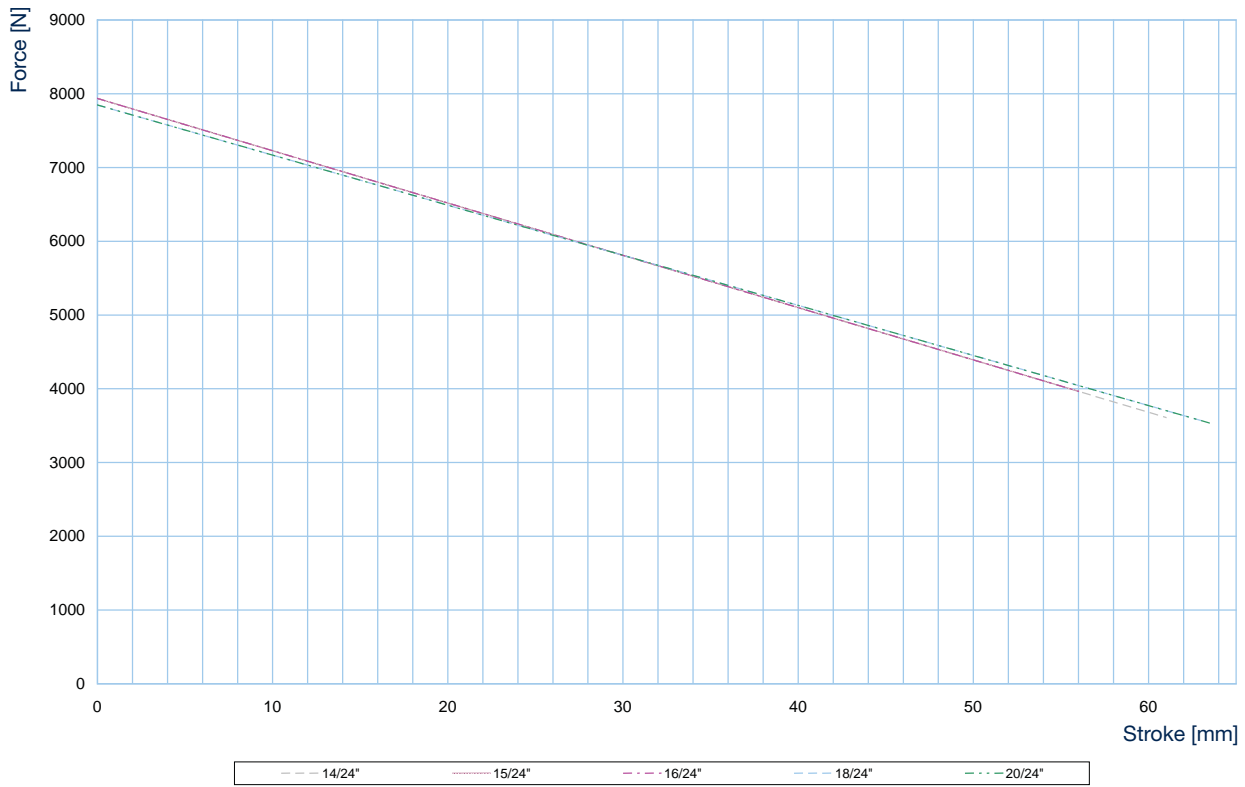
### Installation dimensions BPW brake cylinder

Cylinder size	Ø D1 mm	Ø D2 mm	Ø D3 mm	Ø D4 mm	R1 mm	L1 mm	L2 mm	L3 mm	L4 mm
14/24"	145	161	165	186	100	95	235	92	85.5
15/24"	145	161	165	186	100	95	235	92	85.5
16/24"	145	161	165	186	100	95	235	92	85.5
18/24"	145	161	176	186	106	103	257	92	85.5
20/24"	145	161	176	186	106	103	257	92	85.5

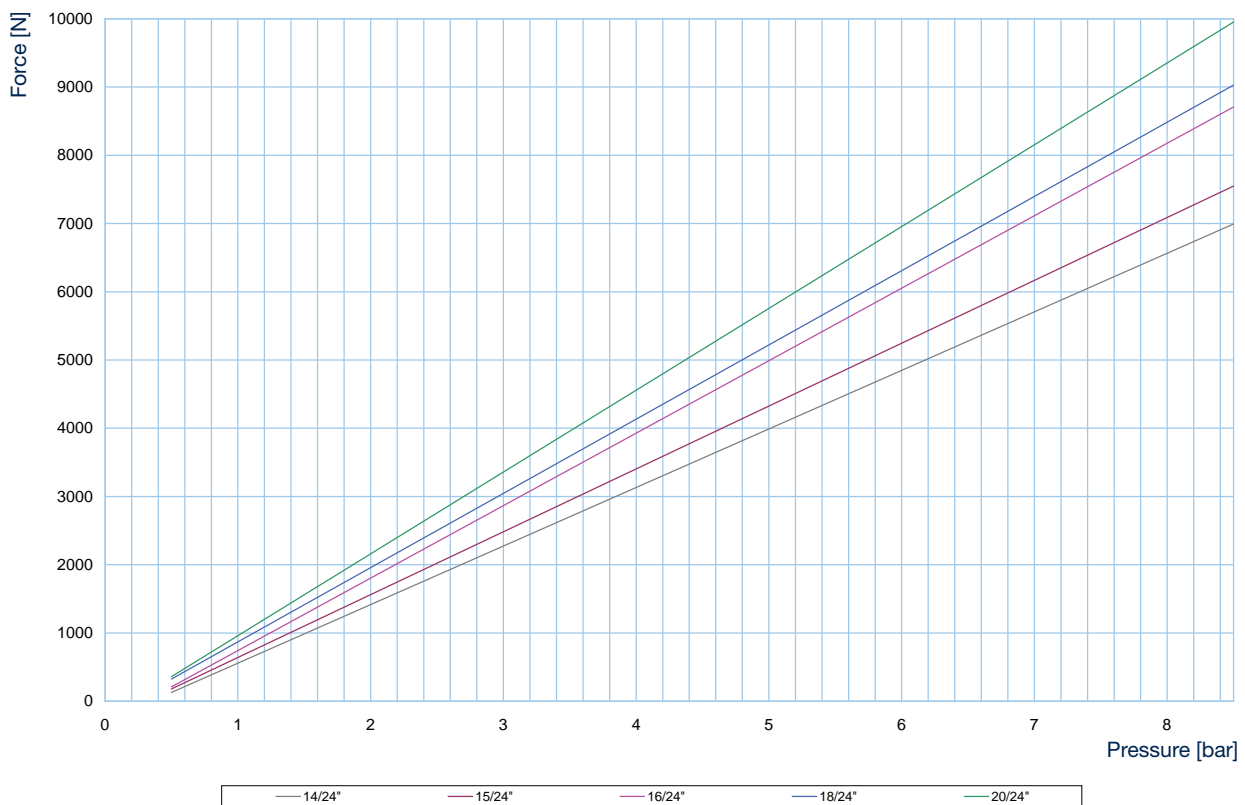
### Versions of BPW brake cylinder

Cylinder size	Version BPW brake cylinder			Test report BC 0056.2					
	BPW Code number Version A	BPW Code number Version B	Mounting kit	Compressed air cylinder			Spring-type cylinder		
				Max. stroke $s_{max}$ (mm)	Average thrust $Th_A$ (N)	Effective stroke $s_p$ (mm)	Max. stroke $s_{max}$ (mm)	Average thrust $Th_s$ (N)	Release pressure $p_{L10}$ (bar)
14/24"	05.444.38.02.0	05.444.38.01.0	05.801.21.50.0	61	858p - 300	1.45p + 42	61	7939 - 71s	5.15
15/24"	05.444.39.02.0	05.444.39.01.0	05.801.21.51.0	57	921p - 280	0.57p + 50	56	7939 - 71s	5.2
16/24"	05.444.40.02.0	05.444.40.01.0	05.801.21.52.0	56	1062p - 320	0.89p + 47	56	7939 - 71s	5.0
18/24"	05.444.42.02.0	05.444.42.01.0	05.801.21.53.0	63	1088p - 218	1.14p + 52	63	7850 - 68s	5.2
20/24"	05.444.44.02.0	05.444.44.01.0	05.801.21.54.0	64	1199p - 239	0.85p + 57	63.5	7850 - 68s	5.2

Spring type characteristic line of diaphragm - diaphragm cylinder 14 - 20" for disc brakes

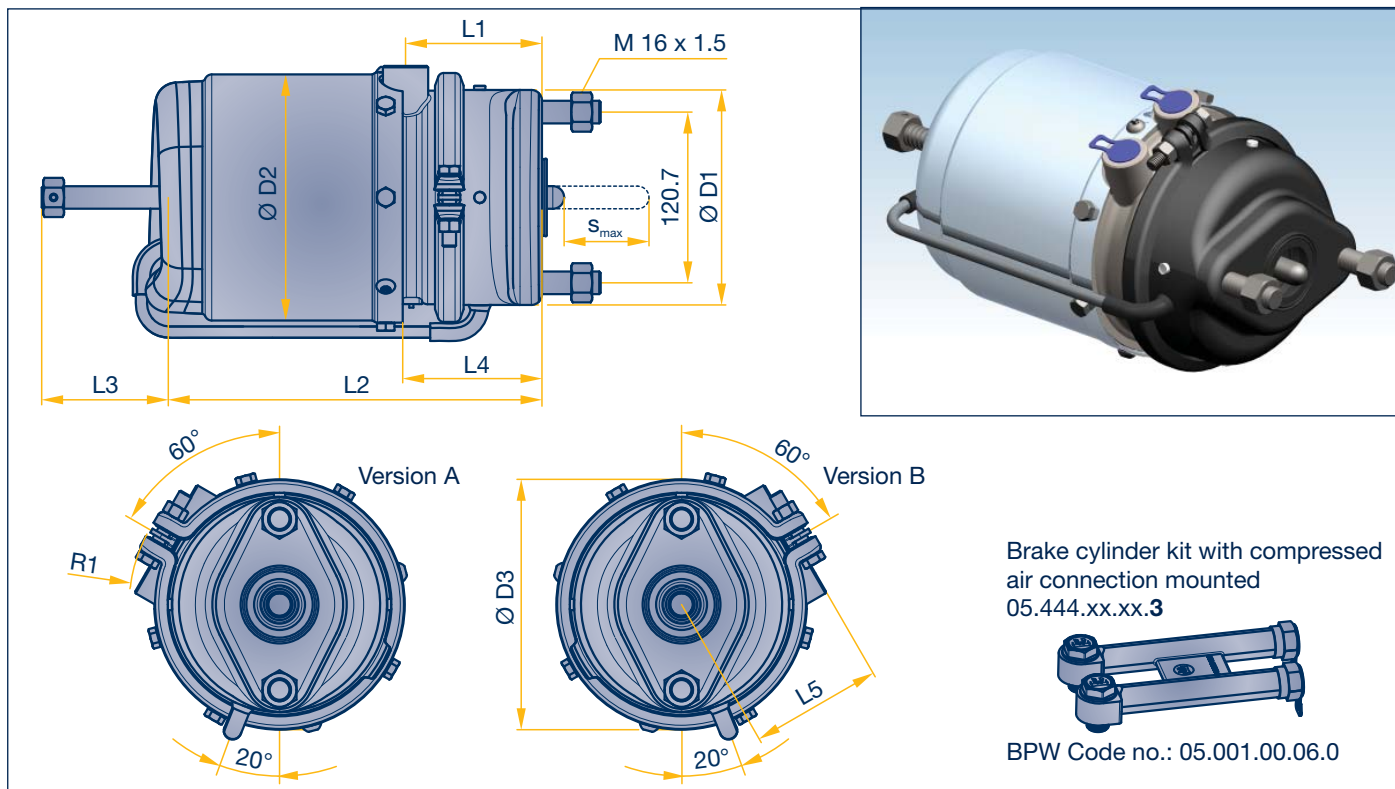


Diaphragm - diaphragm cylinder 14 - 20" for disc brakes



# BPW Brake Cylinder for Axles with Disc Brakes

## 3 Diaphragm-piston (M-K) cylinders



### Installation dimensions BPW brake cylinder

Cylinder size	Ø D1 mm	Ø D2 mm	Ø D3 mm	R1 mm	L1 mm	L2 mm	L3 mm	L4 mm	L5 mm
16/16"	145	161.6	165	101.5	91.6	255.6	68.4	93	85
20/24"	152	174	176	107	97	280	75	102	93
22/24"	162	174	186	112	99	282	75	104	93
24/24"	162	174	186	112	99	282	75	104	93

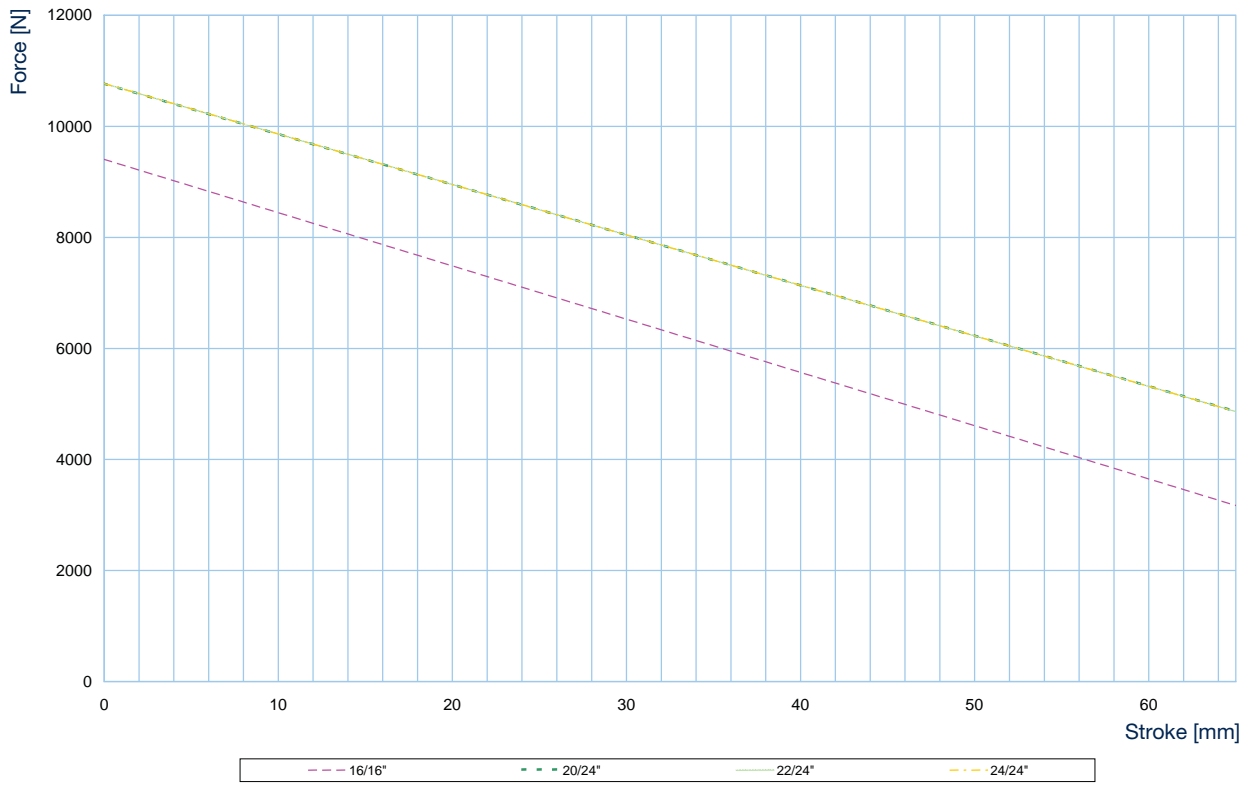
### Versions of BPW brake cylinder

Cylinder size	Version BPW brake cylinder			Test report BC 0077.1					
	BPW Code number Version A	BPW Code number Version B	Mounting kit	Compressed air cylinder			Spring-type cylinder		
				Max. stroke $s_{max}$ (mm)	Average thrust $Th_A$ (N)	Effective stroke $s_p$ (mm)	Max. stroke $s_{max}$ (mm)	Average thrust $Th_s$ (N)	Release pressure $p_{L10}$ (bar)
16/16"	05.444.41.02.0	05.444.41.01.0	05.801.21.55.0	60	1062p - 320	0.84p + 49	79	9408 - 96s	5.0
	05.444.41.04.0	05.444.41.03.0	05.801.21.59.0						
20/24"	05.444.43.02.0	05.444.43.01.0	05.801.21.56.0	68	1199p - 239	0.80p + 53	67	10775 - 91s	5.0
	05.444.43.04.0	05.444.43.03.0	05.801.21.60.0						
22/24"	05.444.45.02.0	05.444.45.01.0	05.801.21.57.0	65	1297p - 259	1.06p + 49	65	10775 - 91s	4.7
	05.444.45.04.0	05.444.45.03.0	05.801.21.61.0						
24/24"	05.444.46.02.0	05.444.46.01.0	05.801.21.58.0	65	1404p - 281	0.72p + 53	64,5	10775 - 91s	4.8
	05.444.46.04.0	05.444.46.03.0	05.801.21.62.0						

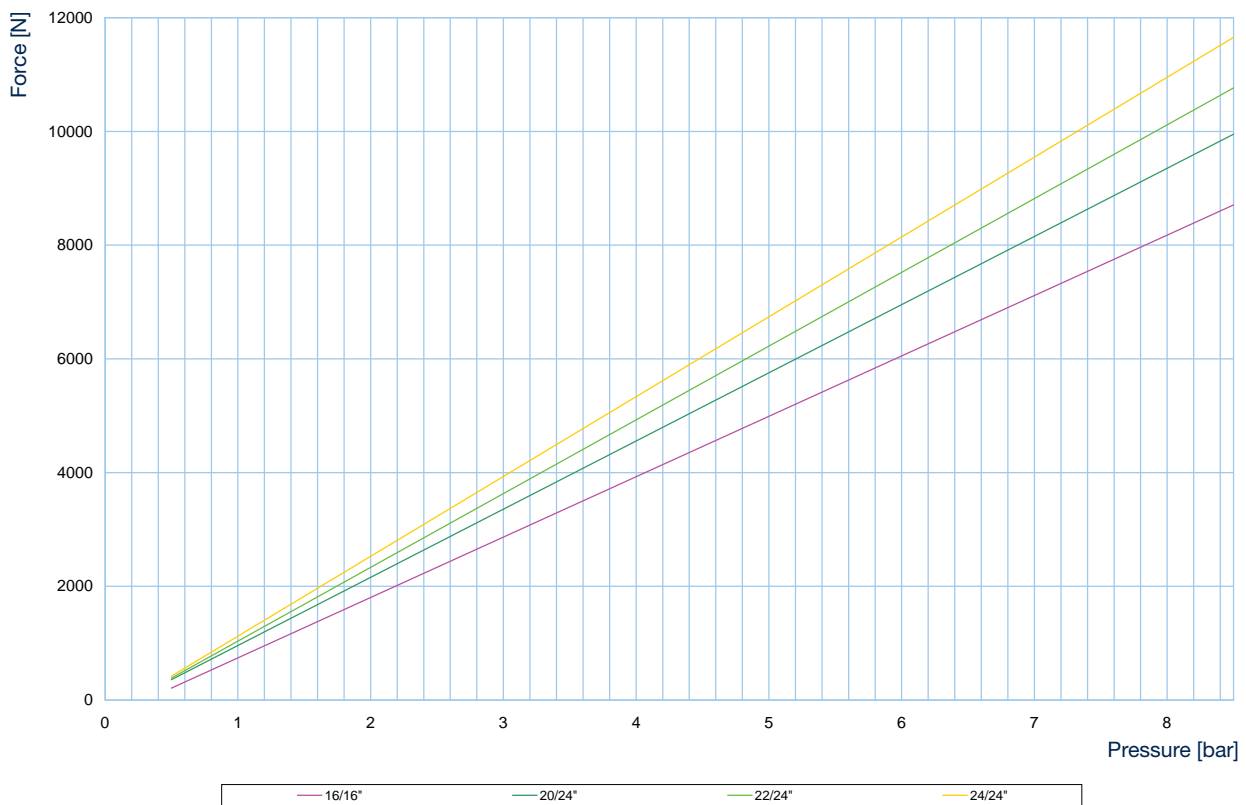
\* for top trailing arm (vent rotated 180°)



Spring type characteristic line of diaphragm - piston cylinder 16 - 24" for disc brakes



Diaphragm - piston cylinder 16 - 24" for disc brakes



# BPW Brake Cylinder for Axles with Drum Brakes

## 4 Diaphragm cylinders

\*76.2 mm on 05.444.12.xx.x  
(12" cylinder)

120.7\*  
Ø D1

L DL = 185 S<sub>max</sub>

DLGK = 227 Ø 14

DLGK = 227 Ø 14

Brake cylinder kit with mounted round hole yoke  
Threaded connection M 16 : 05.171.03.34.0  
Threaded connection 5/8" : 05.171.03.37.0  
BPW Code no.: 05.444.xx.xxx.1

Brake cylinder kit with mounted long hole yoke  
Threaded connection M 16 : 05.171.04.10.0  
BPW Code no.: 05.444.xx.xxx.2  
(Application for manual parking brake system (FBA))

## Installation dimensions BPW brake cylinder

Cylinder size	L mm	D1 mm
12"	116	122.5
16"	115	145
20"	111.5	151
24"	118.5	161
30"	121.5	183
36"	131	201

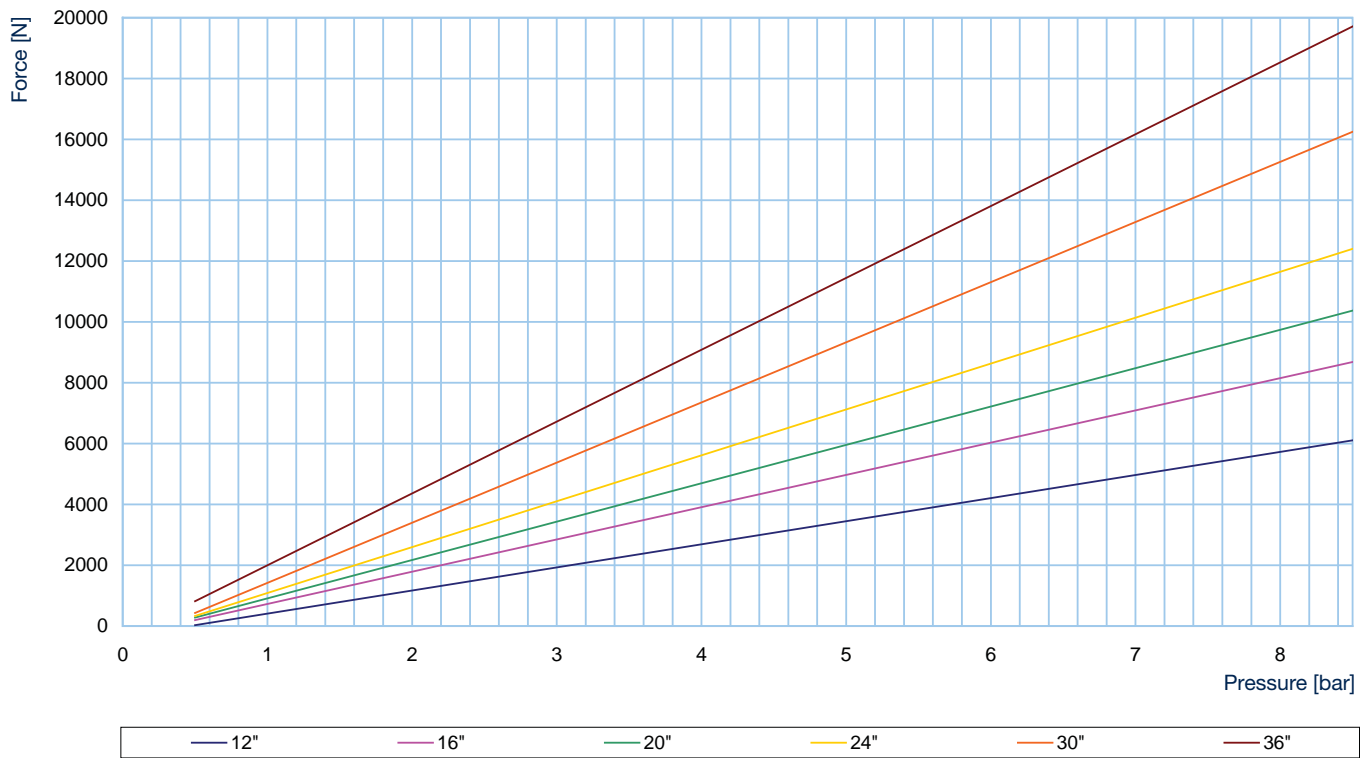
Brake cylinder partly available with shorter rods. Other executions on request.

## Versions of BPW brake cylinder

Cylinder size	Version BPW brake cylinder		Test report BC 0069.1		
	BPW Code number	Threaded connection	Compressed air cylinder		
			Maximum stroke s <sub>max</sub> (mm)	Average thrust Th <sub>A</sub> (N)	Effective stroke s <sub>p</sub> (mm)
12"	05.444.12.01.0	M 12 x 1.5	78	760p - 352	1.28p + 57
16"	05.444.13.01.0	M 16 x 1.5	80	1060p - 330	1.40p + 57
20"	05.444.14.01.0	M 16 x 1.5	75	1261p - 349	0.85p + 62
24"	05.444.15.01.0	M 16 x 1.5	75	1509p - 423	0.74p + 69
30"	05.444.16.01.0	M 16 x 1.5	79	1977p - 556	0.63p + 73
36"	05.444.17.01.0	M 16 x 1.5	75	2362p - 365	0.98p + 58

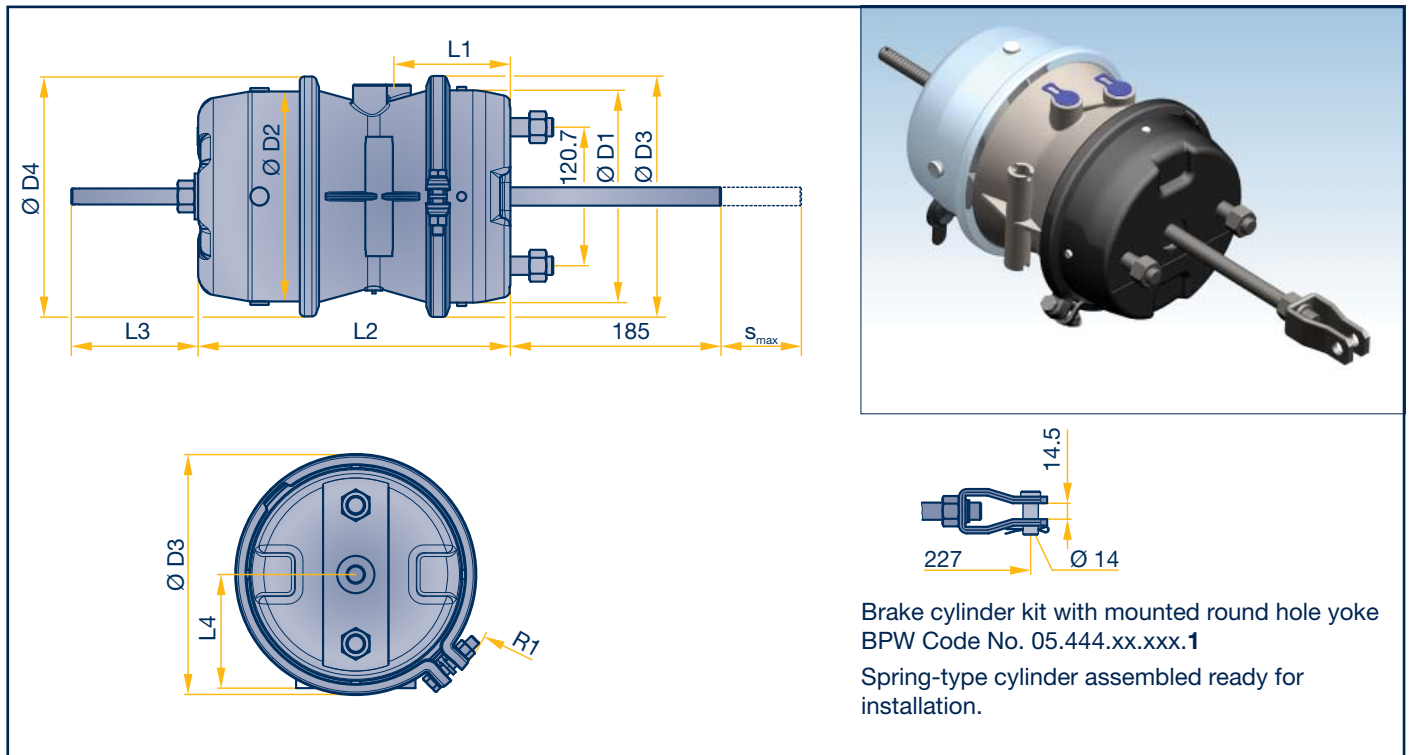
24" and 30" diaphragm cylinder with air connection 3/8" NTPF and 5/8"-18UNF available. Further executions on request.

Characteristic line of diaphragm cylinders 12 - 36" for drum brakes



# BPW Brake Cylinder for Axles with Drum Brakes

## 5 Diaphragm-diaphragm (M-M) cylinders



### Installation dimensions BPW brake cylinder

Cylinder size	Ø D1 mm	Ø D2 mm	Ø D3 mm	Ø D4 mm	R1 mm	L1 mm	L2 mm	L3 mm	L4 mm
16/24"	145	162	165	186	101.5	105	268	110.5	80
20/30"	163	183	186	210	112	102	274	112.5	91.5
24/30"	163	183	186	210	112	102	274	112.5	91.5
30/30"	185	183	210	212	125	102	274	112.5	98

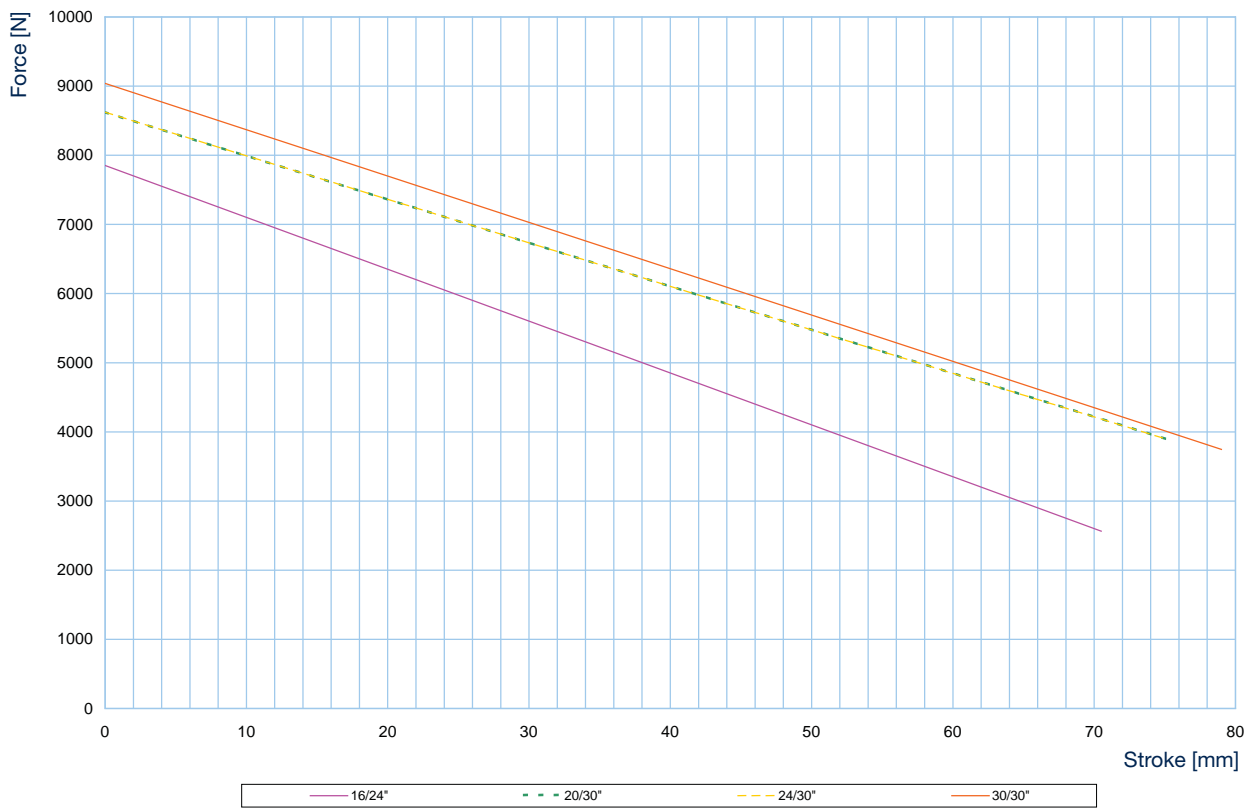
Brake cylinders partly with shorter rods available. Further executions on request.

### Versions of BPW brake cylinder

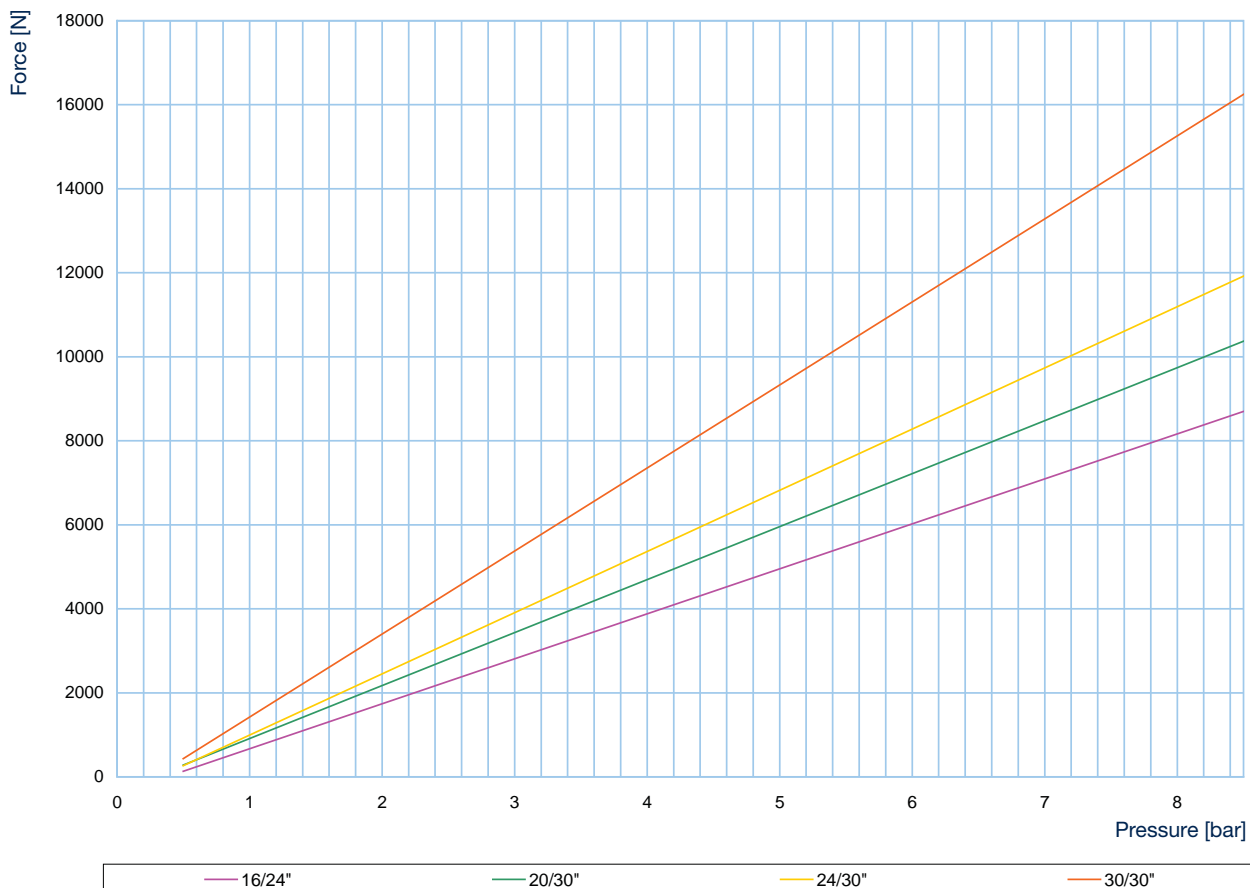
Cylinder size	Version BPW brake cylinder		Test report BC 0070.1					
	BPW Code number	Threaded connection	Compressed air cylinder			Spring-type cylinder		
			Maximum stroke $s_{max}$ (mm)	Average thrust $Th_A$ (N)	Effective stroke $s_p$ (mm)	Maximum stroke $s_{max}$ (mm)	Average thrust $Th_s$ (N)	Release pressure $p_{L10}$ (bar)
16/24"	05.444.18.01.0	M 16 x 1.5	74	1071p - 403	0.70p + 56	70.5	7852 - 75s	5.0
20/30"	05.444.19.01.0	M 16 x 1.5	75	1261p - 349	1.34p + 62	75	8625 - 63s	5.0
24/30"	05.444.20.01.0	M 16 x 1.5	75	1457p - 464	0.74p + 69	75	8625 - 63s	4.7
30/30"	05.444.21.01.0	M 16 x 1.5	80	1977p - 556	0.43p + 73	79	9040 - 67s	4.6

24/30" and 30/30" diaphragm cylinder with air connection 3/8" NPTF and 5/8"-18 UNF, as well as short-stroke execution with stroke  $s_{max} = 64$  mm available. Further executions on request.

### Spring-type characteristic line of diaphragm - diaphragm cylinder 16 - 30" for drum brakes



### Diaphragm - diaphragm cylinder 16 - 30" for drum brakes





BPW-BZ 39131201 e

