

## Saplamalı Hidrolik Silindirler

Tie Rod Hydraulic Cylinders



### ISO6020/2 norm Saplamalı Hidrolik Silindir

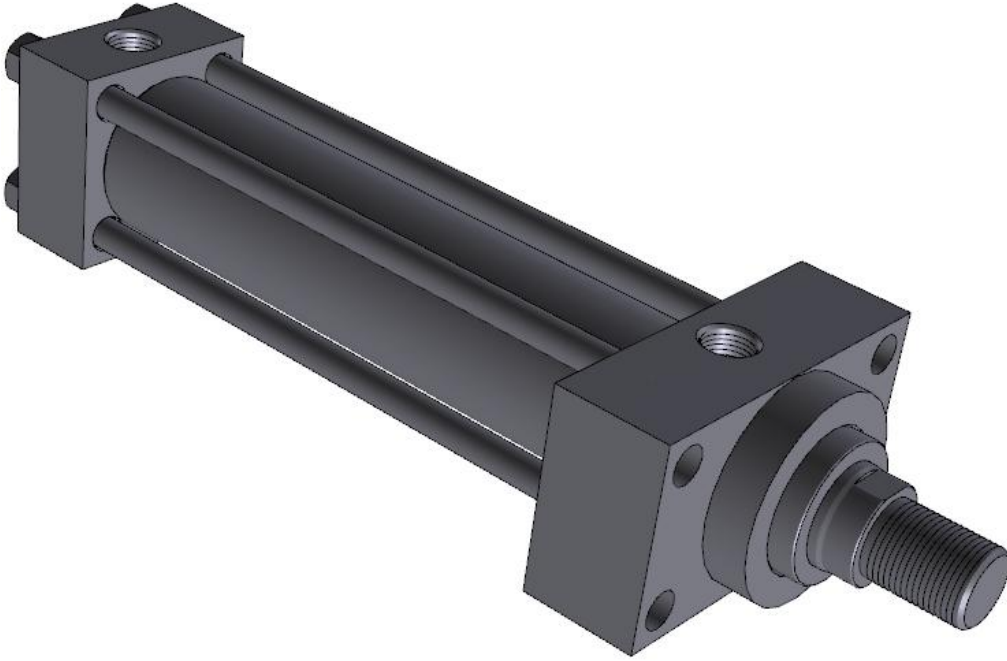
Nominal Basınç:	160 bar
Test Basıncı:	240 bar
Maksimum Strok:	500 mm
Piston Ø:	25 – 200 mm

### ISO6020/2 Tie rod Hydraulic Cylinder

Nominal pressure:	160 bar
Test pressure:	240 bar
Maximum stroke:	500 mm
Piston Ø:	25 to 200 mm

## Saplamalı Hidrolik Silindirler

### Tie Rod Hydraulic Cylinders



•	<b>DIN/ISO 6020/2 norm ölçülerinde hidrolik silindir.</b> Hydraulic cylinder according to DIN/ISO 6020/2.
•	<b>Maksimum çalışma basıncı 160 bar.</b> Maximum operating pressure up to 160 bar
•	<b>Ø25 - Ø200 mm arasında 10 farklı piston ölçüsü ve 8 farklı bağlantı seçeneği</b> Choice of 10 different piston sizes between Ø25 and Ø200 mm and 8 different attachments
•	<b>HS160 serisi, isteğe bağlı olarak lineer (ayarlanmaz) yastıklama ile sunulur.</b> HS160 serie optional available with linear (non-controlable) cushioning.
•	<b>Opsiyonel olarak Viton® sızdırmazlık elemanlarıyla imal edilebilir.</b> Equipped with Viton® seals as an option.
•	<b>Varsayılan sızdırmazlık elemanlarıyla maksimum sürekli çalışma sıcaklığı ≤ 80°C ve hız ≤ 0,5 m/s</b> Seals by default for maximum continuous duty temperatures up to 80°C and velocities up to 0,5 m/s

## Saplamalı Hidrolik Silindirler

### Tie Rod Hydraulic Cylinders

#### Genel açıklamalar

• Hidrokraft HS160 serisi saplamalı tip hidrolik silindirler DIN/ISO 6020/2 norm montaj ölçülerinde imal edilir. Çeşitli montaj ölçüleri bulunmaktadır.

• **Piston:**  
Ø25 – Ø200 mm piston çap aralığında DIN / ISO 3320 normuna göre imal edilir.

• **Çalışma basıncı:**  
Nominal basınç maksimum 160 bar. Yüksek çalışma basınçları için lütfen bize ulaşın.

• **Çalışma sıvıları:**  
Hidrolik yağ, H, HL, HLP DIN 51524/51525 normlarında. Yangın sıvıları ya da su gibi diğer işletim sıvılar istek üzerine kullanılabilir.

• **Çalışma sıcaklığı:**  
Varsayılan olarak, silindir, -10°C ile +80°C sıcaklık aralığında çalışacak sızdırmazlık elemanları ile donatılmıştır. Yüksek sıcaklığa dayanıklı sızdırmazlık elemanları, tasarım değişiklikleri olmadan monte edilebilir.

• **Piston hızı:**  
0.5 m/s maksimum. Yüksek piston hızları için irtibata geçiniz.

• **Strok:**  
Standart stroklar veri sayfalarında listelenmiştir. Ayrıca kullanıcılar tarafından kısaltılabilir. Silindirlerde uzun hareketler de talep edilebilir

• **Toleranslar:**  
Hareket miktarına bağlı toleranslar DIN ISO 2768 –g T1 normunda imal edilir.  
Diğer toleranslar DIN ISO 2768- m T1 normundadır.

#### General description

• Hidrokraft HS160 serie tie rod cylinders are designed and manufactured according to the installation dimensions as per the standard DIN/ISO 6020/2. Various mounting options are available.

• **Piston:**  
Piston Ø25 to Ø200 mm according to DIN / ISO 3320.

• **Operating pressure:**  
Nominal pressure maximum 160 bar, for higher operating pressures please contact us.

• **Operating fluids:**  
Hydraulic oil on the basis of mineral oils for example H, HL, HLP-oils per DIN 51524/51525. Other operating fluids like fire fluids or water may be used upon request.

• **Operatin temperature:**  
By default the cylinder is fitted with seals for a temperature range from -10°C to +80°C. High temperature resistant seals can be fitted without changes in design.

• **Piston travel speed:**  
Maximum of 0.5m/s. Please contact for higher piston travel speeds.

• **Stroke:**  
Standart strokes listed in the data sheets can be reduced user-defined. Hydraulic cylinders are also available with larger stroke.

• **Tolerances:**  
Stroke tolerances and stroke dependent dimensions according to DIN ISO 2768 – g T1.  
Other tolerances according to DIN ISO 2768 – m T1.

### Teknik data

### Technical data

<b>Piston Ø – mm</b> Piston Ø	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>	<b>80</b>	<b>100</b>	<b>125</b>	<b>160</b>	<b>200</b>
<b>Mil Ø mm Ø① mm</b> Piston-rod Ø mm	12	14	18	22	28	36	45	56	70	90
<b>Mil Ø mm Ø② mm</b> Piston-rod Ø mm	18	22	28	36	45	56	70	90	110	140
<b>Piston baskı alanı - cm<sup>2</sup></b> Piston area pushing - cm <sup>2</sup>	4,9	8,0	12,6	19,6	31,2	50,2	78,5	122,6	201,0	314,2
<b>Piston çekme alanı ① - cm<sup>2</sup></b> Piston area pulling – cm <sup>2</sup>	3,7	6,4	10,0	15,8	25,0	40,01	62,6	98	162,5	250,5
<b>Piston çekme alanı ② - cm<sup>2</sup></b> Piston area pulling – cm <sup>2</sup>	2,4	4,2	6,5	9,4	15,3	25,6	40	59	106,0	160,2

### Baskı Kuvveti – daN

Piston force pushing - daN

<b>80 bar</b>	392	640	1.000	1.570	2.490	4.010	6.280	9.800	16.080	25.136
<b>100 bar</b>	490	800	1.260	1.960	3.120	5.020	7.850	12.260	20.100	31.434
<b>120 bar</b>	588	960	1.510	2.350	3.740	6.020	9.420	14.710	24.120	37.704
<b>140 bar</b>	686	1.120	1.760	2.740	4.360	7.020	10.990	17.160	28.140	43.988
<b>160 bar</b>	784	1.280	2.010	3.130	4.990	8.030	12.560	19.610	32.160	50.295

### Çekme Kuvveti ① – daN

Piston force pulling - daN

<b>80 bar</b>	296	512	800	1.264	2.000	3.200	5.008	7.840	13.000	20.040
<b>100 bar</b>	370	640	1.000	1.580	2.500	4.000	6.260	9.800	16.250	25.050
<b>120 bar</b>	444	768	1.200	1.896	3.000	4.800	7.512	11.760	19.500	30.060
<b>140 bar</b>	518	896	1.400	2.212	3.500	5.600	8.764	13.720	22.750	35.070
<b>160 bar</b>	592	1024	1.600	2.528	4.000	6.400	10.016	15.680	26.000	40.080

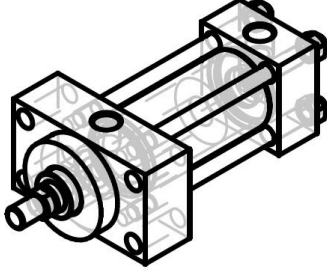
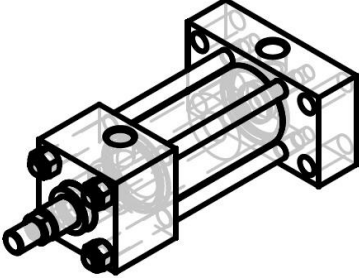
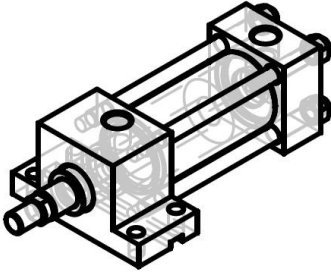
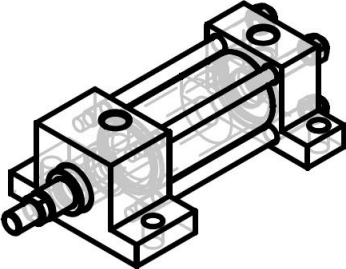
### Çekme Kuvveti ② – daN

Piston force pulling - daN

<b>80 bar</b>	192	336	520	752	1.224	2.048	3.200	4.720	8.480	12.816
<b>100 bar</b>	240	420	650	940	1.530	2.560	4.000	5.900	10.600	16.020
<b>120 bar</b>	288	504	780	1.128	1.836	3.072	4.800	7.080	12.720	19.224
<b>140 bar</b>	336	588	910	1.316	2.142	3.584	5.600	8.260	14.840	22.428
<b>160 bar</b>	384	672	1.040	1.504	2.448	4.096	6.400	9.440	16.960	25.632

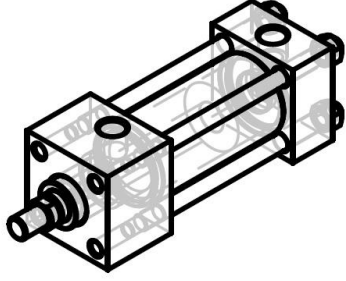
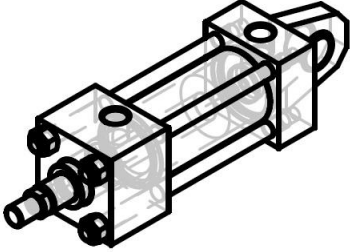
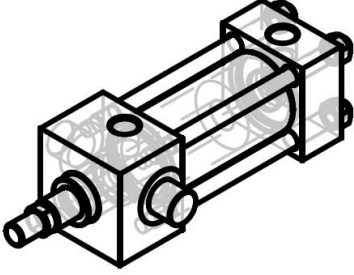
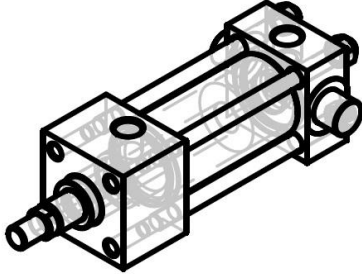
## Gövde yapıları

## Construction forms

Kod Code		Açıklama Description
ME5		<p>Ön Flanş Bağlantı Mil tarafından, boydan boya açılmış 4 delikten bağlanır. Hidrolik bağlantı delikleri BSPT.</p> <p>Rectangular flange, head side 4 longitudinal holes on rod side. Port threads are BSPT.</p>
ME6		<p>Taban Flanş Bağlantı Piston tarafından, boydan boya açılmış 4 delikten bağlanır. Hidrolik bağlantı delikleri BSPT.</p> <p>Rectangular flange, rear side. 4 longitudinal holes on rod side. Port threads are BSPT.</p>
MS1		<p>Ön Ayak Bağlantı Mil tarafından, boydan boya açılmış 4 delikten bağlanır. Hidrolik bağlantı delikleri BSPT.</p> <p>Side foot mounting, head side 4 longitudinal holes on rod side. Port threads are BSPT.</p>
MS2		<p>Ayak Bağlantı Mil tarafından ve karşısından, boydan boya açılmış 4 delikten bağlanır. Hidrolik bağlantı delikleri BSPT.</p> <p>Side foot mounting, head and rear side Adjusted with 4 through holes on head and rod side. Port threads are BSPT.</p>



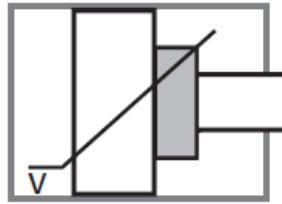
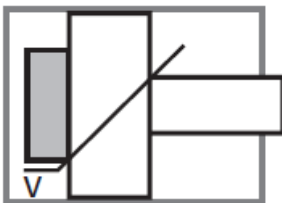
## Gövde yapıları

## Construction forms

Kod Code		Açıklama Description
MX5		<p>Ön Kare Flanş Bağlantı Flanş üzerinde, mil tarafından açılmış 4 adet diş ile bağlanır. Hidrolik bağlantı delikleri BSPT.</p> <p>Square flange, head side Connected with 4 threaded blind holes on rod side. Port threads are BSPT.</p>
MP5		<p>Arka Mafsal Bağlantı Arka taraftan küresel mafsal bağlantılı. Hidrolik bağlantı delikleri BSPT.</p> <p>Fixed eye with spherical bearing, rear side Adjusted with spherical bearing at rod end. Port threads are BSPT.</p>
MT1		<p>Ön Boğaz Mafsal Bağlantı Mil tarafından muylu ile bağlanır. Hidrolik bağlantı delikleri BSPT.</p> <p>Trunnion mounting, head side Use with trunnion mounting at front. Port threads are BSPT.</p>
MT2		<p>Arka Boğaz Mafsal Bağlantı Arka taraftan muylu ile bağlanır. Hidrolik bağlantı delikleri BSPT.</p> <p>Trunnion mounting, rear side Use with trunnion mounting at rear side. Port threads are BSPT.</p>

### Çalışma şekli

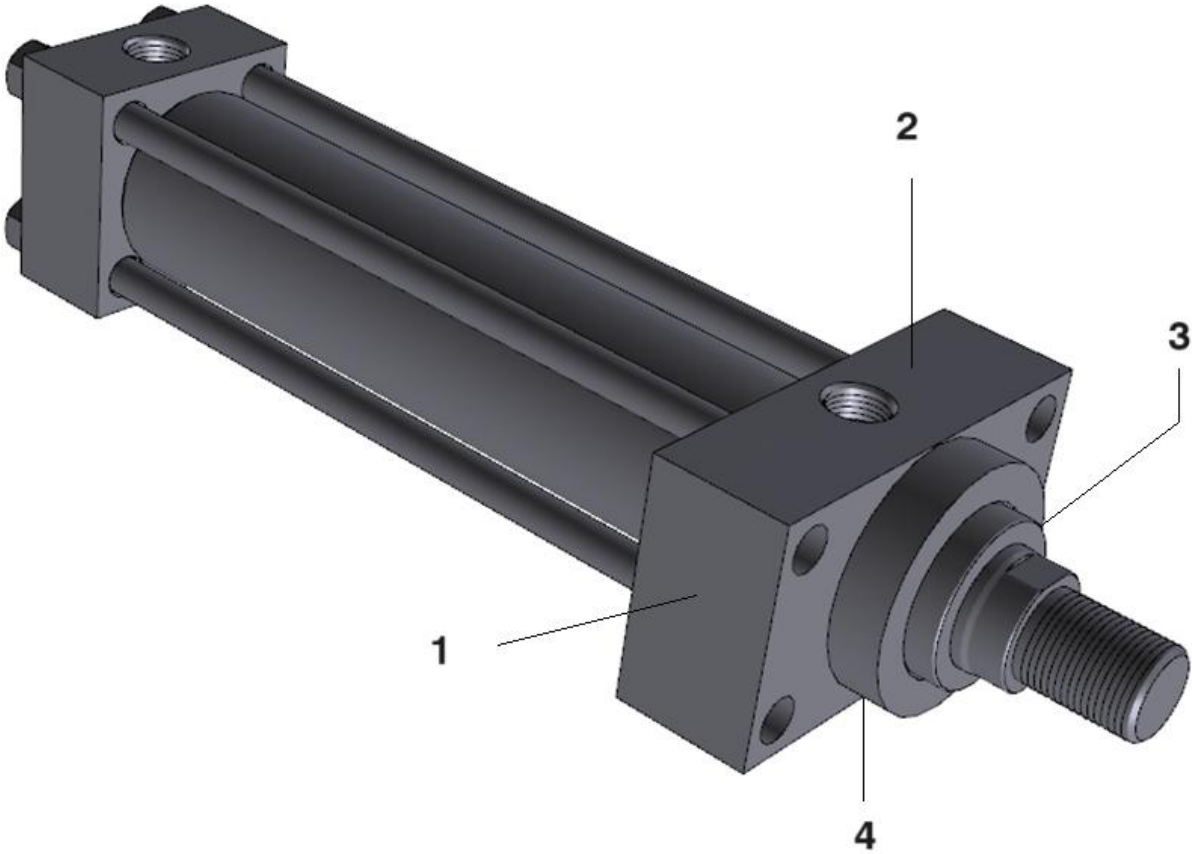
### Operation mode

Kod Code		Açıklama Description
201		Yastıklamasız No cushioning
204		Sabit yastıklamalı Çift etkili, her iki tarafta sabit yastıklamalı.  Adjustment free cushioning Double acting, adjustment free cushioning on both sides.
206		Sabit yastıklamalı Çift etkili, mil tarafında sabit yastıklamalı.  Adjustment free cushioning Double acting, adjustment free cushioning on front side.
208		Sabit yastıklamalı Çift etkili, piston tarafında sabit yastıklamalı.  Adjustment free cushioning Double acting, adjustment free cushioning on rear side.

## Yağ giriş pozisyonları

## Oil Port position

Kod Code	Açıklama Description
<b>A22</b>	Yağ giriş pozisyonu mil tarafı 2 Yağ giriş pozisyonu piston tarafı 2 Oil port head side position 2 Oil port rear side position 2



## Opsiyonlar

## Options

	Kod Code	Açıklama Description
<p>FKM (Viton®) Sızdırmazlık</p> <p>Hidrokrfaft HS160 seri hidrolik silindirler standart olarak 80°C'ye kadar olan ortamlar için uygundur.</p> <p>180°C'ye kadar ortamlar için FKM (Viton®) sızdırmazlık elemanları tercih edilmelidir.</p>	<b>V</b>	<p>FKM (Viton®) seals</p> <p>Hidrokrfaft HS160 series hydraulic cylinders are suitable for environments up to 80°C as standard.</p> <p>For media up to 180°C FKM (Viton®) seals should be preferred.</p>

### Kodlama

### Codification

HS160

50

/ 22

/ STROK

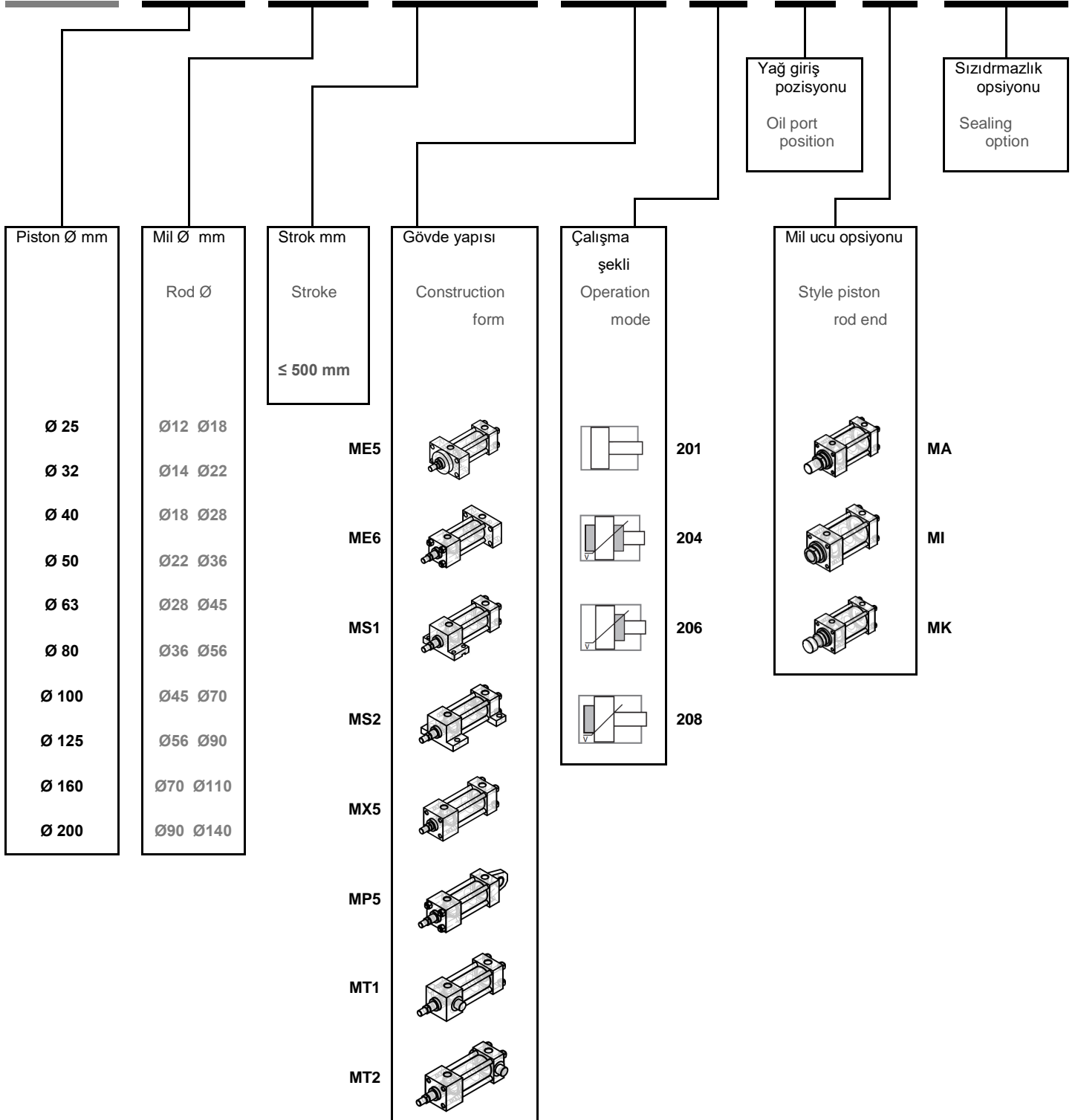
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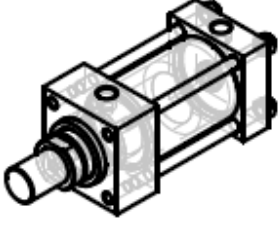
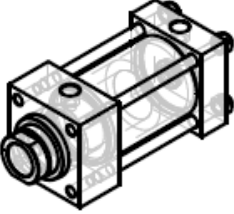
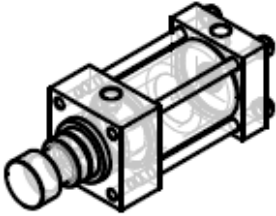
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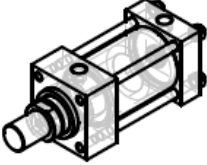
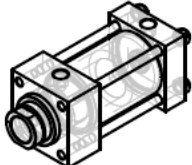
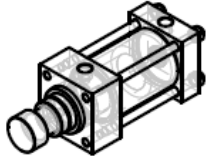
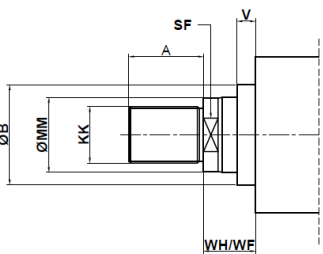
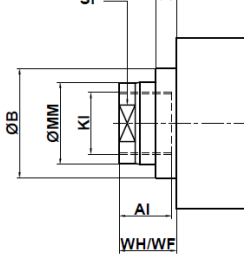
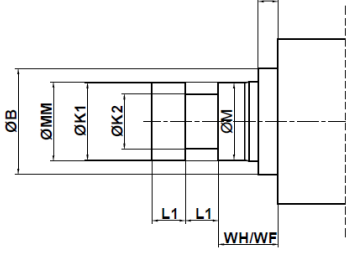
## Mil ucu Opsiyonlar

## Style piston rod end

	Kod Code	Açıklama Description
	<b>MA</b>	Dıştan dişli mil ucu Rod end with external thread
	<b>MI</b>	İçten dişli mil ucu Rod end with internal thread
	<b>MK</b>	Kaplin mil ucu Rod end with floating joint

### Mil ucu Opsiyonlar

### Style piston rod end

MA	MI	MK
		
		

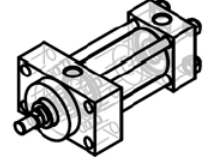
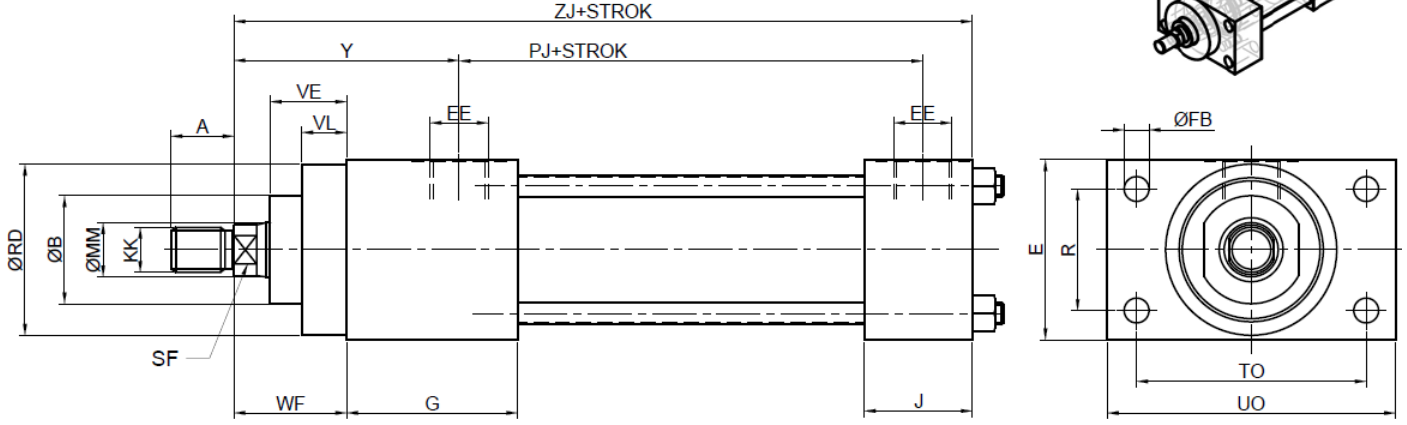
### Ölçüler

### Dimensions

Piston Ø	25		32		40		50		63		80		100		125		160		200	
Mil ØMM	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
<b>A</b>	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
<b>AI</b>	16	20	16	24	20	30	24	40	30	50	40	56	50	63	56	85	63	95	85	112
<b>ØB</b>	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
<b>KI ①</b>	M8x1.25		M8x1.25		M10x1.5		M12x1.75		M20x2.5		M27x3		M33x3.5		M42x2		M48x2		M64x3	
<b>KI ②</b>	M10x1.5		M12x1.75		M20x2.5		M27x3		M33x3.5		M42x2		M48x2		M64x3		M80x3		M100x3	
<b>KK ①</b>	M10x1.25		M12x1.25		M14x1.5		M16x1.5		M20x1.25		M27x2		M33x2		M42x2		M48x2		M64x3	
<b>KK ②</b>	M14x1.5		M16x1.5		M20x1.5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
<b>ØK1</b>	11	17	13	21	17	27	21	35	27	44	35	54	44	68	54	88	68	108	88	139
<b>ØK2</b>	7	12	9	15	12	19	15	24	19	33	24	40	33	50	40	64	50	80	64	95
<b>L1</b>	7	12	8	14	10	14	14	18	14	22	15	26	22	34	26	40	34	50	40	55
<b>ØM</b>	11	17	13	21	17	27	21	35	27	44	35	54	43	68	54	88	68	108	88	139
<b>SF</b>	10	15	11	18	15	24	18	32	24	40	32	50	40	60	50	**	60	**	**	**
<b>V</b>	7		8	12	8	12	9		11	13	9		9	10	10		7		7	
<b>WF *</b>	25		35		35		41		48		51		57		57		57		57	
<b>WH</b>	15		25		25		25		32		31		35		35		32		32	

\* Montaj şekli ME5 | Construction form ME5

\*\* Anahtar ağız yerine 3 delik |

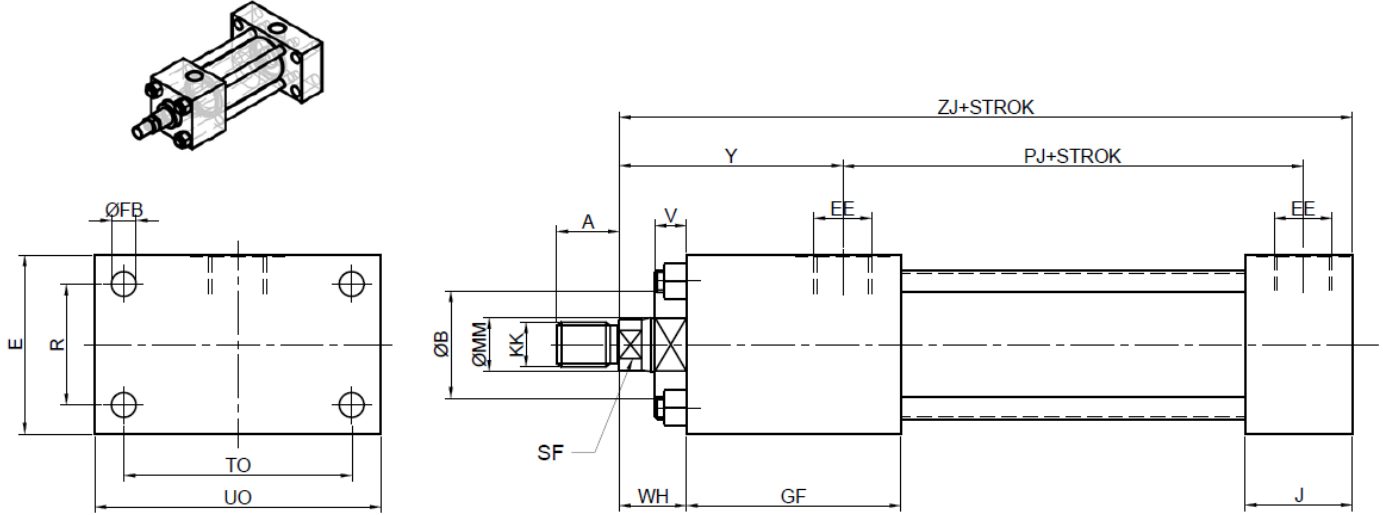


## ME5

### Ölçüler

### Dimensions

Piston $\varnothing$	25		32		40		50		63		80		100		125		160		200	
Mil $\varnothing MM$	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
<b>A</b>	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
<b><math>\varnothing B</math> f<sub>9</sub></b>	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
<b>E</b>	40		45		60 *		75		90		115		130		165		205		245	
<b>EE (BSP)</b>	G 1/4"		G 1/4"		G 3/8"		G 1/2"		G 1/2"		G 3/4"		G 3/4"		G 1"		G 1"		G 1 1/4"	
<b><math>\varnothing FB</math></b>	5,5		6,5		11		14		14		18		18		22		26		33	
<b>G</b>	38		38		43		43		43		49		50		56		56		76	
<b>J</b>	24		25		37		37		37		44		45		55		58		76	
<b>KK ①</b>	M10x1,25		M12x1,25		M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3	
<b>KK ②</b>	M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
<b>PJ</b>	53		56		73		74		80		93		101		117		130		165	
<b>R</b>	27		33		41		52		65		83		97		126		155		190	
<b>RD f<sub>8</sub></b>	38	38	42	42	62	62	74	74	75	88	82	105	92	125	105	150	125	170	150	210
<b>SF</b>	10	15	11	18	15	24	18	32	24	40	32	50	40	-	50	-	-	-	-	-
<b>TO</b>	51		58		87		105		117		149		162		208		253		300	
<b>UO</b>	64		70		109		128		142		180		190		247		297		347	
<b>VE</b>	17		18	22	18	22	25		27	29	29		31	32	32		32		32	
<b>VL</b>	10		10		10		16		16		20		22		22		25		25	
<b>WF</b>	25		35		35		41		48		51		57		57		57		57	
<b>Y</b>	50		60		62		67		71		77		82		86		86		98	
<b>ZJ</b>	114		128		153		159		167		190		203		232		243		301 *	

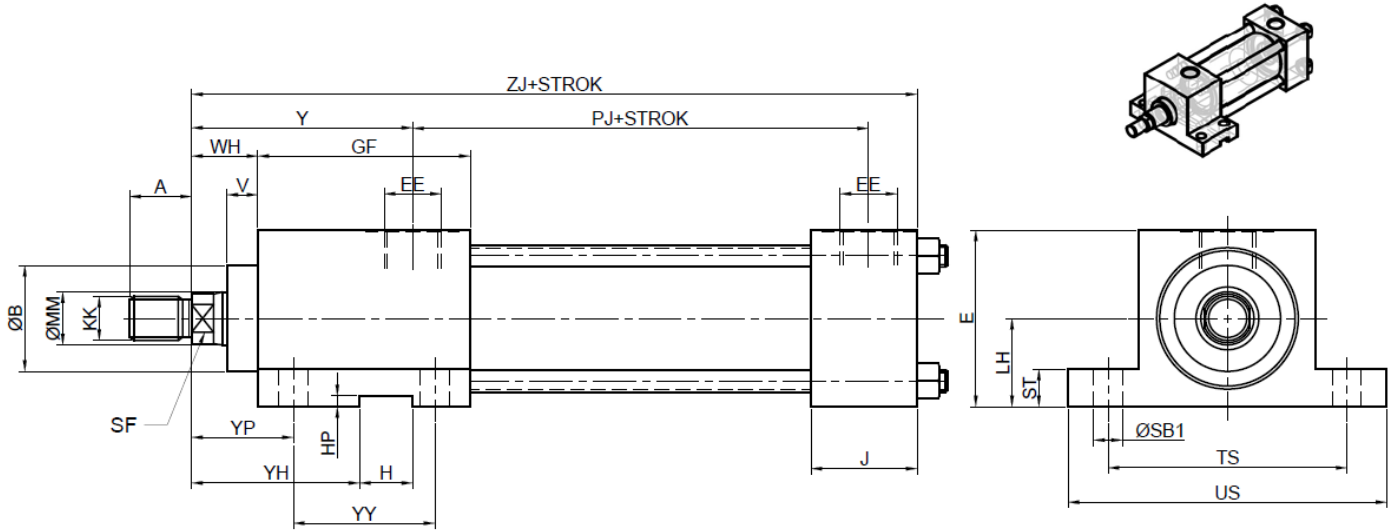


### ME6

#### Ölçüler

#### Dimensions

Piston Ø	25		32		40		50		63		80		100		125		160		200	
Mil ØMM	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
A	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
ØB f9	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
E	40		45		60 *		75		90		115		130		165		205		245	
EE (BSP)	G 1/4"		G 1/4"		G 3/8"		G 1/2"		G 1/2"		G 3/4"		G 3/4"		G 1"		G 1"		G 1 1/4"	
ØFB	5,5		6,5		11		14		14		18		18		22		26		33	
GF	48		48		53		59		59		69		72		78		81		101	
J	24		25		37		37		37		44		45		55		58		76	
KK ①	M10x1,25		M12x1,25		M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3	
KK ②	M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
PJ	53		56		73		74		80		93		101		117		130		165	
R	27		33		41		52		65		83		97		126		155		190	
SF	10	15	11	18	15	24	18	32	24	40	32	50	40	-	50	-	-	-	-	-
TO	51		58		87		105		117		149		162		208		253		300	
UO	64		70		109		128		142		180		190		247		297		347	
V	7	8	8	12	8	12	9	11	13	9	9	10	10	10	10	7	7	7	7	7
WH	15		25		25		25		32		31		35		35		32		32	
Y	50		60		62		67		71		77		82		86		86		98	
ZJ	114		128		153		159		167		190		203		232		243		301 *	

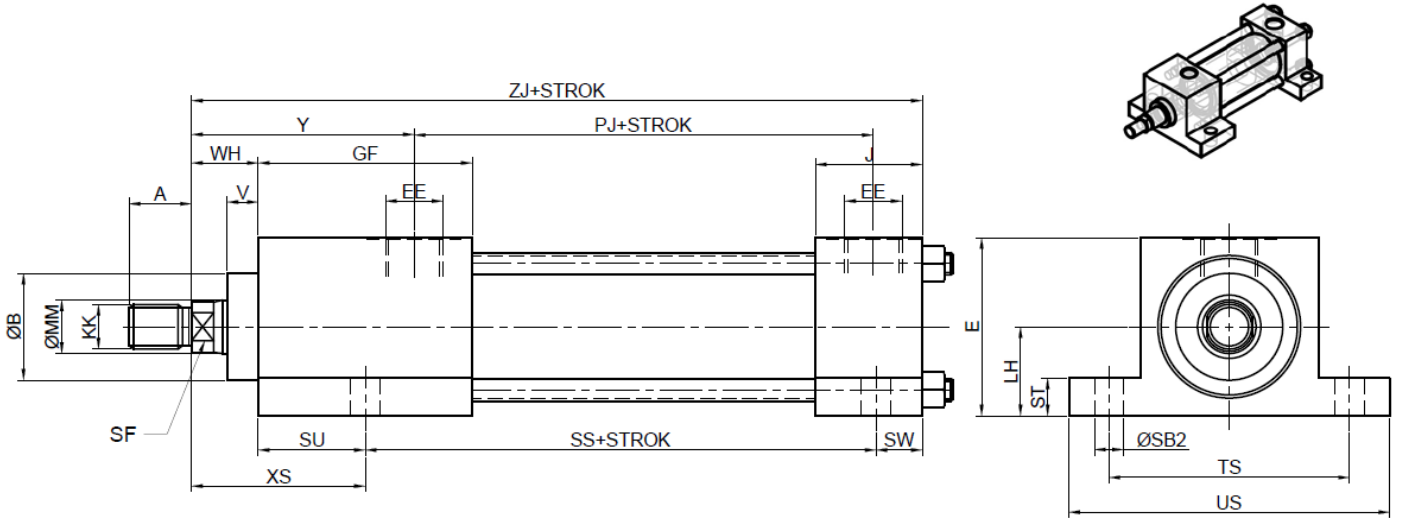


MS1

### Ölçüler

### Dimensions

Piston Ø	25		32		40		50		63		80		100		125		160		200	
Mil ØMM	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
A	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
ØB f9	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
E	40		45		60 *		75		90		115		130		165		205		245	
EE (BSP)	G 1/4"		G 1/4"		G 3/8"		G 1/2"		G 1/2"		G 3/4"		G 3/4"		G 1"		G 1"		G 1 1/4"	
GF	48		48		53		59		59		69		72		78		81		101	
H H10	12		12		12		12		16		16		16		-		-		-	
HP	2,5		2,5		4		5,5		6		6		6		-		-		-	
J	24		25		37		37		37		44		45		55		58		76	
KK ①	M10x1,25		M12x1,25		M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3	
KK ②	M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
LH	19		22		31		37		44		57		63		82		101		122	
PJ	53		56		73		74		80		93		101		117		130		165	
ØSB1	6,5		9		11		11		14		18		18		26		33		39	
SF	10	15	11	18	15	24	18	32	24	40	32	50	40	-	50	-	-	-	-	-
ST	8,5		12,5		12,5		19		26		26		32		32		38		44	
TS	54		63		83		102		124		149		172		210		260		311	
US	72		84		103		127		160		185		216		254		318		381	
V	7	8	12	8	12	9	11	13	9	9	10	10	10	10	7	7	7	7	7	7
WH	15		25		25		25		32		31		35		35		32		32	
Y	50		60		62		67		71		77		82		86		86		98	
YH	38		50		51		57		57		59		67		-		-		-	
YP	23		34,5		34		35		43		46		52		-		-		-	
YY	32		32		35		40		38		39		40		-		-		-	
ZJ	114		128		153		159		167		190		203		232		243		301 *	

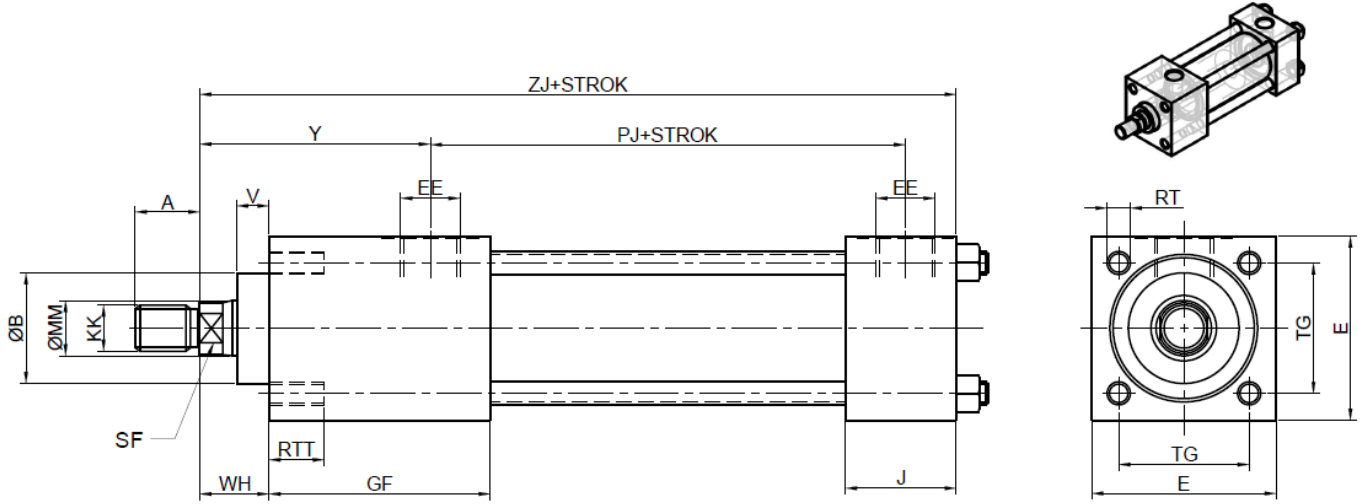


## MS2

### Ölçüler

### Dimensions

Piston Ø	25		32		40		50		63		80		100		125		160		200	
Mil ØMM	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
A	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
ØB f9	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
E	40		45		60 *		75		90		115		130		165		205		245	
EE (BSP)	G 1/4"		G 1/4"		G 3/8"		G 1/2"		G 1/2"		G 3/4"		G 3/4"		G 1"		G 1"		G 1 1/4"	
GF	48		48		53		59		59		69		72		78		81		101	
J	24		25		37		37		37		44		45		55		58		76	
KK ①	M10x1,25		M12x1,25		M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3	
KK ②	M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
LH	19		22		31		37		44		57		63		82		101		122	
PJ	53		56		73		74		80		93		101		117		130		165	
Ø SB2	6,5		9		11		11		14		18		18		26		33		39	
SF	10	15	11	18	15	24	18	32	24	40	32	50	40	-	50	-	-	-	-	-
SS	73		73		98		92		86		105		102		131		130		172	
SU	18		20		20		29		33		37		44		44		54		74	
ST	8,5		12,5		12,5		19		26		26		32		32		38		44	
TS	54		63		83		102		124		149		172		210		260		311	
US	72		84		103		127		160		185		216		254		318		381	
V	7		8	12	8	12	9		11	13	9		9	10	10		7		7	
WH	15		25		25		25		32		31		35		35		32		32	
XS	33		45		45		54		65		68		79		79		86		106	
Y	50		60		62		67		71		77		82		86		86		98	
ZJ	114		128		153		159		167		190		203		232		243		301 *	

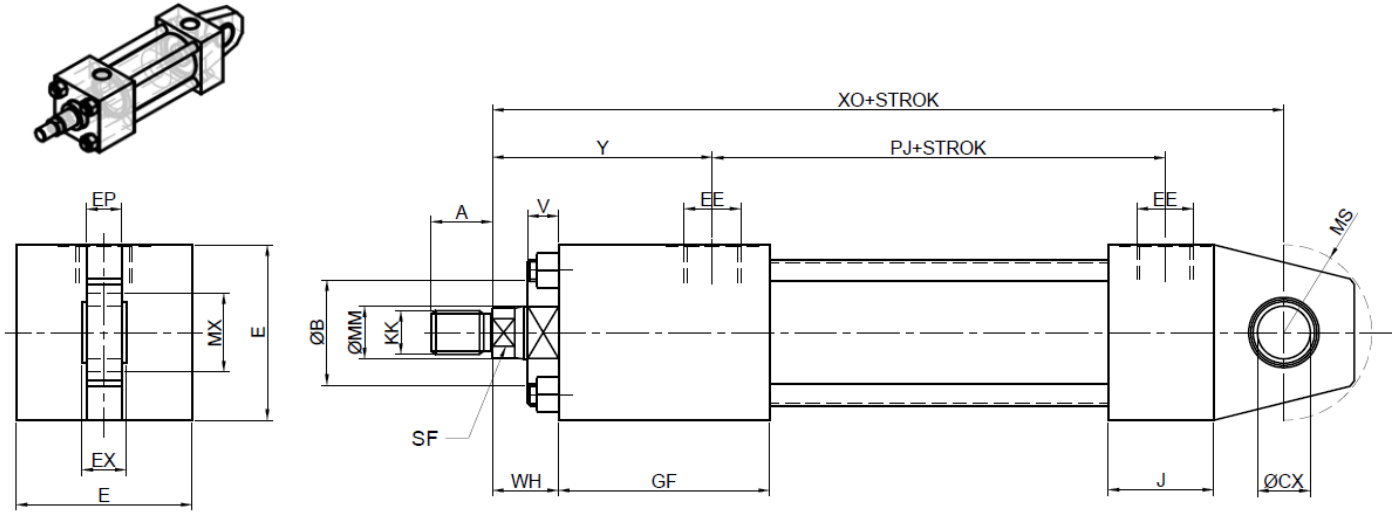


## MX5

### Ölçüler

### Dimensions

Piston Ø	25		32		40		50		63		80		100		125		160		200	
Mil ØMM	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
<b>A</b>	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
<b>ØB f9</b>	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
<b>E</b>	40		45		60 *		75		90		115		130		165		205		245	
<b>EE (BSP)</b>	G 1/4"		G 1/4"		G 3/8"		G 1/2"		G 1/2"		G 3/4"		G 3/4"		G 1"		G 1"		G 1 1/4"	
<b>GF</b>	48		48		53		59		59		69		72		78		81		101	
<b>J</b>	24		25		37		37		37		44		45		55		58		76	
<b>KK ①</b>	M10x1,25		M12x1,25		M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3	
<b>KK ②</b>	M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
<b>PJ</b>	53		56		73		74		80		93		101		117		130		165	
<b>RT</b>	M5		M6		M8		M12		M12		M16		M16		M22		M27		M30	
<b>RTT</b>	12		15		20		25		25		30		30		30		30		40	
<b>SF</b>	10	15	11	18	15	24	18	32	24	40	32	50	40	-	50	-	-	-	-	-
<b>TG</b>	28,3		33,2		41,7		52,3		64,3		82,7		96,9		125,9		154,9		190,2	
<b>V</b>	7		8	12	8	12	9	11	13	9	9	10	10	10	10	7	7	7	7	7
<b>WH</b>	15		25		25		25		32		31		35		35		32		32	
<b>Y</b>	50		60		62		67		71		77		82		86		86		98	
<b>ZJ</b>	114		128		153		159		167		190		203		232		243		301 *	

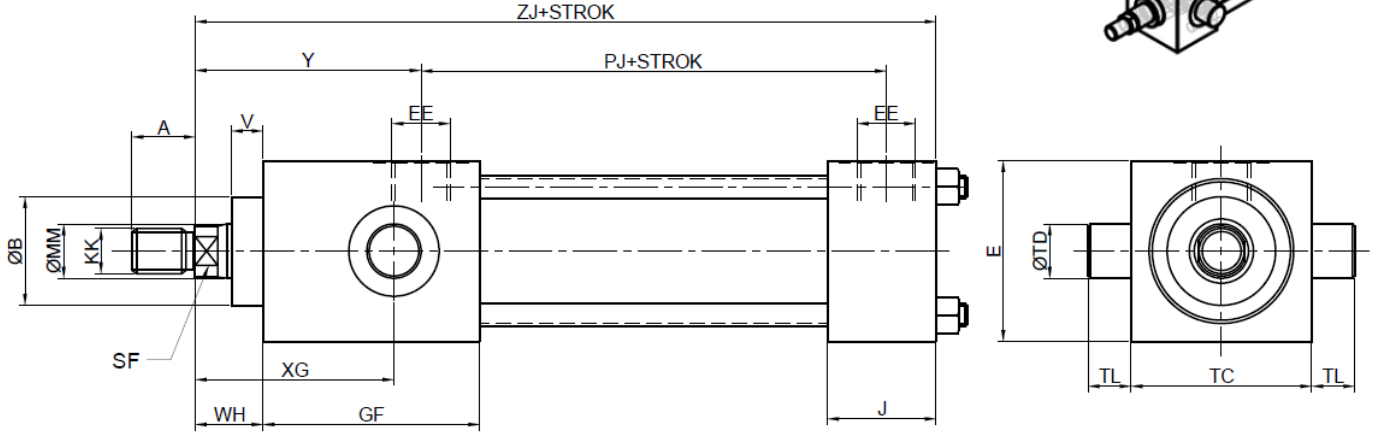
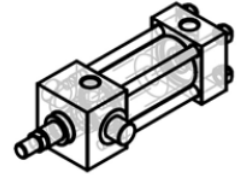


### MP5

#### Ölçüler

#### Dimensions

Piston Ø	25		32		40		50		63		80		100		125		160		200	
Mil ØMM	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
<b>A</b>	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
<b>ØB f9</b>	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
<b>CX H7</b>	12		16		20		25		30		40		50		60		80		100	
<b>E</b>	40		45		60 *		75		90		115		130		165		205		245	
<b>EE (BSP)</b>	G 1/4"		G 1/4"		G 3/8"		G 1/2"		G 1/2"		G 3/4"		G 3/4"		G 1"		G 1"		G 1 1/4"	
<b>EP</b>	8		10		13		17		18		22		28		38		47		57	
<b>EX h12</b>	10		14		16		20		22		28		35		44		55		70	
<b>GF</b>	48		48		53		59		59		69		72		78		81		101	
<b>J</b>	24		25		37		37		37		44		45		55		58		76	
<b>KK ①</b>	M10x1,25		M12x1,25		M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3	
<b>KK ②</b>	M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
<b>MS</b>	20		22,5		29		33		40		50		62		80		100		120	
<b>MX</b>	18		25		29		35,5		40,7		53		66		80		105		130	
<b>PJ</b>	53		56		73		74		80		93		101		117		130		165	
<b>SF</b>	10	15	11	18	15	24	18	32	24	40	32	50	40	-	50	-	-	-	-	-
<b>V</b>	7		8		12		8		12		9		11		13		9		9	
<b>WH</b>	15		25		25		25		32		31		35		35		32		32	
<b>XO</b>	130		148		178		190		205		238		261		304		336		416	
<b>Y</b>	50		60		62		67		71		77		82		86		86		98	

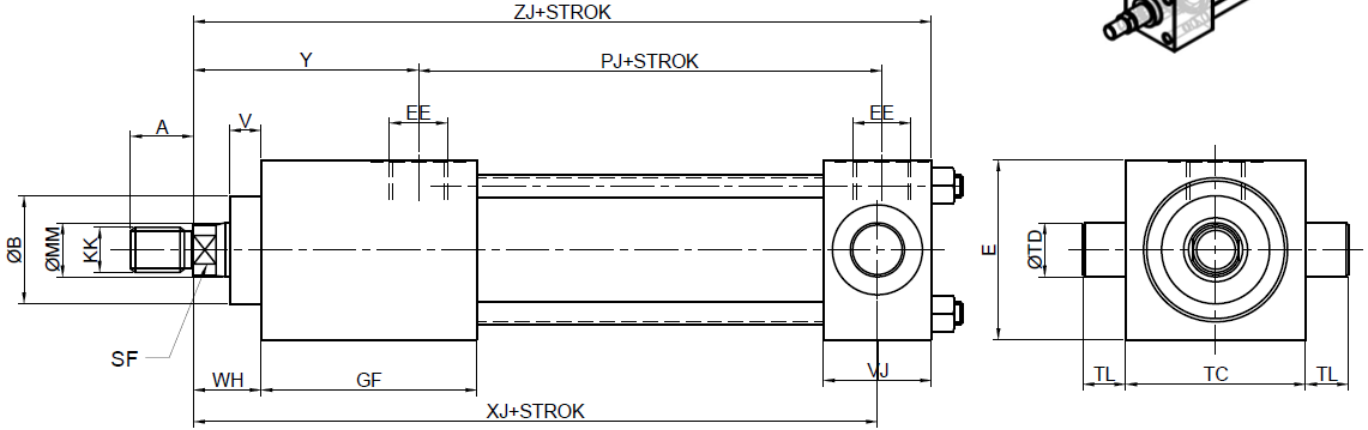


## MT1

### Ölçüler

### Dimensions

Piston Ø	25		32		40		50		63		80		100		125		160		200	
Mil ØMM	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
A	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
ØB f9	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
E	40		45		60 *		75		90		115		130		165		205		245	
EE (BSP)	G 1/4"		G 1/4"		G 3/8"		G 1/2"		G 1/2"		G 3/4"		G 3/4"		G 1"		G 1"		G 1 1/4"	
GF	48		48		53		59		59		69		72		78		81		101	
J	24		25		37		37		37		44		45		55		58		76	
KK ①	M10x1,25		M12x1,25		M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3	
KK ②	M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
PJ	53		56		73		74		80		93		101		117		130		165	
SF	10	15	11	18	15	24	18	32	24	40	32	50	40	-	50	-	-	-	-	-
TC h12	38		44		63		76		89		114		127		165		203		241	
ØTD f9	12		16		20		25		32		40		50		50 *		56 *		75 *	
TL	10		12		16		20		25		32		40		40 *		45 *		63 *	
V	7		8	12	8	12	9		11	13	9		9	10	10		7		7	
WH	15		25		25		25		32		31		35		35		32		32	
XG	44		54		57		64		70		76		71		75		75		85	
Y	50		60		62		67		71		77		82		86		86		98	
ZJ	114		128		153		159		167		190		203		232		243		301 *	



## MT2

### Ölçüler

### Dimensions

Piston Ø	25		32		40		50		63		80		100		125		160		200	
Mil ØMM	12	18	14	22	18	28	22	36	28	45	36	56	45	70	56	90	70	110	90	140
A	14	18	16	22	18	28	22	36	28	45	36	56	45	63	56	85	63	95	85	112
ØB f9	24	30	26	34	30	42	34	50	42	60	50	72	60	88	72	108	88	133	108	163
E	40		45		60 *		75		90		115		130		165		205		245	
EE (BSP)	G 1/4"		G 1/4"		G 3/8"		G 1/2"		G 1/2"		G 3/4"		G 3/4"		G 1"		G 1"		G 1 1/4"	
GF	48		48		53		59		59		69		72		78		81		101	
KK ①	M10x1,25		M12x1,25		M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3	
KK ②	M14x1,5		M16x1,5		M20x1,5		M27x2		M33x2		M42x2		M48x2		M64x3		M80x3		M100x3	
PJ	53		56		73		74		80		93		101		117		130		165	
SF	10	15	11	18	15	24	18	32	24	40	32	50	40	-	50	-	-	-	-	-
TC h12	38		44		63		76		89		114		127		165		203		241	
ØTD f9	12		16		20		25		32		40		50		50 *		56 *		75 *	
TL	10		12		16		20		25		32		40		40 *		45 *		63 *	
V	7		8	12	8	12	9		11	13	9		9	10	10		7		7	
VJ	24		25		37		37		37		44		55		55		60		80	
WH	15		25		25		25		32		31		35		35		32		32	
XJ	101		115		134		140		149		168		185,5 *		204,5 *		215 *		265 *	
Y	50		60		62		67		71		77		82		86		86		98	
ZJ	114		128		153		159		167		190		213 *		232		245		305	