



P-MS18.MSE18

Hydraulic Motors



www.yeoshehydraulic.com

Efficient Performance
Innovative Technology
Reliable Quality and Service

YEOSHE HYDRAULICS CO.,LTD.

characteristics

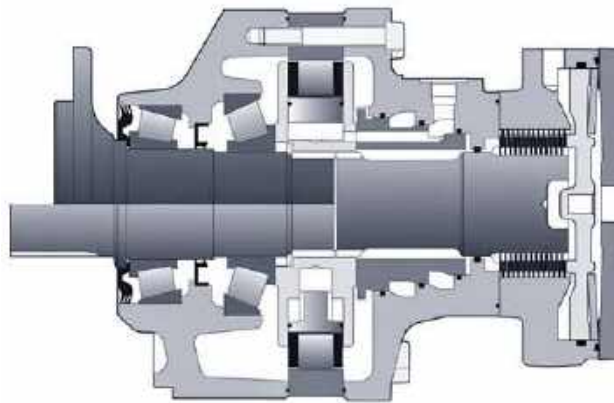


- P-MS18 Max. pressure

Cams with equal lobes	450 bar [6,527 PSI]
Cams with unequal lobes	450 bar [6,527 PSI]

- P-MSE18 Max. pressure

Cams with equal lobes	400 bar [5,802 PSI]
Cams with unequal lobes	400 bar [5,802 PSI]



M

1

P-MS18.MSE18 series

C		Cams with equal lobes									Cams with unequal lobes												
		P-MS18						P-MSE18			P-MS18						P-MSE18						
		6	8	9	0	1	2	0	1	2	P	K	D	F	A	B	P	K	D	F	A	B	
Theoretical torque	①	cm ³ /tr [cu.in/rev.]	1,091 [66.5]	1,395 [85.1]	1,571 [95.8]	1,747 [106.5]	1,911 [116.6]	2,099 [128.0]	2,340 [142.7]	2,560 [156.1]	2,812 [171.5]	2,340 [142.7]	2,560 [156.1]	2,812 [171.5]	834 [50.9]	936 [57.1]	1 043 [63.6]	624 [38.1]	700 [42.7]	780 [47.6]	834 [50.9]	936 [57.1]	1 043 [63.6]
	②	cm ³ /tr [cu.in/rev.]	546 [33.3]	698 [42.5]	786 [47.9]	874 [53.3]	956 [58.3]	1,050 [64.0]	1,170 [71.4]	1,280 [78.1]	1,406 [85.8]	874 [53.3] 627 [38.2]	956 [58.3] 545 [33.2]	1,049 [64.0] 523 [31.9]	990 [60.4] 660 [40.3]	1,049 [64.0] 698 [42.6]	1,049 [64.0] 698 [42.6]	1,170 [71.4] 840 [51.2]	1,280 [78.1] 730 [44.5]	1,406 [85.8] 700 [42.7]	1,326 [80.9] 883 [53.9]	1,406 [85.8] 935 [57.0]	1,406 [85.8] 1,093 [66.7]
	①	at 100 bar/Nm	1,735	2,218	2,498	2,778	3,038	3,337	3,721	4,070	4,471	2,387	2,387	2,499	2,624	2,775	2,965	3,196	3,196	3,349	3,512	3,722	3,973
		at 1000 PSI [lb.ft]	[882]	[1,128]	[1,270]	[1,413]	[1,545]	[1,697]	[1,892]	[2,070]	[2,274]	[1,214]	[1,214]	[1,271]	[1,334]	[1,411]	[1,508]	[1,625]	[1,625]	[1,703]	[1,786]	[1,893]	[2,021]
		①	kw [HP]	70 [94]						70 [94]			70 [94]						70 [94]				
Max. power	②	preferred kw [HP]	47 [63]						47 [63]			47 [63]						47 [63]					
	②	non- preferred kw [HP]	35 [47]						35 [47]			35 [47]						35 [47]					
	①	tr/min [RPM]	170	155	140	125	115	100	90	85	75	125	115	100	110	100	100	90	85	75	85	75	75
Max. speed*	②	tr/min [RPM]	170	160	155	150	135	125	110	100	90	150	135	125	135	125	125	110	100	90	95	90	90

- 1 First displacement
2 Second displacement

Motor inertia = 0.2 kg.m²

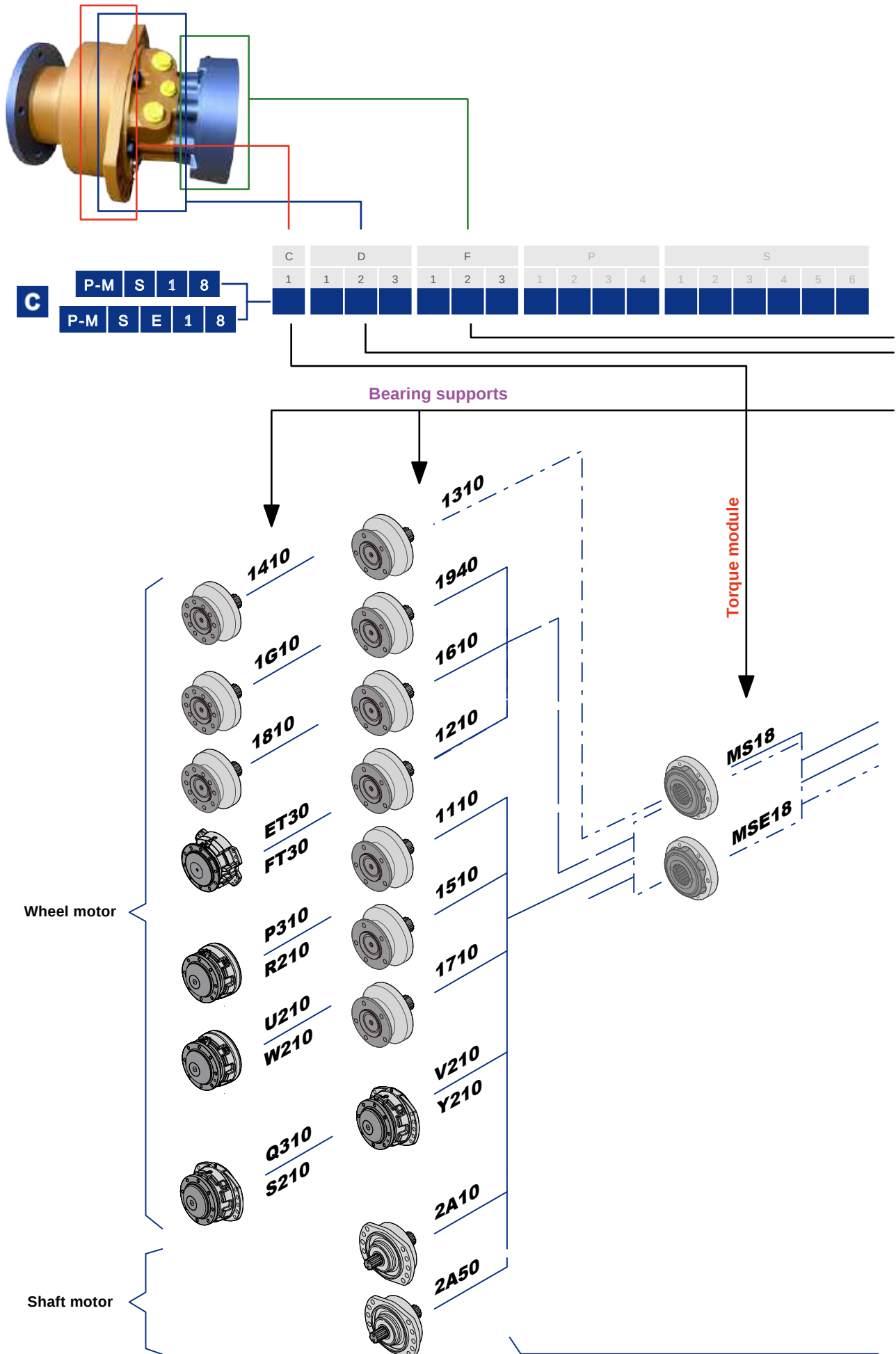
* See option "M" for higher speed.

Modularity

M

2

P-MS18.MSE18 series



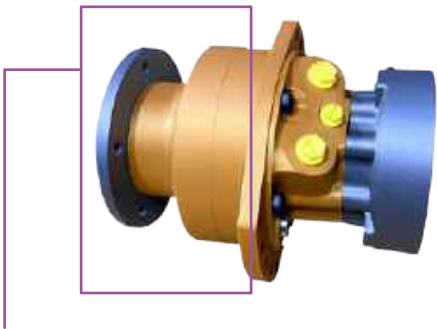
Modularity



M

3

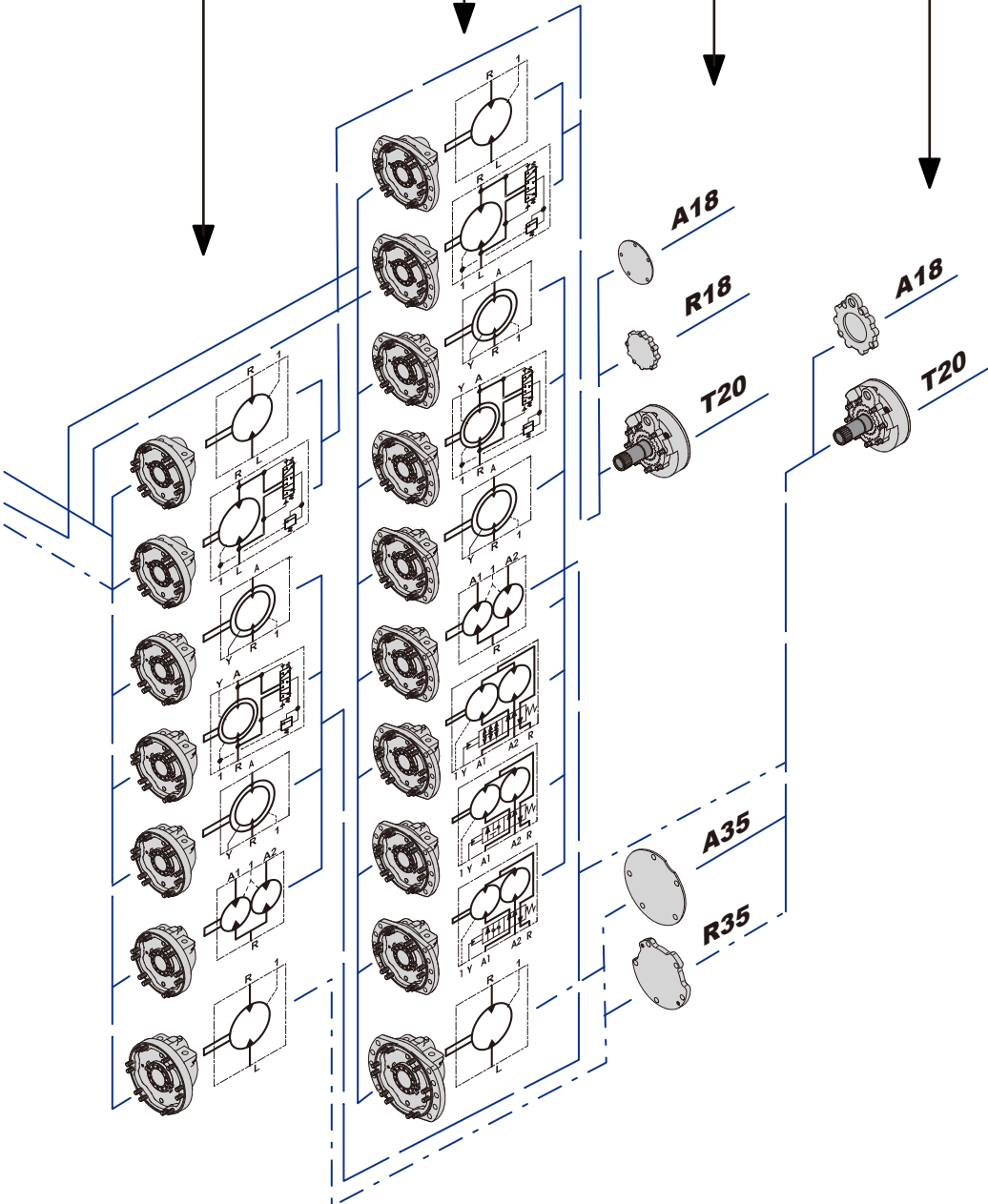
P-MS18.MSE18 series



C	P-M S 1 8				C D 1 2 3				F 1 2 3				P 1 2 3 4				S 1 2 3 4 5 6					
	P-M	S	1	8	1	2	3		1	2	3		1	2	3	4	1	2	3	4	5	6

Valving systems

Brakes



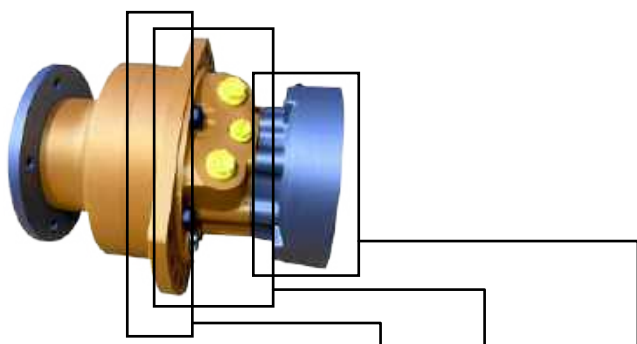
Hydrobases

Modelcode

M

4

P-MS18.MSE18 series



C					C	D			F			P				S								
P-M					S	1	8	1	1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
P-M					S	E	1	8									0							

Came type

C1	Cam type					
			1 cm³/tr [cu.in/rev.]	2		
Cams with equal lobes	P-MS18	1,091 [66.5]	546 [33.3]	6		
		1,395 [85.1]	698 [42.5]	8		
		1,571 [95.8]	786 [47.9]	9		
		1,747 [106.5]	874 [53.3]	0		
		1,911 [116.6]	956 [58.3]	1		
		2,099 [128.0]	1050 [64.0]	2		
	P-MSE18	2,340 [142.7]	1170 [71.4]	0		
		2,560 [156.1]	1280 [78.1]	1		
		2,812 [171.5]	1406 [85.8]	2		
	Cams with unequal lobes	P-MS18	1,501 [91.5]	874 [53.3] 627 [38.2]	P	
			1,501 [91.5]	956 [58.3] 545 [33.2]	K	
			1,572 [95.9]	1049 [64.0] 523 [31.9]	D	
			1,650 [100.6]	990 [60.4] 660 [40.3]	F	
			1,745 [106.4]	1049 [64.0] 698 [42.6]	A	
			1,865 [113.7]	1049 [64.0] 816 [49.8]	B	
			P-MSE18	2,010 [122.6]	1170 [71.4] 840 [51.2]	P
				2,010 [122.6]	1280 [78.1] 730 [44.5]	K
		2,106 [128.4]		1406 [85.8] 700 [42.7]	D	
2,209 [134.7]		1326 [80.9] 883 [53.9]		F		
2,341 [142.8]		1406 [85.8] 935 [57.0]		A		
2,499 [152.4]		1406 [85.8] 1093 [66.7]		B		

1 First displacement

2 Second displacement

Valving type

D1	1-displacement valving		1
	Symmetrical	Ratio 2	A
		Ratio < 2	B
		Ratio > 2	C
	2-displacement & Twin-Lock valving (Clockwise)	Ratio 2	D ⁺
		Ratio < 2	E
		Ratio > 2	F ⁺
	2-displacement & Twin-Lock valving (Counterclockwise)	Ratio 2	G
		Ratio < 2	H ⁺
		Ratio > 2	J ⁺

+ For Boosted Braking (option U becomes mandatory).

Valving cover

D2	Valving	S18	Without mounting	1	1	4	D	P	K	L
			Lug fixing	2	2	5	E	Q	V	M
	S35	Without mounting	B							
		Lug fixing	C							

1 Displacement
2 Displacement
Exchange
Twin-Lock
Twin-Lock or
2-displacement
2-displacement or
Twin-Lock
Twin-Lock with by-pass

Connection type

D3	No transmission cover		0
	ISO 6162	Flanges	1
	ISO 9974-1	connections	2
	ISO 6162	Flanges	DN19
	ISO 1179-1	connections	2
	ISO 9974-1	connections	M27 x 2
	ISO DP6162	Flanges	1
	ISO 6149-1	connections	2
	ISO DP6162	Flanges	DN19
	ISO 6149-1	connections	2
	ISO DP6162	Flanges	DN25
	ISO 6149-1	connections	S35 1C
	ISO 6149-1	connections	DN32
	ISO 11926-1	connections	1" 1/16-12 UNF

1 First displacement

2 Second displacement

Rear brake

F1 F3	Valving	S18/SE18	Without brake	Standard plate	A18
				With reinforced plate	R18
			T20 Parking brake		T20
		S35	Without brake		A35
			Without brake (reinforced plate)		R35

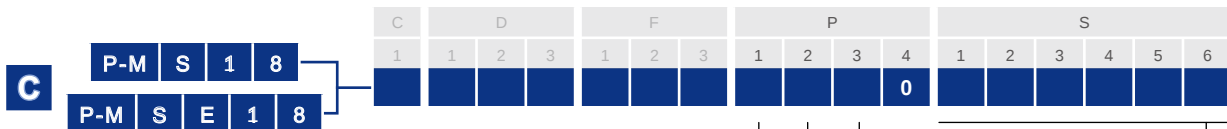
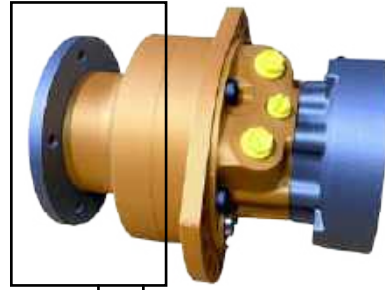


Modelcode

M

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P-MS18.MSE18 series



Front unit

P1	Without bearing support		0
	Without mounting		1
	Lug mounting		2
	Valving	C27 valving cover fixation	E
		chassis fixation	F
		P27 valving cover fixation	P
		chassis fixation	Q
		P20 valving cover fixation	R
		chassis fixation	S
	S20	valving cover fixation	single control command U
		chassis fixation	V
		valving cover fixation	double control command W
		chassis fixation	Y

Shaft Specifications

P3	Shaft type	
	Without studs	1
	With studs + nuts	2
	With studs	3
	M threaded holes	4
	Male shafts	
	NF E22-141 splines	1
	DIN 5480 splines	5

Bearing support

P2	Without shaft	0
	10 x Ø24 on Ø225	1
	8 x Ø22 on Ø275 (Standard for S20/P20 brake)	2
	10 x Ø24 on Ø225 (Standard for P27 brake)	3
	10 x Ø24 on Ø335 (for studs length of 80 mm)	5
	10 x Ø24 on Ø335 (Standard for C27 brake) (for studs length of 65 mm)	T
	10 x Ø24 on Ø225	6
	12 x Ø24 on Ø275	7
	18 x M16 on Ø254	8
	8 x M22 on Ø275	9
	Support without drum brake	G
	For male shaft bearing support	A

Options

S1 S6	Without options or adaptations	0
	Fluorinated elastomer seals	1
	T4 speed sensor (without rotation direction)	2
	Brake environmental cover without plug	3
	Drainage	5
	Industrial bearing support	6
	Diamond	7
	Predisposition for speed sensor	8
	Hollow shaft	A
	Drain on the bearing support	B
	Abrasive environment	C
	Special paint or without paint	D
	Reinforced sealing	E
	Special wheel rim mounting	G
	High performance	H
	Surface heat treatment of the shaft	J
	High speed	M
	TR speed sensor (digital rotation direction)	S
	TD speed sensor (two phase shifted frequencies)	Q
	Boosted Braking	U

M

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P-MS18.MSE18 series

Important notes and warnings are indicated



Safety comment.

Expressed as follows



Essential instructions.



General information.



Information on the model number.



Weight of component without oil.



Volume of oil.



Units.



Tightening torque.

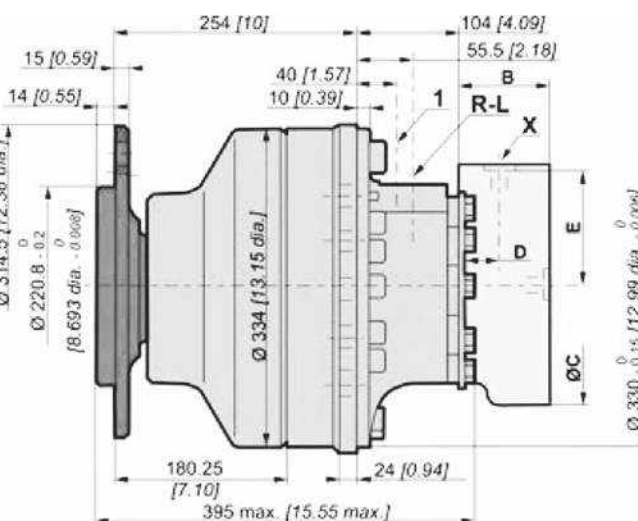


Screws.



Information intended for personnel.

The dimensional data is given in mm and in inches (inches are given in brackets in *italics*).



	120 kg [264 lb]	170 kg [374 lb]
	3.00 L [180 cu.in]	2.50 L [150 cu.in]
		

M

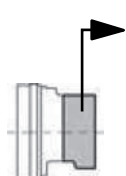
P-MS18.MSE18 series

[illegible]

 130 kg [286 lb]	160 kg [352 lb]
 3.00 L [180 cu.in]	2.50 L [150 cu.in]
	

[illegible]

	130 kg [286 lb]	160 kg [352 lb]
	3.00 L [180 cu.in]	2.50 L [150 cu.in]
		



C	T 2 0
B	115 [4.53]
C	Ø282 [11.10]
D	45 [1.77]
E	128.5 [5.06]

Also see 'Valving systems and hydrobases' section
(thumbnail opposite).

Wheel Motor

M

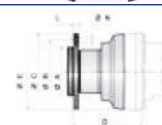
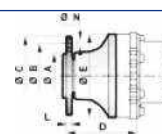
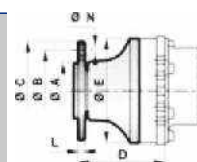
8

P-MS18.MSE18 series

Support types

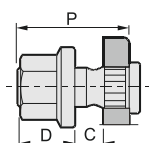
C					D			F			P				S					
1	1	2	3		1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
P-M	S	1	8																	
P-M	S	E	1	8																

C	A mm [in]	B mm [in]	C mm [in]	D mm [in]	E mm [in]	N mm [in]	Wheel rim mountings	L mm [in]
P 1 2 3 4 1 1 1 0	Ø 175.7 [6.92 dia.]	Ø 225 [8.86 dia.]	Ø 265 [10.43 dia.]	253.45 [9.98]	Ø 334 [13.15 dia.]	Ø 24 [0.94 dia.]	10 x M22x1.5	14 [0.55]
P 1 2 3 4 1 2 1 0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 314 [12.36 dia.]	253.25 [9.97]	Ø 334 [13.15 dia.]	Ø 22 [0.87 dia.]	10 x M20x1.5	14 [0.55]
P 1 2 3 4 1 7 1 0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 314 [12.36 dia.]	253.25 [9.97]	Ø 334 [13.15 dia.]	Ø 24 [0.94 dia.]	12 x M22x1.5	18 [0.71]
P 1 2 3 4 1 3 1 0	Ø 175.7 [6.92 dia.]	Ø 225 [8.86 dia.]	Ø 276 [10.87 dia.]	208.75 [8.22]	Ø 334 [13.15 dia.]	Ø 24 [0.94 dia.]	10 x M22x1.5	14 [0.55]
P 1 2 3 4 1 8 4 0	Ø 220.7 [8.69 dia.]	Ø 254 [10.00 dia.]	Ø 285 [11.22 dia.]	163.2 [6.43]	Ø 334 [13.15 dia.]	—	18 x M16x1.5	15 [0.59]
P 1 2 3 4 1 5 1 0	Ø 280.7 [11.05 dia.]	Ø 335 [13.19 dia.]	Ø 382 [15.04 dia.]	292.2 [11.50]	Ø 334 [13.15 dia.]	Ø 24 [0.94 dia.]	10 x M22x1.5	25 [0.98]
P 1 2 3 4 1 6 1 0	Ø 175.7 [6.92 dia.]	Ø 225 [8.86 dia.]	Ø 265 [10.43 dia.]	208.75 [8.22]	Ø 334 [13.15 dia.]	Ø 24 [0.94 dia.]	10 x M22x1.5	16.5 [0.65]
P 1 2 3 4 1 9 1 0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 314 [12.36 dia.]	208.8 [8.22]	Ø 334 [13.15 dia.]	Ø 22 [0.87 dia.]	8 x M20x1.5	18 [0.71]
P 1 2 3 4 1 G 1 0	Ø 280.7 [11.05 dia.]	Ø 335 [13.19 dia.]	Ø 385 [15.16 dia.]	301.0 [11.85]	Ø 334 [13.15 dia.]	Ø 24 [0.94 dia.]	10 x M22x1.5	14 [0.55]



The supports in gray must not be assembled with an MSE hydrobase.

Studs



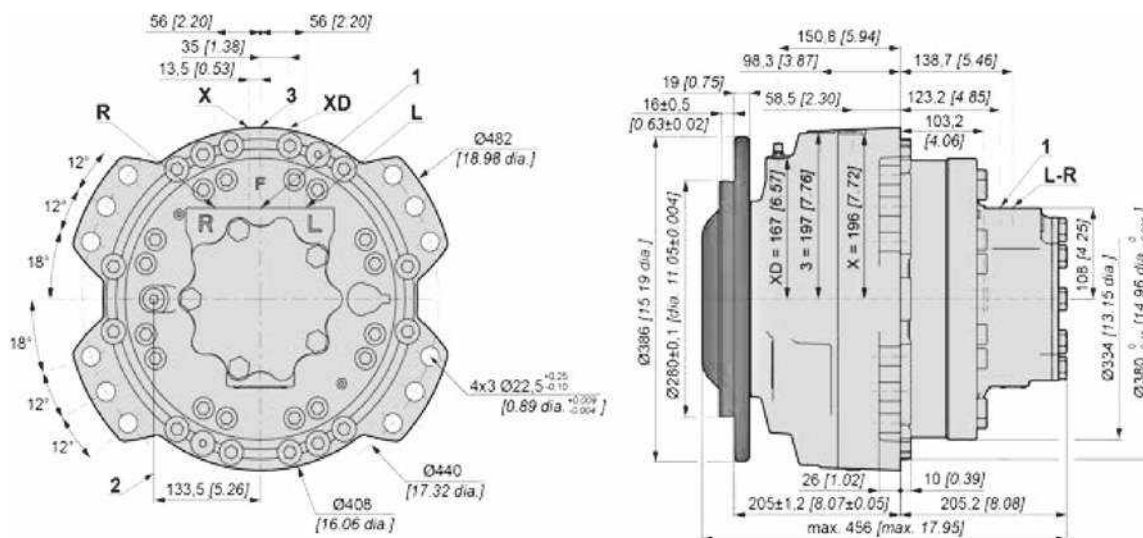
		P mm [in]	C min. mm [in]	C max. mm [in]	D mm [in]	Class
Various studs	M16 x 2	50 [1.97]	5 [0.20]	17.75 [0.70]	21 [0.83]	12.9
	M20 x 1.5	60 [2.36]		20 [0.79]	25 [0.98]	
	M20 x 1.5	70 [2.76]		27 [1.06]	25 [0.98]	
	M22 x 1.5	65 [2.56]		24 [0.94]	26 [1.02]	
	M22 x 1.5	80 [3.15]		29 [1.14]	26 [1.02]	
Screws	M16 x 1.5	-	-	-	-	10.9
	M20 x 1.5	-	-	-	-	



See generic installation motors N°B59689D.

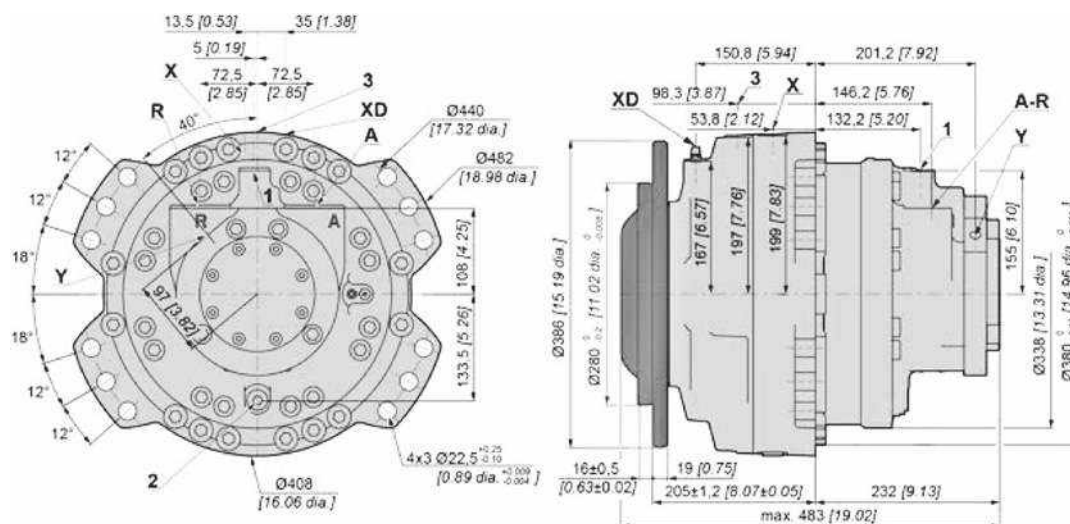
Wheel Motor

Dimensions for standard (FT30) 1-displacement motor



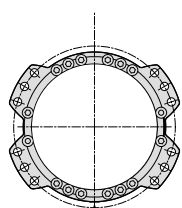
 215 kg [473 lb]

Dimensions for standard (FT30) 2-displacement motor



Brake bearing support orientation

 236 kg [519 lb]



Radial forces



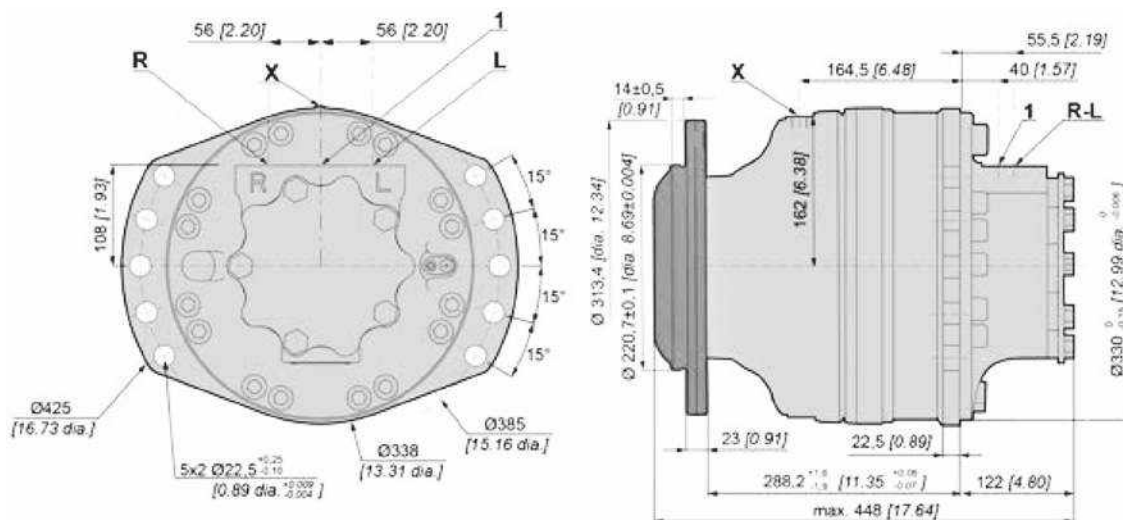
Recommended orientation :
Radial forces to be oriented along the brake bearing support axis.



Warn the end user in the user documentation to perform
an inspection of the shaft after any abnormal shock at wheel.

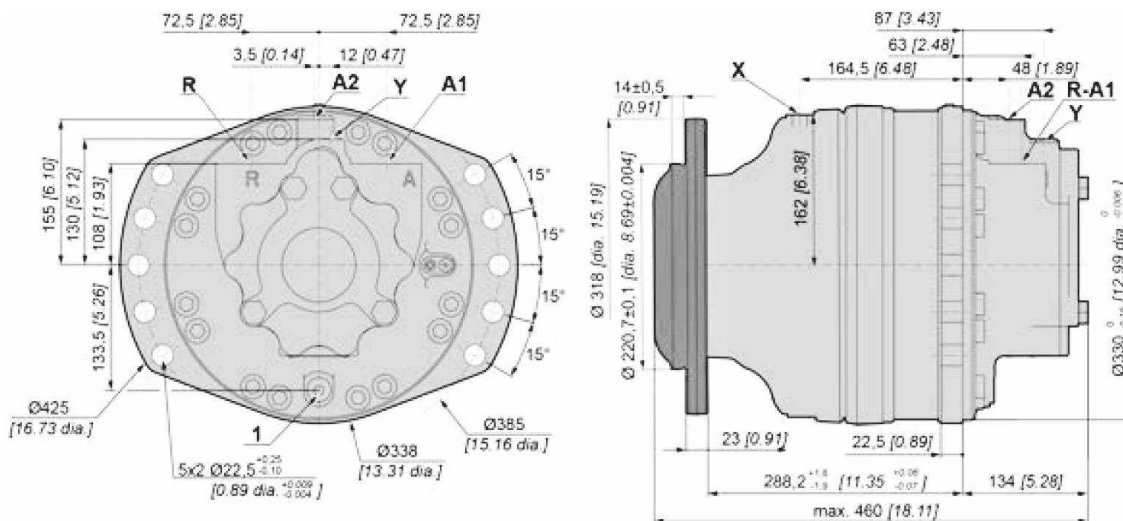
Wheel Motor

Dimensions for standard (P310) 1-displacement motor



220 kg [485 lb]

Dimensions for standard (P310) 2-displacement motor



222 kg [489 lb]



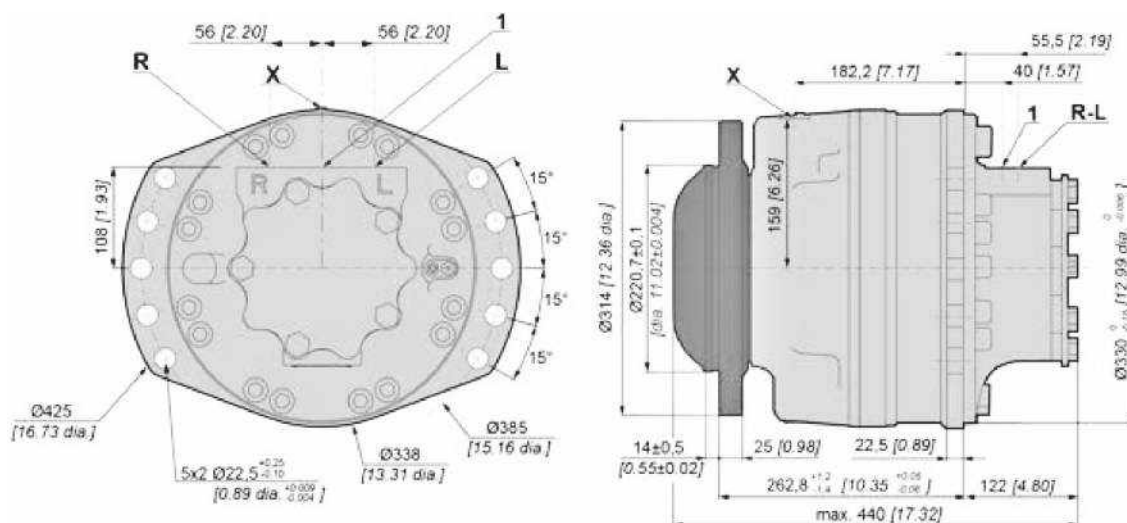
Also see 'Valving systems and hydrobases' section (thumbnail opposite).



Also see "Brake" section (thumbnail opposite).

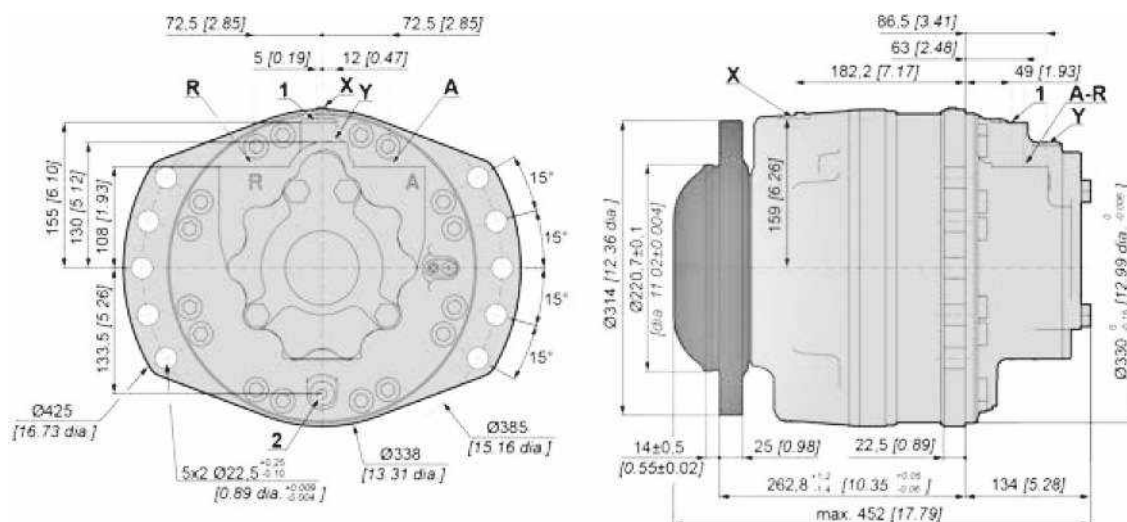
Wheel Motor

Dimensions for standard (R210) 1-displacement motor



 170 kg [375 lb]

Dimensions for standard (R210) 2-displacement motor



 180 kg [397 lb]



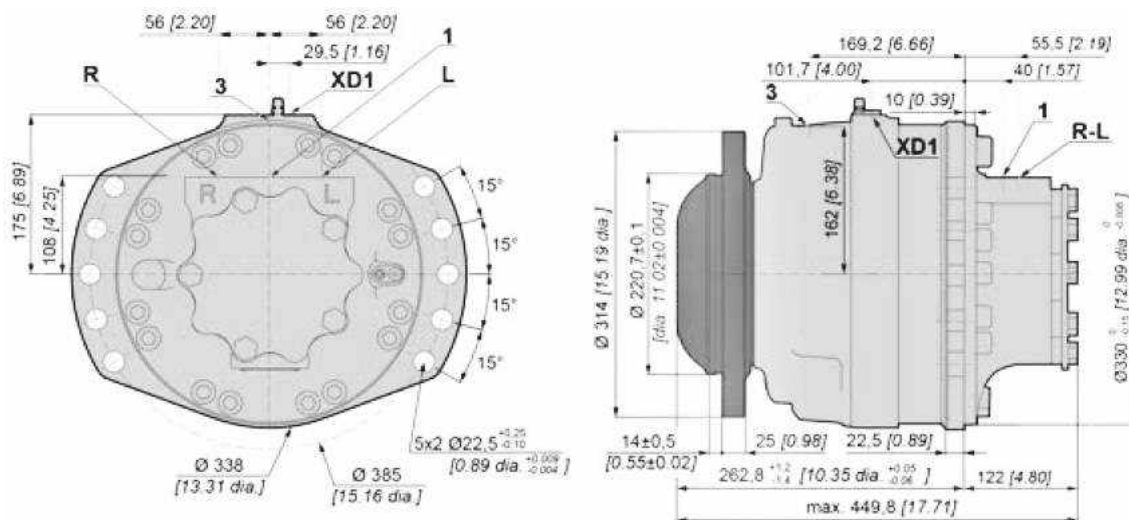
Also see 'Valving systems and hydrobases' section (thumbnail opposite).



Also see "Brake" section (thumbnail opposite).

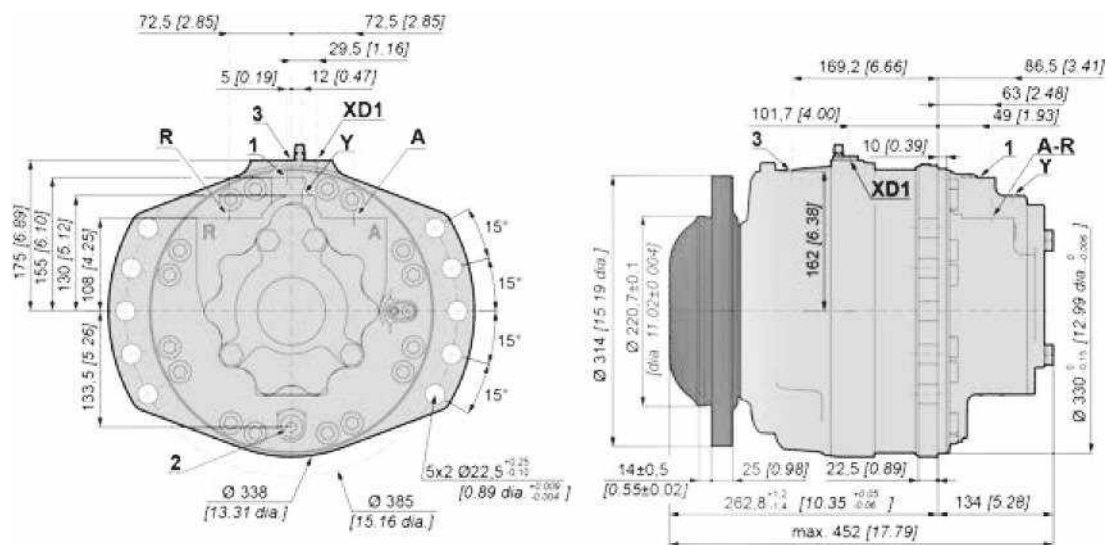
Wheel Motor

Dimensions for standard (U210) 1-displacement motor



170 kg [375 lb]

Dimensions for standard (U210) 2-displacement motor



180 kg [397 lb]



Also see 'Valving systems and hydrobases' section (thumbnail opposite).



Also see "Brake" section (thumbnail opposite).



Wheel Motor

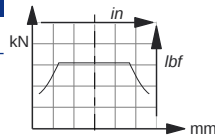
Load curves

Permissible radial loads

Test conditions :

Static : 0 tr/min [0 RPM] 0 bar [0 PSI]

Dynamic : 0 tr/min [0 RPM] , code 0 displacement, without axial load at max. torque



Service life of bearings

Test conditions :

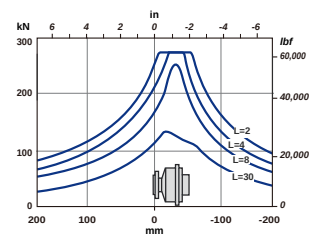
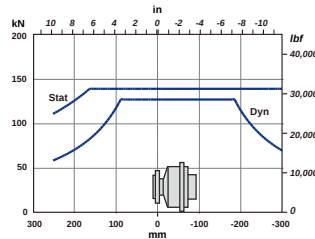
L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

M

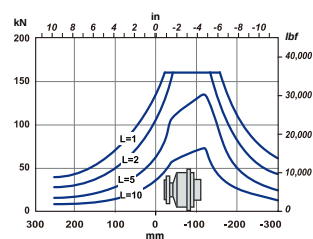
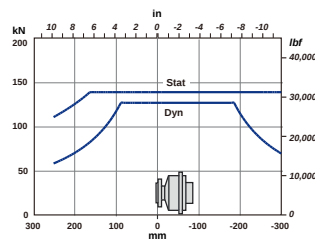
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P-MS18.MSE18 series

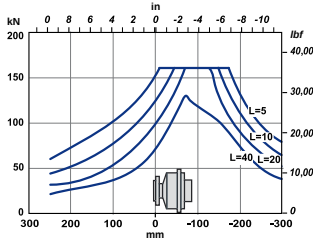
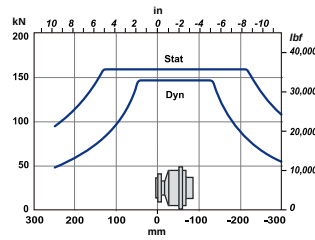
P			
1	2	3	4
1	1	1	0



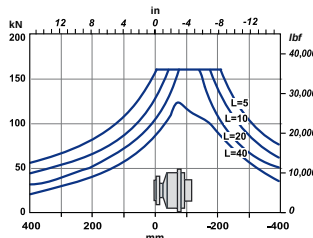
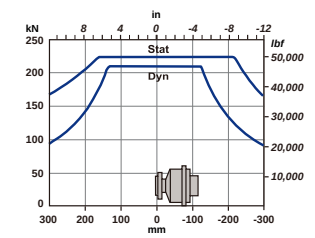
P			
1	2	3	4
1	2	1	0



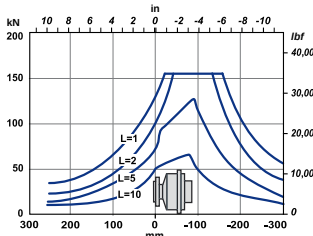
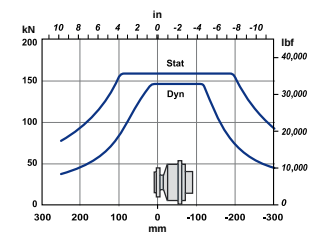
P			
1	2	3	4
1	3	1	0
1	6	1	0



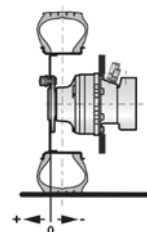
P			
1	2	3	4
1	5	1	0



P			
1	2	3	4
1	7	1	0



The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications. For an accurate calculation, consult YEOSHE.



Wheel Motor

M

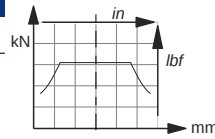
14

P-MS18.MSE18 series

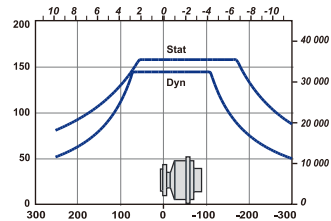
Load curves (continued)

Permissible radial loads

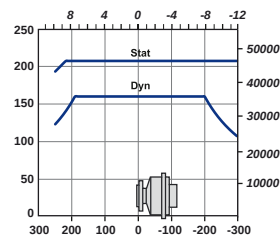
Test conditions :

Static : 0 tr/min [0 RPM] 0 bar [0 PSI]**Dynamic** : 0 tr/min [0 RPM] , code 0 displacement, without axial load at max. torque

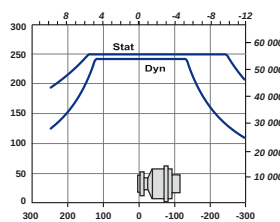
P			
1	2	3	4
1	9	1	0



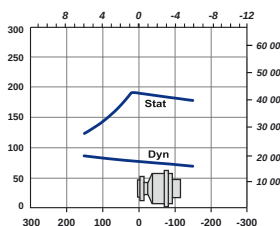
P			
1	2	3	4
E	T	3	0



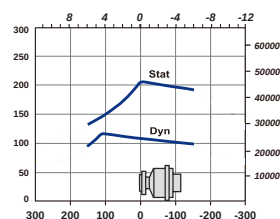
P			
1	2	3	4
F	T	3	0



P			
1	2	3	4
P	3	1	0

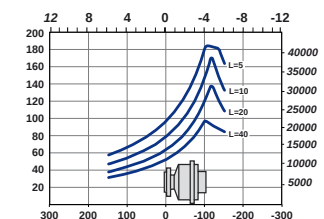
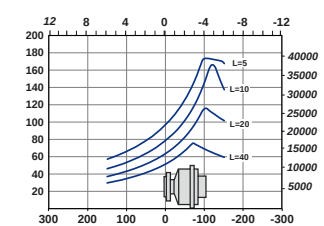
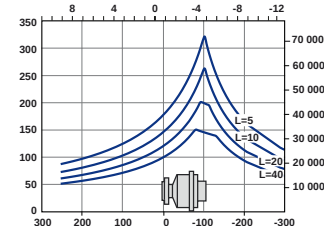
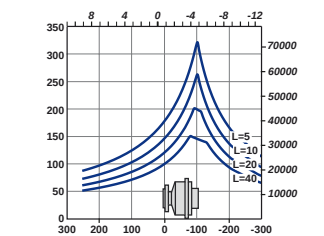
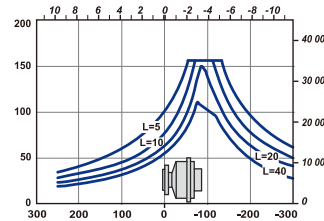


P			
1	2	3	4
Q	3	1	0

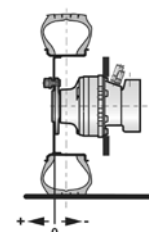


Service life of bearings

Test conditions :

L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications. For an accurate calculation, consult YEOSHE.

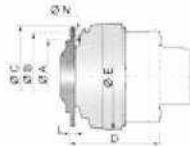
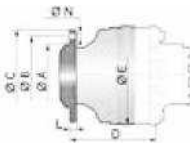
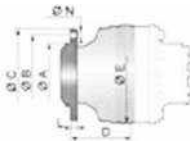
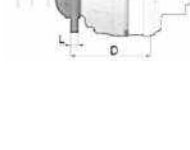
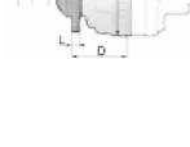




Wheel Motor

Support types (continued)

P-M S 1 8					C	D				F			P				S					
P-M S E 1 8					1	1	2	3		1	2	3	1	2	3	4	1	2	3	4	5	6

C	A mm [in]	B mm [in]	C mm [in]	D mm [in]	E mm [in]	N mm [in]	Wheel rim mountings	L mm [in]																	
<table><tr><td colspan="4">P</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>E</td><td>T</td><td>3</td><td>0</td></tr></table>	P				1	2	3	4	E	T	3	0	Ø 280.7 [11.05 dia.]	Ø 335 [13.19 dia.]	Ø 386 [15.20 dia.]	317 [12.48]	Ø 405 [15.94 dia.]	Ø 24 [0.94 dia.]	10 x M22x1.5	19 [0.75]					
P																									
1	2	3	4																						
E	T	3	0																						
<table><tr><td colspan="4">P</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>F</td><td>T</td><td>3</td><td>0</td></tr></table>	P				1	2	3	4	F	T	3	0	Ø 280.7 [11.05 dia.]	Ø 335 [13.19 dia.]	Ø 386 [15.20 dia.]	205 [8.07]	Ø 408 [16.06 dia.]	Ø 24 [0.94 dia.]	10 x M22x1.5	19 [0.75]					
P																									
1	2	3	4																						
F	T	3	0																						
<table><tr><td colspan="4">P</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>P</td><td>3</td><td>1</td><td>0</td></tr></table>	P				1	2	3	4	P	3	1	0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 313 [12.34 dia.]	288.2 [11.34]	Ø 338.5 [13.33 dia.]	Ø 22 [0.87 dia.]	8 x M20x1.5	23 [0.91]					
P																									
1	2	3	4																						
P	3	1	0																						
<table><tr><td colspan="4">P</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Q</td><td>3</td><td>1</td><td>0</td></tr></table>	P				1	2	3	4	Q	3	1	0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 313 [12.34 dia.]	205 [8.07]	Ø 338.5 [13.33 dia.]	Ø 22 [0.87 dia.]	8 x M20x1.5	23 [0.91]					
P																									
1	2	3	4																						
Q	3	1	0																						
<table><tr><td colspan="4">P</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>R</td><td>2</td><td>1</td><td>0</td></tr></table>	P				1	2	3	4	R	2	1	0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 314 [12.36 dia.]	262.8 [10.35]	Ø 339 [13.35 dia.]	Ø 22 [0.87 dia.]	8 x M20x1.5	25 [0.98]					
P																									
1	2	3	4																						
R	2	1	0																						
<table><tr><td colspan="4">P</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>U</td><td>2</td><td>1</td><td>0</td></tr><tr><td>W</td><td>2</td><td>1</td><td>0</td></tr></table>	P				1	2	3	4	U	2	1	0	W	2	1	0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 314 [12.36 dia.]	262.8 [10.35]	Ø 338 [13.31 dia.]	Ø 22 [0.87 dia.]	8 x M20x1.5	25 [0.98]	
P																									
1	2	3	4																						
U	2	1	0																						
W	2	1	0																						
<table><tr><td colspan="4">P</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>S</td><td>2</td><td>1</td><td>0</td></tr></table>	P				1	2	3	4	S	2	1	0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 314 [12.36 dia.]	177.6 [6.99]	Ø 338 [13.31 dia.]	Ø 22 [0.87 dia.]	8 x M20x1.5	25 [0.98]					
P																									
1	2	3	4																						
S	2	1	0																						
<table><tr><td colspan="4">P</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>V</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Y</td><td>2</td><td>1</td><td>0</td></tr></table>	P				1	2	3	4	V	2	1	0	Y	2	1	0	Ø 220.7 [8.69 dia.]	Ø 275 [10.83 dia.]	Ø 314 [12.36 dia.]	177.6 [6.99]	Ø 338 [13.31 dia.]	Ø 22 [0.87 dia.]	8 x M20x1.5	25 [0.98]	
P																									
1	2	3	4																						
V	2	1	0																						
Y	2	1	0																						



Also see “Brake” section (thumbnail opposite).

Wheel Motor

M

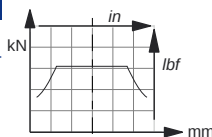
16

P-MS18.MSE18 series

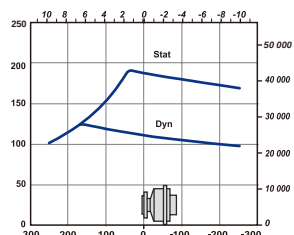
Load curves (continued)

Permissible radial loads

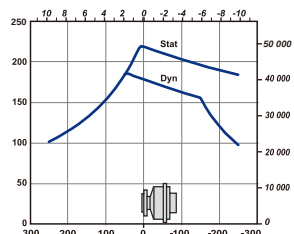
Test conditions :

Static : 0 tr/min [0 RPM] 0 bar [0 PSI]**Dynamic** : 0 tr/min [0 RPM] , code 0 displacement, without axial load at max. torque

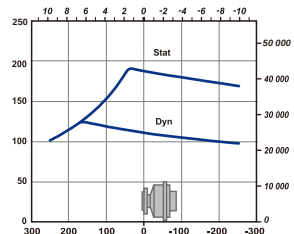
P			
1	2	3	4
R	2	1	0



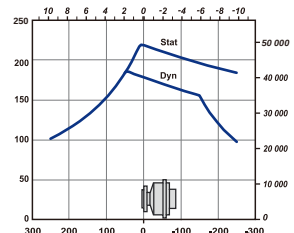
P			
1	2	3	4
S	2	1	0



P			
1	2	3	4
U	2	1	0
W	2	1	0

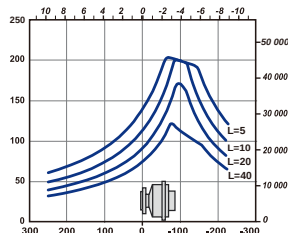
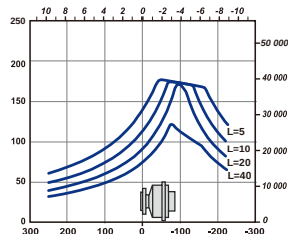
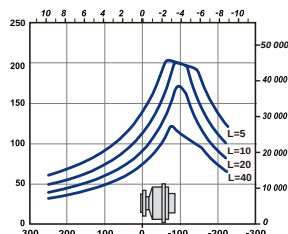
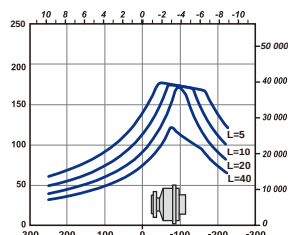


P			
1	2	3	4
V	2	1	0
Y	2	1	0

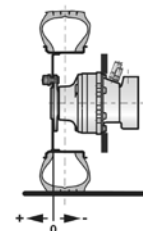


Service life of bearings

Test conditions :

L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

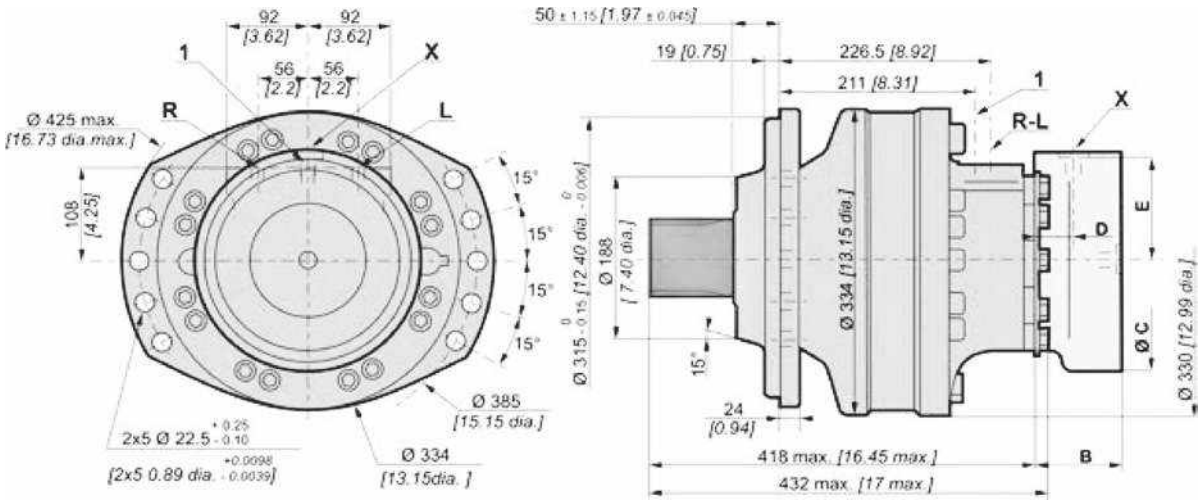
The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications. For an accurate calculation, consult YEOSHE.



Shaft Motor

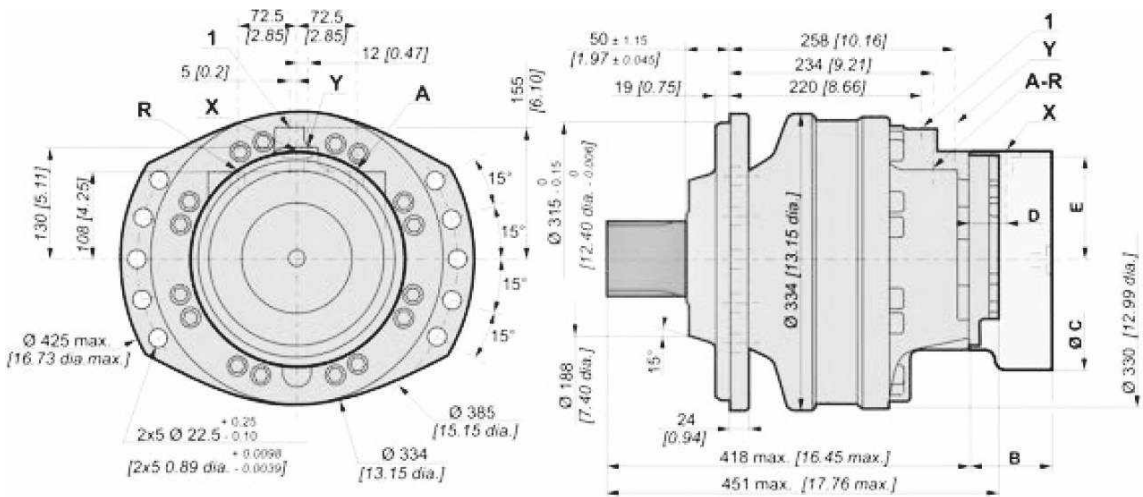


Dimensions for standard (2A50) 1-displacement motor

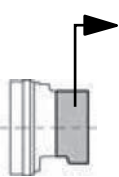


	112 kg [246 lb]	142 kg [312 lb]
	3.00 L [180 cu.in]	2.50 L [150 cu.in]

Dimensions for standard (2A50) 2-displacement motor



	112 kg [246 lb]	152 kg [334 lb]
	3.00 L [180 cu.in]	2.50 L [150 cu.in]



C	T 2 0
B	115 [4.53]
C	Ø282 [11.10]
D	45 [1.77]
E	128.5 [5.06]

Also see 'Valving systems and hydrobases' section (thumbnail opposite).

Also see "Brake" section. (thumbnail opposite).

Shaft Motor

M

18

P-MS18.MSE18 series

Support types

P-M		S	1	8	C	D				F			P				S					
1	2	3	4		1	1	2	3		1	2	3	1	2	3	4	1	2	3	4	5	6
P-M	S	E	1	8																		

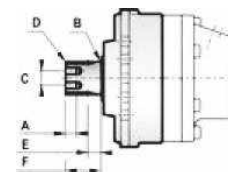
C

NF E22-141 splines

P																							
1	2	3	4																				
2	A	1	0		Nominal Ø	90 [3.54]	23 [0.91]	R 3 [R 0.12]	35 [1.38]	2 x M14	23 [0.91]	90 [3.54]											
					Module	2.5																	
					Z	34																	

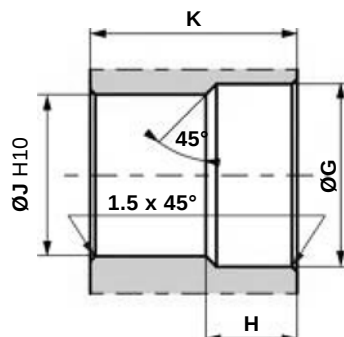
DIN 5480 splines

P																							
1	2	3	4																				
2	A	5	0		Nominal Ø	90 [3.54]	23 [0.91]	R 3 [R 0.12]	35 [1.38]	2 x M14	23 [0.91]	90 [3.54]											
					Module	3																	
					Z	28																	



Also see 'Valving systems and hydrobases' section (thumbnail opposite).

Splined coupling



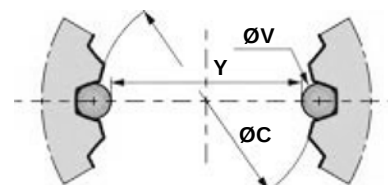
Standard NF E22-141

Pressure angle 20°.
Centering on flanks.
Slide fit (7H quality).

Standard DIN 5480

Pressure angle 30°.
Centering on flanks.
Slide fit (7H quality).

N : Nominal Ø.
Mo : Module.
Z : Number of teeth.



C		Ø G	H	Ø J	K	N	Mo	Z	Offset	Ø C (H10)	Ø V	Y	Tolerance µm [µin]
P		91 [3.58]	28 [1.10]	85 [3.35]	89 [3.50]	90 [3.54]	2.5	34	2 [0.08]	85 [3.35]	5 [0.20]	80.169 [3.16]	+ 104 / 0 [+4.094 / 0]
1 2 3 4													
2	A	1	0										
P		91.5 [3.60]	25 [0.98]	84 [3.31]	89 [3.50]	90 [3.54]	3	28	1.35 [0.0531]	84 [3.31]	5.25 [0.21]	79.110 [3.11]	+ 68 / 0 [+2.677 / 0]
1 2 3 4													
2	A	5	0										

General tolerances : ± 0.25 [±0.0098].

Material: Ex: 42CrMo4.

Hardening treatment to obtain R = 800 to 900 N/mm² [R = 116 030 to 130 533 PSI].

Shaft Motor

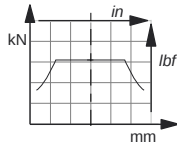


Load curves

Permissible radial loads

Max. permissible loads :
0 tr/min [0 RPM] ; 0 bar [0 PSI]

Continuous permissible loads:
> 0 tr/min [> 0 RPM] ; 275 bar [3 988 PSI].

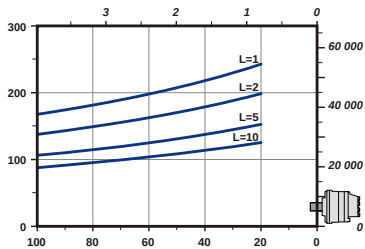
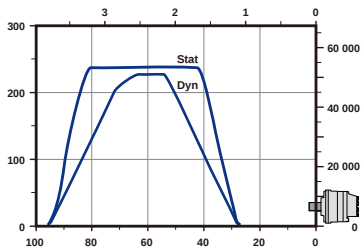


Service life of bearings

Test conditions :

L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

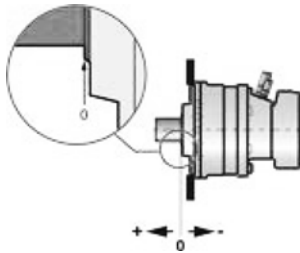
P			
1	2	3	4
2	A	1	0
2	A	5	0



The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications. For an accurate calculation, consult YEOSHE.

C

P			
1	2	3	4
2	A	1	0
2	A	5	0



Valving Systems and Hydrobases

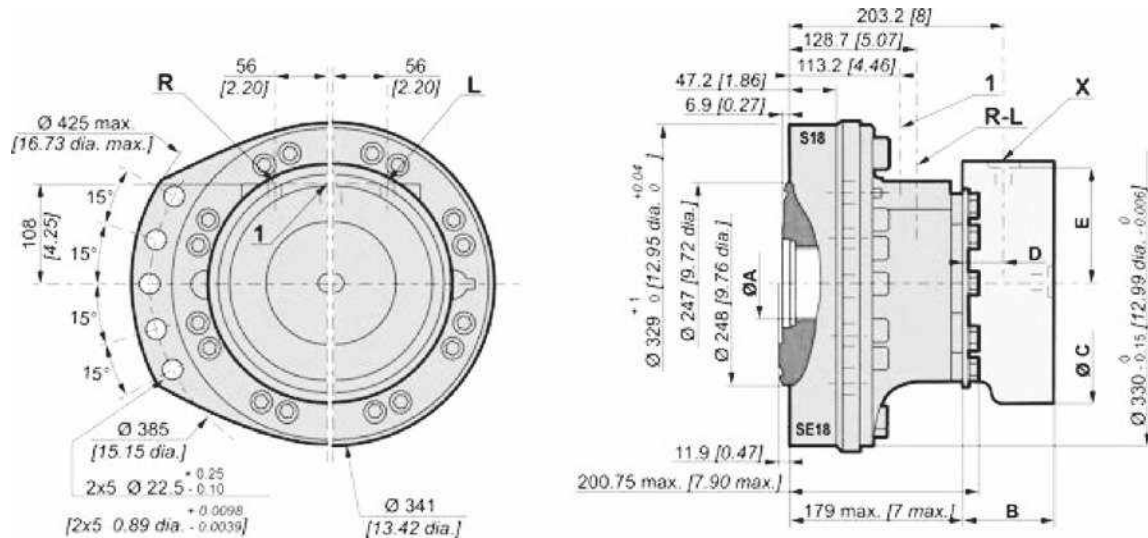
M

20

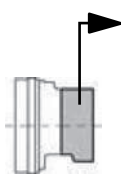
P-MS18.MSE18 series

P-M				C	D			F			P				S					
1	S	1	8	1	1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
P-M	S	E	1	8																

Dimensions for 1-displacement valving



D			D		
1	2	3	1	2	3
1	2		1	1	



C	T 2 0
B	115 [4.53]
C	Ø282 [11.10]
D	45 [1.77]
E	128.5 [5.06]

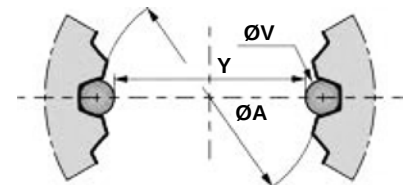
	68 kg [150 lb]	93 kg [205 lb]
	1.25 L [75 cu.in]	1.00 L [60 cu.in]

i Also see "Brake" section (thumbnail opposite).

Cylinder block splines

(as per standard NF E22-141)

ØA	Module	Z	Dimension on 2 pins	
			Y	ØV
90 [3.543]	2.5	34	65.169 [3.156]	5 [0.197]



You are advised to have the installation validated by YEOSHE application engineer before using the hydraulic unit in an application.

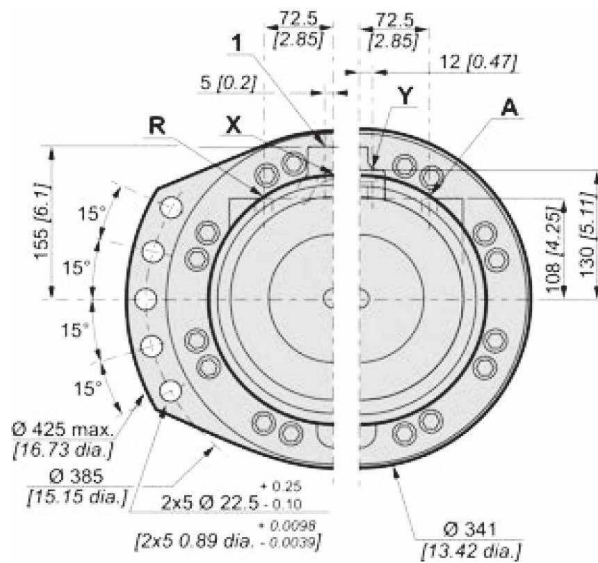


We must provide you with a detailed plan of the interface for any hydraulic unit use, consult YEOSHE.

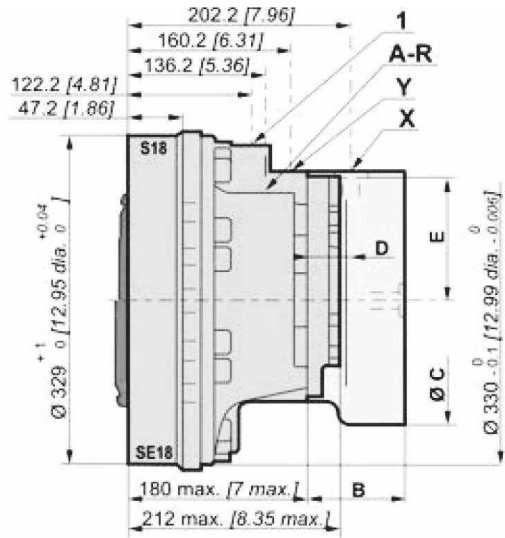


Valving Systems and Hydrobases

Dimensions for 2-displacement valving

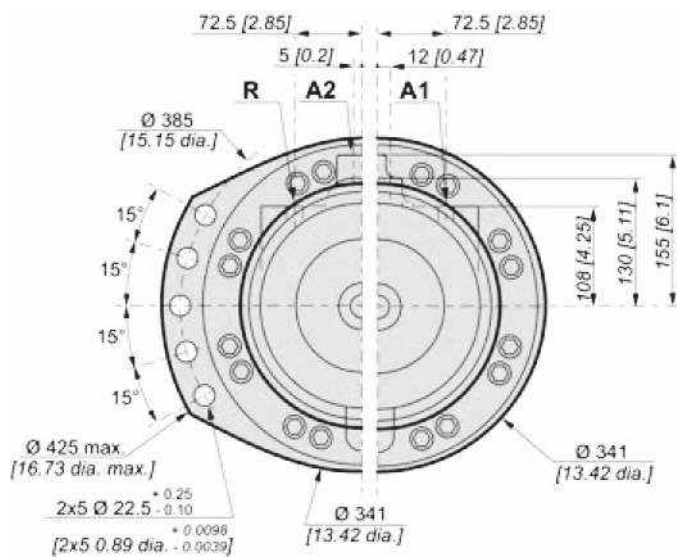


D			D		
1	2	3	1	2	3
2			1		

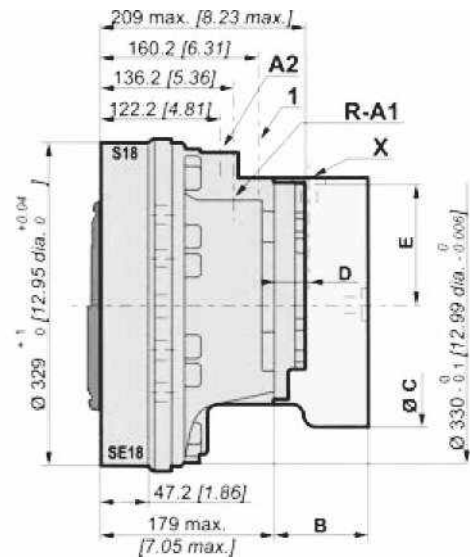


	78 kg [172 lb]	99 kg [218 lb]
	1.25 L [75 cu.in]	1.00 L [60 cu.in]

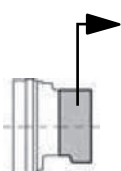
Dimensions for Twin-Lock valving



D			D		
1	2	3	1	2	3
2	E		2	D	



	78 kg [172 lb]	99 kg [218 lb]
	1.25 L [75 cu.in]	1.00 L [60 cu.in]



C	T 2 0
B	115 [4.53]
C	Ø282 [11.10]
D	45 [1.77]
E	128.5 [5.06]

Also see "Brake" section (thumbnail opposite).

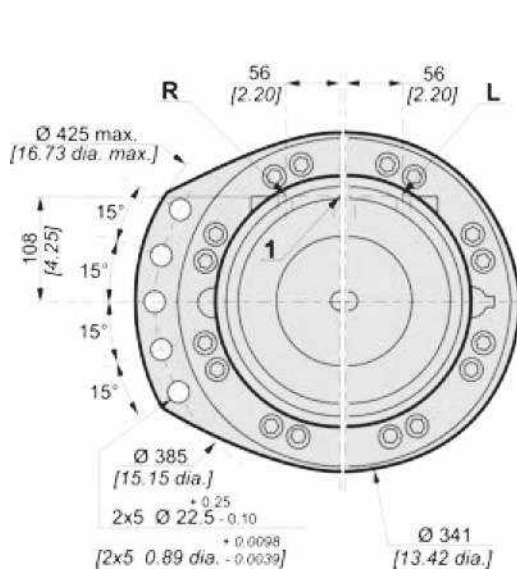
Valving Systems and Hydrobases

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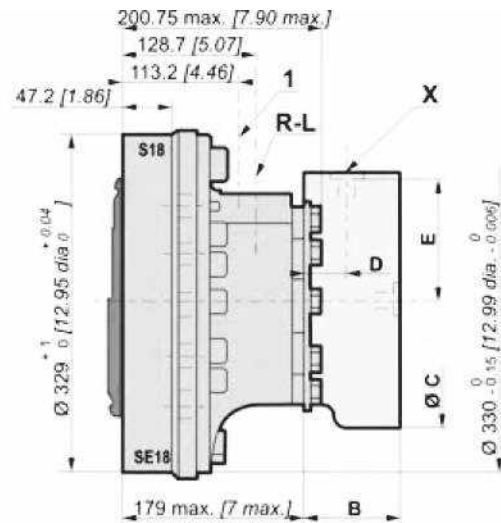
P-MS18.MSE18 series

Dimensions for 1-displacement valving with built-in exchange

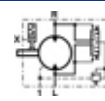
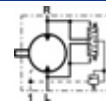


D	1	2	3
1	5		

D	1	2	3
1	4		

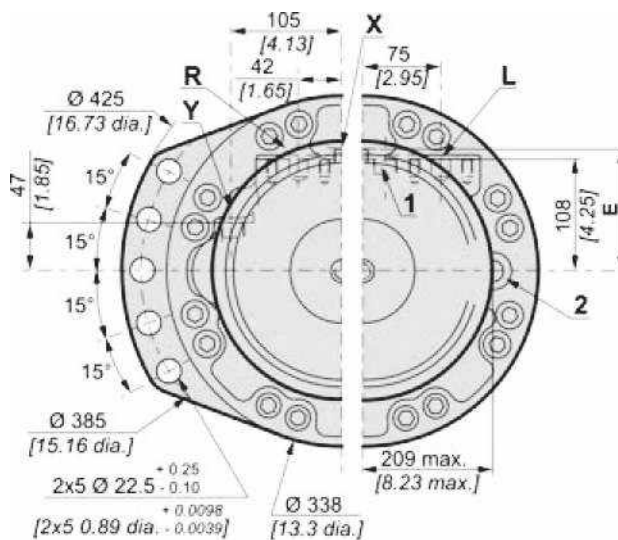


68 kg [150 lb]	93 kg [205 lb]
1.25 L [75 cu.in]	1.00 L [60 cu.in]



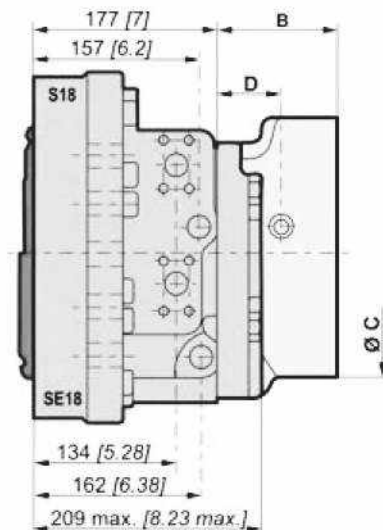
Dimensions for 2-displacement symmetrical valving

For a small displacement, there is no preferred orientation for this motor.

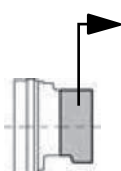
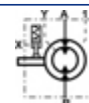
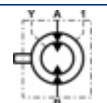


D	1	2	3
2			

D	1	2	3
1			



78 kg [172 lb]	99 kg [218 lb]
1.25 L [75 cu.in]	1.00 L [60 cu.in]



C	T 2 0
B	115 [4.53]
C	Ø282 [11.10]
D	45 [1.77]
E	128.5 [5.06]

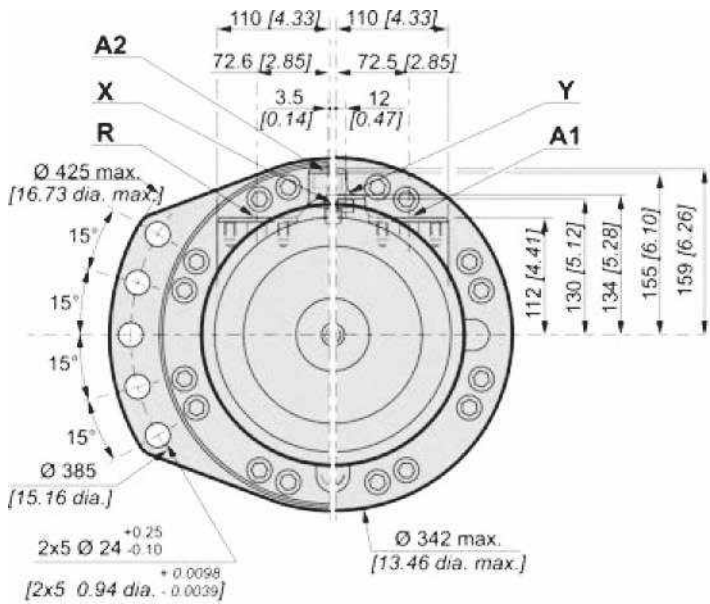


Also see "Brake" section (thumbnail opposite).

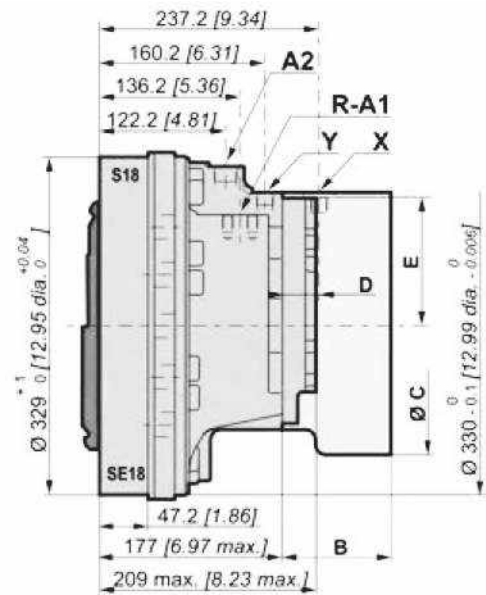


Valving Systems and Hydrobases

Dimensions for Twin-Lock / 2-displacement valving

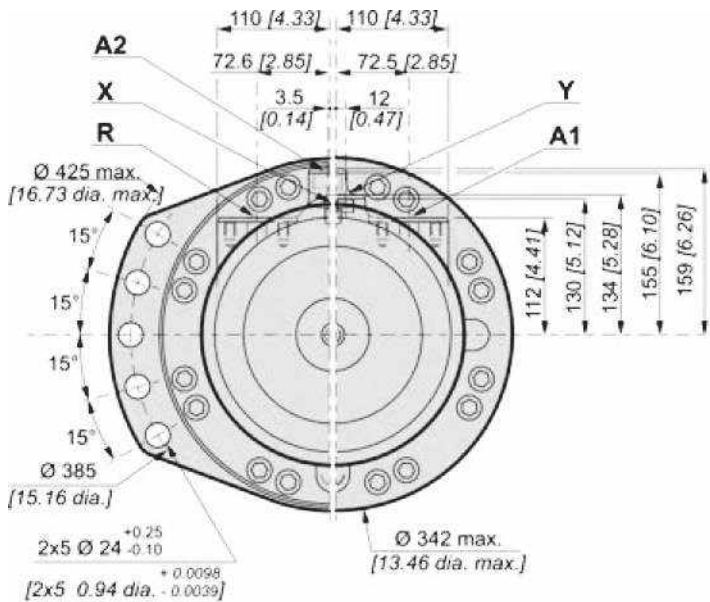


D			D		
1	2	3	1	2	3
2	V		2	K	

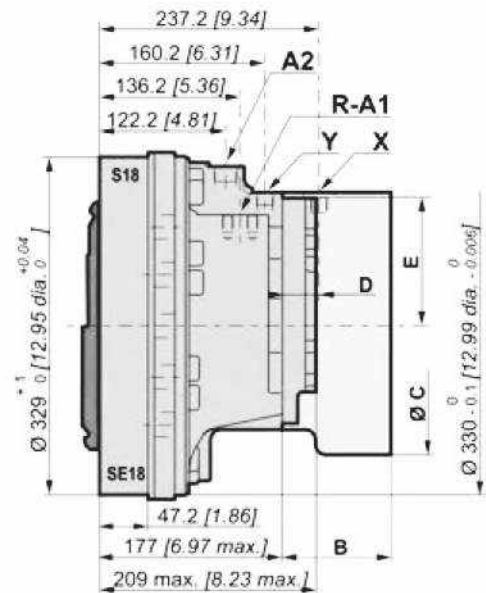


78 kg [172 lb]	99 kg [218 lb]
1.25 L [75 cu.in]	1.00 L [60 cu.in]

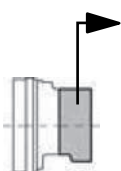
Dimensions for 2-displacement / Twin-lock valving



D			D		
1	2	3	1	2	3
2	Q		2	P	



78 kg [172 lb]	99 kg [218 lb]
1.25 L [75 cu.in]	1.00 L [60 cu.in]



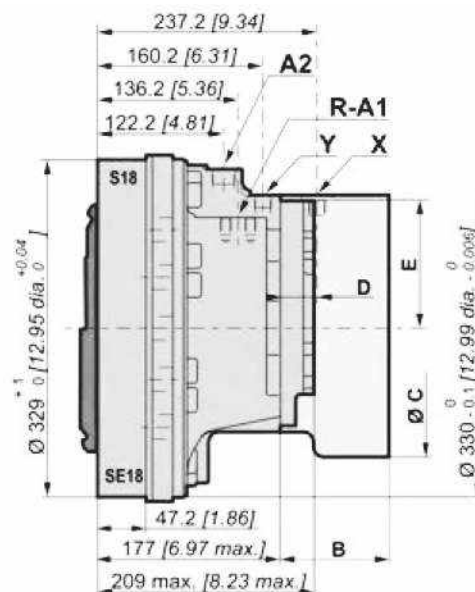
C	T 2 0
B	115 [4.53]
C	Ø282 [11.10]
D	45 [1.77]
E	128.5 [5.06]

Also see "Brake" section (thumbnail opposite).

M

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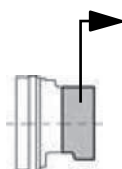
P-MS18.MSE18 series



D		
1	2	3
	M	

D		
1	2	3
	L	

 78 kg [172 lb]	99 kg [218 lb]
 1.25 L [75 cu.in.]	1.00 L [60 cu.in.]
	



C	T 2 0
B	115 [4.53]
C	Ø282 [11.10]
D	45 [1.77]
E	128.5 [5.06]

 Also see “Brake” section (thumbnail opposite).



We can obtain a more important flow and speed with this valving system. For an accurate calculation, consult YEOSHE.

Valving Systems and Hydrobases

M

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P-MS18.MSE18 series

Exchange

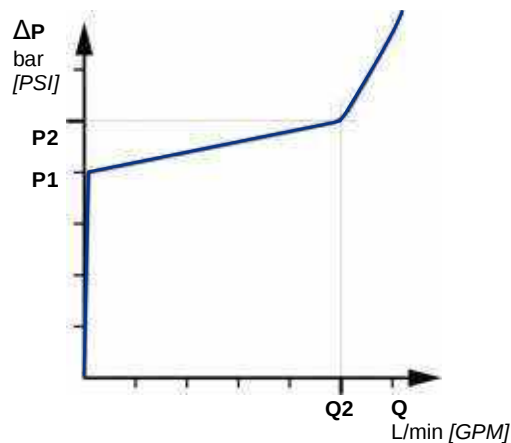
When a coding request is made, you must specify information on the threshold of the selector and the valve.

Selector spool

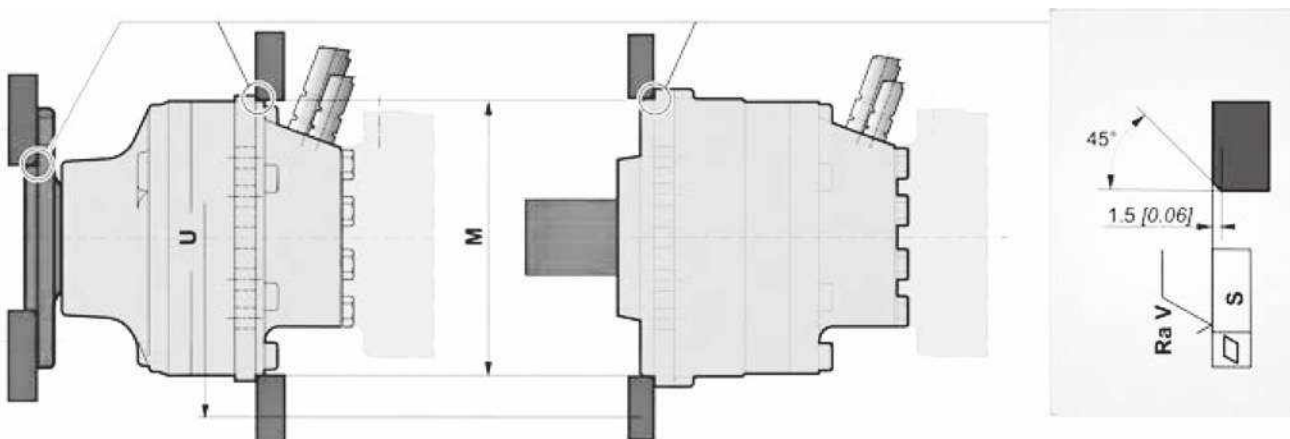
Selector threshold bar [PSI]	Opening pressure of selector bar [PSI]
8 [116]	9.9 ±1.2 [144 ±17]

Fitted valve

P1 bar [PSI]	Q2 L/min [GPM]	P2 bar [PSI]
13.5 [195]	14 [3.7]	16 [232]
18 [261]	15 [3.9]	21 [305]
22 [319]	16 [4.2]	25 [363]



Chassis mountings



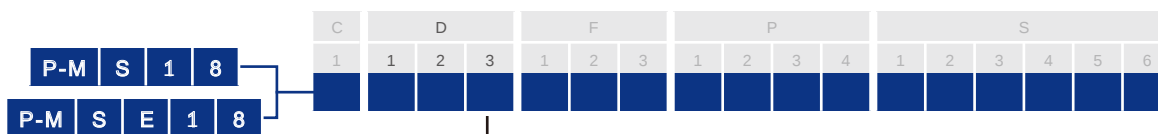
Take care over the immediate environment of the connections.

		Ø M (1)	Ø U	S	Ra V		Class		
MS35	Wheel motor	300 [12.99]	385 [15.16]	0.2 [0.008]	12.5µm [0.49µin]	2 x 5 M20 x 2.5	10.9		
	Shaft motor	315 [12.40]	385 [15.16]						
	Wheel motor FT30	380 [14.96]	440 [17.32]			4 x 3 M20 x 2.5			
MS18 / MSE18	Wheel motor FT30	380 [14.96]	440 [17.32]						2 x 5 M20 x 2.5
	Wheel motor	300 [12.99]	385 [15.16]						2 x 8 M20 x 2.5
	Shaft motor	380 [14.96]	440 [17.32]					2 x 8 M20 x 2.5	
	Short wheel motor (1) +0.3 [+0.012] +0.2 [+0.008]							2 x 8 M20 x 2.5	



Valving Systems and Hydrobases

Hydraulic connections



P27 Parking brake

C27 Combined brake

		Old standards	Standards	Power supply		Case drain	2 nd displacement control	Control of parking brake	Control of parking brake	Control of service brake	Flushing
S18				R - L		1 ∕ 2		X	X	XD	3
1 displacement	A	SAE J514	ISO 11 926-1	1" 1/16-12 UNF		7/8"-14 UNF		9/16"-18 UNF	9/18"-18 UNF	9/16"-18 UNF	3/4"-16 UNF
	1	ISO 6162 DIN 3852	ISO 6162 ISO 9974-1	DN19 PN400		M22 x 1.5		M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
	2	ISO 6162 BSPP	ISO 6162 ISO 1179-1	DN19 PN400		Ø21 [1/2" dia.]		BSP 3/8	M16 x 1.5	M14 x 1.5	M14 x 1.5
	4	NF E48 050	ISO 9974-1	M27 x 2		M22 x 1.5		M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
	7	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1	DN19 PN400		7/8"-14 UNF		9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	3/4"-16 UNF
2 Displacement				R - A		1 ∕ 2	Y	X	X	XD	3
	A	SAE J514	ISO 11 926-1	1"1/16-12 UNF		7/8"-14 UNF	3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	3/4"-16 UNF
	1	ISO 6162 DIN 3852	ISO 6162 ISO 9974-1	DN19 PN400		M22 x 1.5	M16 x 1.5	M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
	1 ⁺	ISO 6162 DIN 3852	ISO 6162 ISO 9974-1	DN19 PN400		M22 x 1.5	M22 x 1.5	M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
	4	NF E48 050	ISO 9974-1	M27 x 2		M22 x 1.5	M16 x 1.5	M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
	4 ⁺	NF E48 050	ISO 9974-1	M27 x 2		M22 x 1.5	M22 x 1.5	M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
	7	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1	DN19 PN400		7/8"-14 UNF	3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	3/4"-16 UNF
7 ⁺	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1	DN19 PN400		7/8"-14 UNF	7/8"-14 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	3/4"-16 UNF	
Twin-Lock				R - A1	A2	1 ∕ 2	Y	X	X	XD	3
	A	SAE J514	ISO 11 926-1	1"1/16-12 UNF	1"1/16-12 UNF	3/4"-16 UNF 7/8"-14 UNF	9/16"-18 UNF 3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF
	1	ISO 6162 DIN 3852	ISO 6162 ISO 9 974-1	DN19 PN400	M27 x 2	M22 x 1.5	M16 x 1.5	M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
	7	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1	DN19 PN400	1"1/16-12 UNF	3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	3/4"-16 UNF
S35			R - L		1 ∕ 2		X	X	XD	3	
1C	9	ISO 6162 DIN 3852	ISO 6162 ISO 9 974-1	DN32 PN400		M22 x 1.5		M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
2C				R - A		1 ∕ 2	Y	X	X	XD	3
	1	ISO 6162 DIN 3852	ISO 6162 ISO 9 974-1	DN25 PN400		M22 x 1.5	M18 x 1.5	M16 x 1.5	M20 x 1.5	M14 x 1.5	M22 x 1.5
	7	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1	DN25 PN400		1"1/16-12 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF	3/4"-16 UNF
			ISO 9 974-1								
Max. pressures			P-MS bar P-MSE [PSI]	450 [6,527] 400 [5,802]	450 [6,527] 400 [5,802]	1 [15]	30 [435]	30 [435]	130 [1,885]	70 [1,015]	30 [435]

⬆ : Only symmetrical valving



To find the connections' tightening torques, see the brochure "Installation guide" N° B61352L.



You are strongly advised to use the fluids specified in brochure "Installation guide" N°B61352L.

Valving Systems and Hydrobases

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P-MS18.MSE18 series

					C	D			F			P				S					
P-M		S	1	8	1	1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
P-M		S	E	1	8																
P20 brake S20 Service brake																					
					Old standards	Standards	Power supply		Case drain	2 nd displacement control	Control of parking brake	Control of parking brake	Flushing								
S18							R - L		1、2		X	XD1-XD2	3								
1 displacement	A	SAE J514	ISO 11 926-1		1" 1/16-12 UNF			7/8"-14 UNF			3/4"-16 UNF	9/18"-18 UNF	7/8"-14 UNF								
	1	ISO 6162 DIN 3852	ISO 6162 ISO 9974-1		DN19 PN400			M22 x 1.5			M16 x 1.5	M14 x 1.5	M22 x 1.5								
	2	ISO 6162 BSPP	ISO 6162 ISO 1179-1		DN19 PN400			Ø21 [1/2" dia.]			BSP 3/8	BSP 1/4	BSP 1/2								
	4	NF E48 050	ISO 9974-1		M27 x 2			M22 x 1.5			M16 x 1.5	M14 x 1.5	M22 x 1.5								
	7	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1		DN19 PN400			7/8"-14 UNF			3/4"-16 UNF	9/16"-18 UNF	7/8"-14 UNF								
2 Displacement					R - A			1、2	Y	X	XD1-XD2	3									
	A	SAE J514	ISO 11 926-1		1"1/16-12 UNF			7/8"-14 UNF	3/4"-16 UNF	3/4"-16 UNF	9/16"-18 UNF	7/8"-14 UNF									
	1	ISO 6162 DIN 3852	ISO 6162 ISO 9974-1		DN19 PN400			M22 x 1.5	M16 x 1.5	M16 x 1.5	M14 x 1.5	M22 x 1.5									
	1+	ISO 6162 DIN 3852	ISO 6162 ISO 9974-1		DN19 PN400			M22 x 1.5	M22 x 1.5	M16 x 1.5	M14 x 1.5	M22 x 1.5									
	4	NF E48 050	ISO 9974-1		M27 x 2			M22 x 1.5	M16 x 1.5	M16 x 1.5	M14 x 1.5	M22 x 1.5									
	4+	NF E48 050	ISO 9974-1		M27 x 2			M22 x 1.5	M22 x 1.5	M16 x 1.5	M14 x 1.5	M22 x 1.5									
	7	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1		DN19 PN400			7/8"-14 UNF	3/4"-16 UNF	3/4"-16 UNF	9/16"-18 UNF	7/8"-14 UNF									
7+	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1		DN19 PN400			7/8"-14 UNF	7/8"-14 UNF	3/4"-16 UNF	9/16"-18 UNF	7/8"-14 UNF										
Twin-Lock					R - A1	A2		1、2	Y	X	XD1-XD2	3									
	A	SAE J514	ISO 11 926-1		1"1/16-12 UNF	1"1/16-12 UNF	3/4"-16 UNF 7/8"-14 UNF	9/16"-18 UNF 3/4"-16 UNF	3/4"-16 UNF	9/16"-18 UNF	7/8"-14 UNF										
	1	ISO 6162 DIN 3852	ISO 6162 ISO 9 974-1		DN19 PN400	M27 x 2	M22 x 1.5	M16 x 1.5	M16 x 1.5	M14 x 1.5	M22 x 1.5										
	7	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1		DN19 PN400	1"1/16-12 UNF	3/4"-16 UNF	9/16"-18 UNF	3/4"-16 UNF	9/16"-18 UNF	7/8"-14 UNF										
S35							R - L		1、2		X	XD1-XD2	3								
1C	9	ISO 6162 DIN 3852	ISO 6162 ISO 9 974-1		DN32 PN400			M22 x 1.5			M16 x 1.5	M14 x 1.5	M22 x 1.5								
2C					R - A			1、2	Y	X	XD1-XD2	3									
	1	ISO 6162 DIN 3852	ISO 6162 ISO 9 974-1		DN25 PN400			M22 x 1.5	M18 x 1.5	M16 x 1.5	M14 x 1.5	M22 x 1.5									
	7	ISO 6162 SAE J514	ISO 6162 ISO 11 926-1		DN25 PN400			1"1/16-12 UNF	9/16"-18 UNF	3/4"-16 UNF	9/16"-18 UNF	7/8"-14 UNF									
					ISO 9 974-1																
Max. pressures		P-MS bar [PSI] P-MSE	450 [6,527] 400 [5,802]	450 [6,527] 400 [5,802]	1 [15]	30 [435]	130 [1,885]	70 [1,015]	1 [14.5]												



Valving Systems and Hydrobases

Efficiency

M

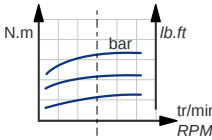
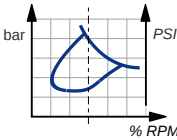
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P-MS18.MSE18 series

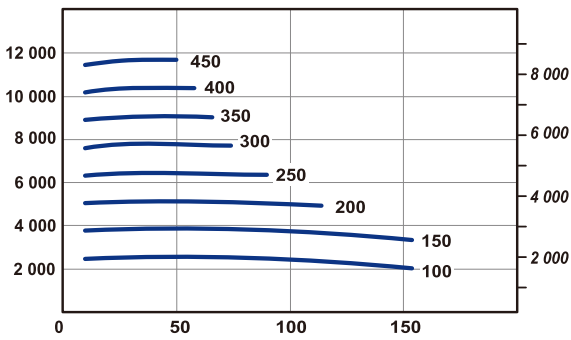
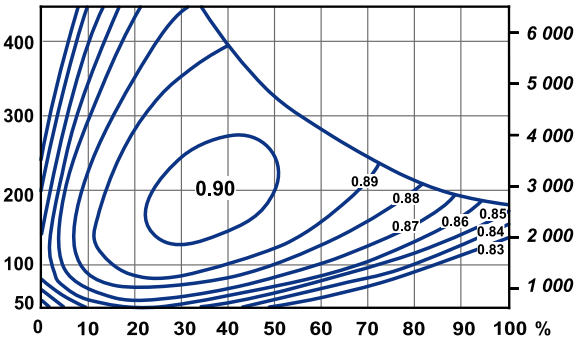
Overall efficiency

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F].

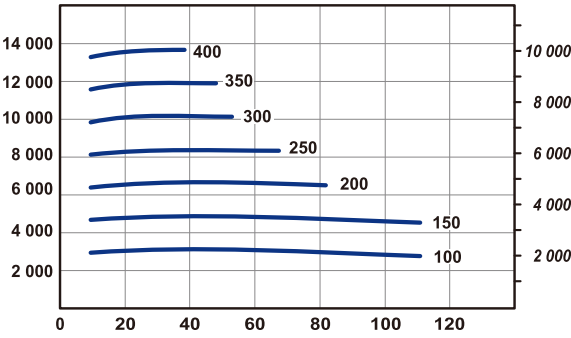
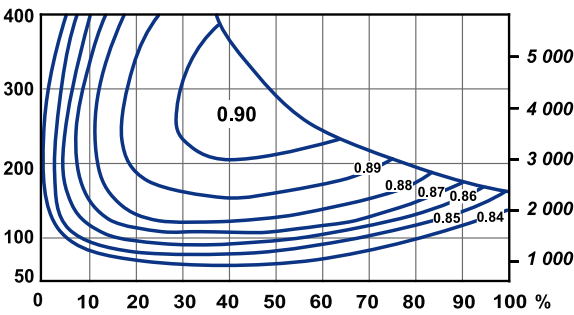
Actual output torque



P-MS18



P-MSE18



For a precise calculation, consult YEOSHE.

Brakes

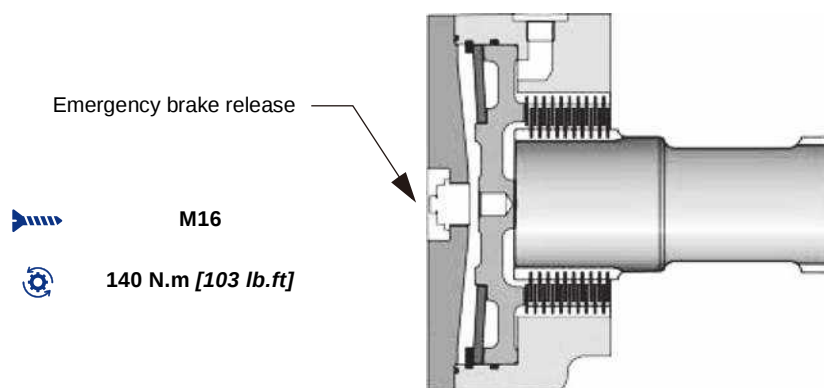
M

30

P-MS18.MSE18 series

T20 Rear parking brake

					C				D				F			P				S					
P-M	S	1	8		1				1	2	3		1	2	3	1	2	3	4	1	2	3	4	5	6
P-M	S	E	1	8									T	2	0										



Brake principle

This is a multidisc brake which is activated by a lack of pressure. The spring exerts a force on the piston, which presses on the fixed and mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

C		T 2 0	
Parking brake torque at 0 bars on housing (new brake)		19,000 Nm [14,010 lb.ft]	
Min. dynamic brake torque in case of emergency brake with new brake		12,350 Nm [9,110 lb.ft]	
Residual parking braking at 0 bars on housing *		15,200 Nm [11,210 lb.ft]	
Min. brake release pressure		14 bar [203 PSI]	
Max. brake release pressure		30 bar [435 PSI]	
Oil capacity		180 cm ³ [11.0 cu.in]	
Volume for brake release		70 cm ³ [4.3 cu.in]	
Max. energy dissipation		193 033 J	

* After emergency brake has been used



Do not run-in the multidisc brakes.



A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake). For all vehicles capable of speeds over 25 km/h, please contact YEOSHE.



The use of certain oils may not offer the characteristics stated above. Consult YEOSHE.

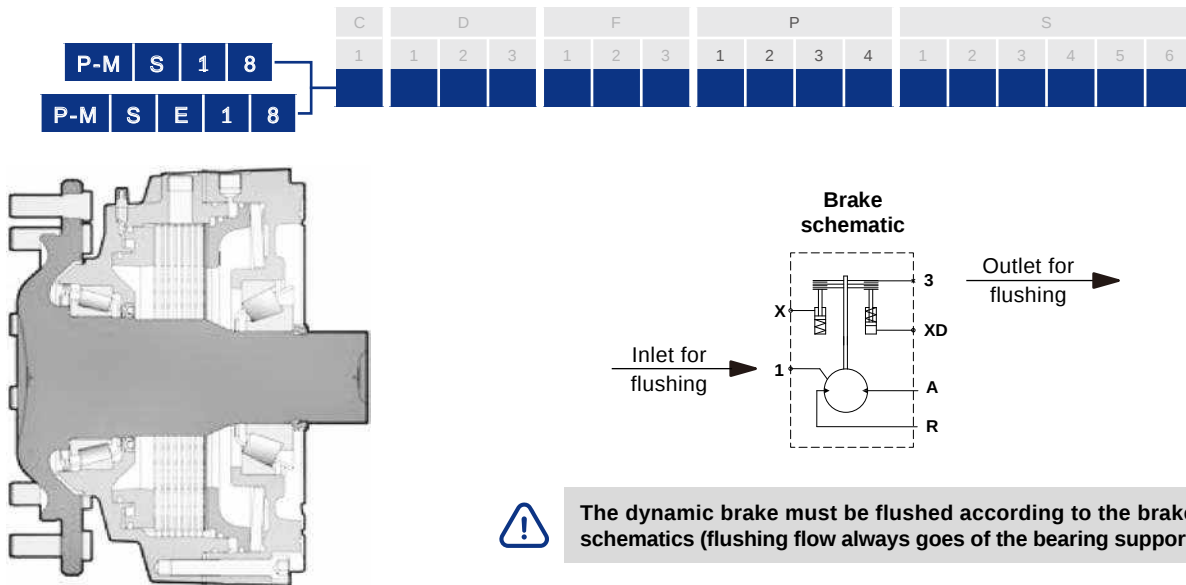
Brakes

C27 Combined brake

M

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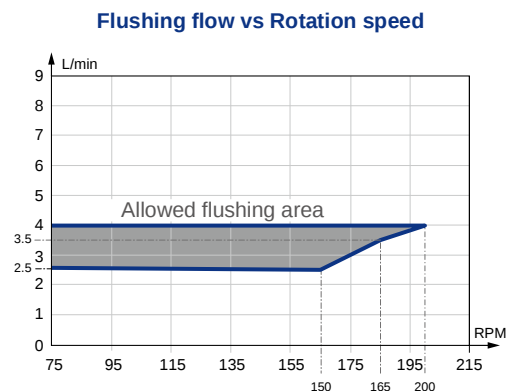
P-MS18.MSE18 series



Brake principle

This is a multidisc brake which is activated by a braking pressure (dynamic braking). The braking command creates a pressure on the dynamic braking piston, which damps the fixed and free discs, preventing the shaft from turning. Braking torque increases linearly as a function of the piloting pressure.

C	E T 3 0
	F T 3 0
General information	
Max. rotation speed	200 rpm
Max. energy dissipation for 1 braking (maintenance needed)	1000 kJ
Dynamic brake information	
Permissible torque during dynamic braking	32 000 Nm [23 600 lb.ft]
Pressure to obtain max. permissible braking	70 bar [1,015 PSI]
Piston chamber piloting volume, worn brake	74 cm ³ [4.5 cu.in]
Service brake max. allowed energy	500 kJ
Parking brake information	
Min. parking brake torque	18,000 Nm [13,280 lb.ft]
Min. dynamic brake torque in case of emergency brake with new brake	24,000 Nm [17,700 lb.ft]
Min. dynamic brake torque in case of emergency brake with worn brake	13,000 Nm [9,590 lb.ft]
Release brake pressure (min. / max.)	100 [1,450] / 135 [1,958]
Piston chamber piloting volume (worn brake)	48 cm ³ [2.9 cu.in]
Number of parking brake applications	1,000,000



Brake release pressure vented.



The use of certain oils may not offer the characteristics stated above. Consult YEOSHE application engineer.



When using the Boosted brake option, the C27 bearing support might not be able to withstand the combination of maximum hydrostatic torque and maximum service brake torque. Please contact YEOSHE application engineer for a detailed calculation.

Brakes

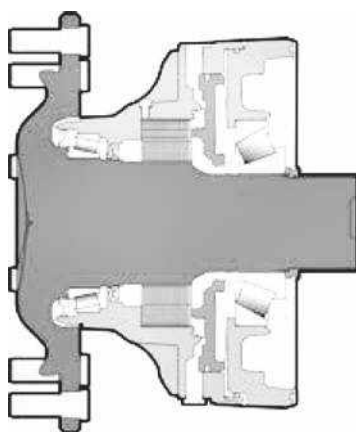
M

32

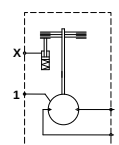
P-MS18.MSE18 series

P27 Parking brake

C					D				F			P				S					
1	1	2	3		1	2	3		1	2	3	1	2	3	4	1	2	3	4	5	6
P-M	S	1	8																		
P-M	S	E	1	8																	



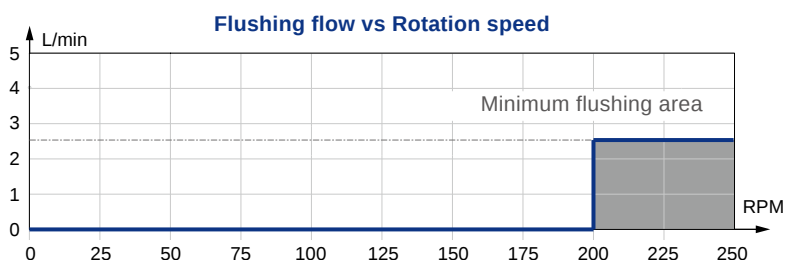
Brake schematic



Brake principle

This is a multidisc brake which is activated by a lack of pressure. The spring exerts a force on the piston, which presses on the fixed and mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

C	Q 3 1 0
	P 3 1 0
Max. rotation speed	200 rpm
Max. energy dissipation	200 kJ
Number of parking brake applications	1,000,000
Release brake pressure (min/max)	16 [232] / 30 [435]
Min. parking brake torque	19,800 Nm [14,600 lb.ft]
Min. static brake torque (after emergency braking)	16,400 Nm [12,100 lb.ft]
Min. dynamic brake torque in case of emergency brake with new brake	14,500 Nm [10,690 lb.ft]



Do not run-in the multidisc brakes.



The use of certain oils may not offer the characteristics stated above. Consult YEOSHE application engineer.



A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake). For all vehicles capable of speeds over 25 km/h, please contact YEOSHE.



When using the Boosted brake option, the P27 bearing support might not be able to withstand the combination of maximum hydrostatic torque and maximum service brake torque. Please contact YEOSHE application engineer for a detailed calculation.

Brakes



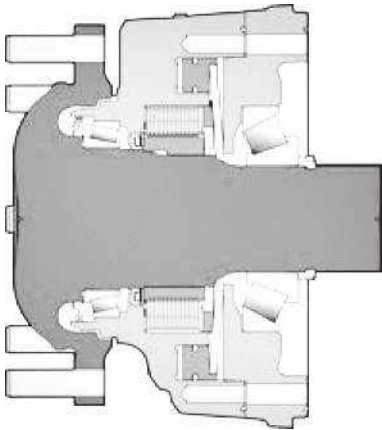
P20 Parking brake

M

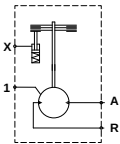
33

P-MS18.MSE18 series

P-M					C				D				F			P				S					
1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	1	2	3	4	1	2	3	4	5	6
P-M	S	1	8																						
P-M	S	E	1	8																					



Brake schematic



Brake principle

This is a multidisc brake which is activated by a lack of pressure. The spring exerts a force on the piston, which presses on the fixed and mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

C	R 2 1 0
	S 2 1 0
Max. rotation speed	200 rpm
Max. energy dissipation	200 kJ
Number of parking brake applications	1,000,000
Release brake pressure (min/max)	16 [232] / 30 [435]
Min. parking brake torque	20,000 Nm [14,750 lb.ft]
Min. static brake torque (after emergency braking)	15,000 Nm [11,060 lb.ft]
Min. dynamic brake torque in case of emergency brake with new brake	13,000 Nm [9,590 lb.ft]



Do not run-in the multidisc brakes.



The use of certain oils may not offer the characteristics stated above. Consult YEOSHE application engineer.



A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake). For all vehicles capable of speeds over 25 km/h, please contact YEOSHE.



When using the Boosted brake option, the P20 bearing support might not be able to withstand the combination of maximum hydrostatic torque and maximum service brake torque. Please YEOSHE contact application engineer for a detailed calculation.

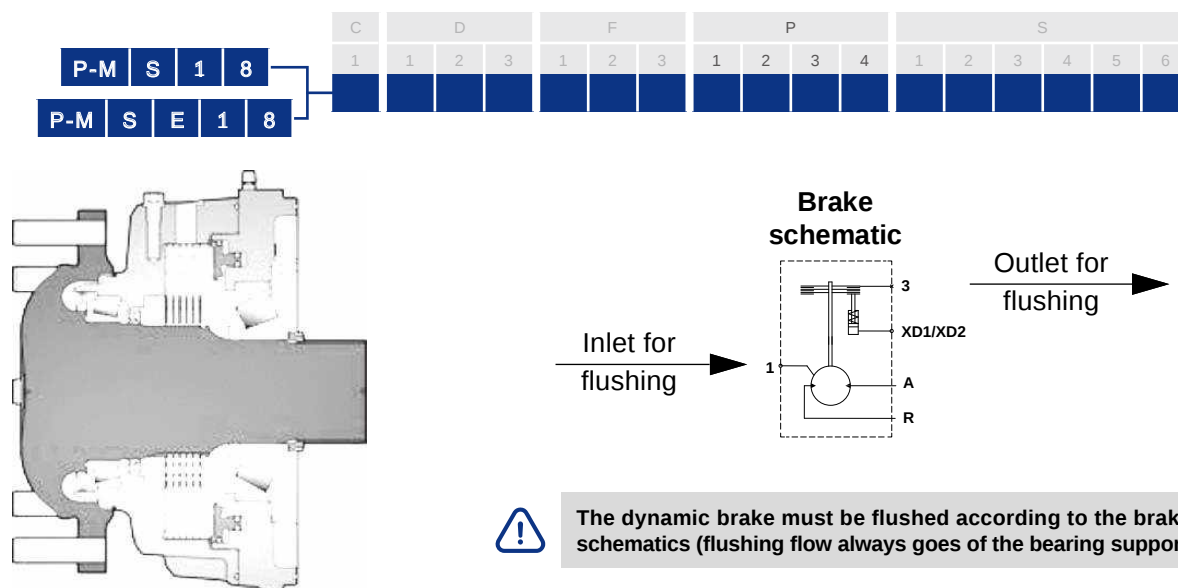
Brakes

M

34

P-MS18.MSE18 series

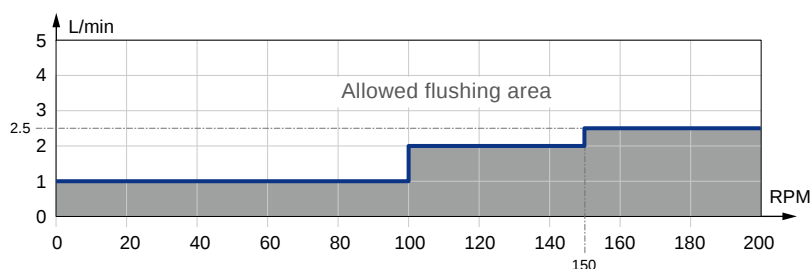
S20 Service brake



Brake principle

This is a multidisc brake which is activated by a braking pressure (dynamic braking). The braking command creates a pressure on the dynamic braking piston, which damps the fixed and free discs, preventing the shaft from turning. Braking torque increases linearly as a function of the piloting pressure.

C	U 2 1 0	V 2 1 0
	W 2 1 0	Y 2 1 0
Max. rotation speed	200 rpm	
Max. energy dissipation	1,250 kJ	
Average torque during dynamic braking	25,000 Nm [18,440 lb.ft]	
Pressure to obtain max. permissible braking	120 bar	
Piston chamber piloting volume, worn brake	97 cm ³	
Service brake max. allowed energy	850 kJ	



Do not run-in the multidisc brakes.



The use of certain oils may not offer the characteristics stated above. Consult YEOSHE application engineer.



A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake). For all vehicles capable of speeds over 25 km/h, please contact YEOSHE.



When using the Boosted brake option, the S20 bearing support might not be able to withstand the combination of maximum hydrostatic torque and maximum service brake torque. Please contact YEOSHE application engineer for a detailed calculation.



Options

M

35

P-MS18.MSE18 series

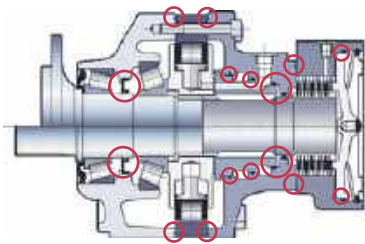
C					D			F			P				S					
1	1	2	3		1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
P-M	S	1	8																	
P-M	S	E	1	8																



You can accumulate more than one optional part.
Consult YEOSHE .

1 Fluorinated elastomer seals

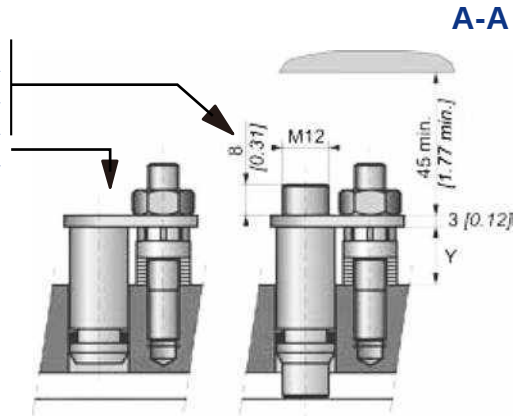
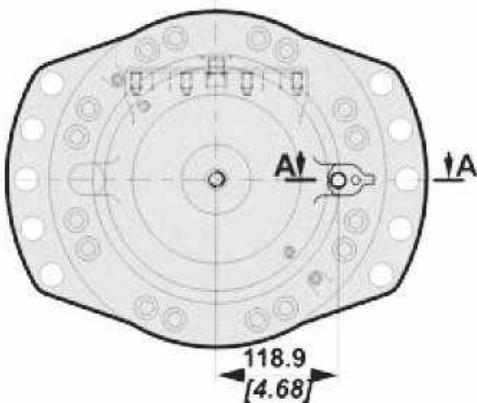
Nitrile seals marked in the figure below replaced by fluorinated elastomer seals.



Consult YEOSHE sales engineer.

2 S Q 8 Installed speed sensor or predisposition

Designation	C
T4 speed sensor (without rotation direction)	2
TR speed sensor (digital rotation direction)	S
TD speed sensor (two phase shifted frequencies)	Q
Predisposition for speed sensor	8



Max. length Y = 17.6
Standard number of pulses per revolution = 60



Look at the "Mobile Electronic" N° A01889D technical catalogue for the sensor specifications and its connection.



To install the sensor, see the "Installation guide" brochure No. B61352L.

Options

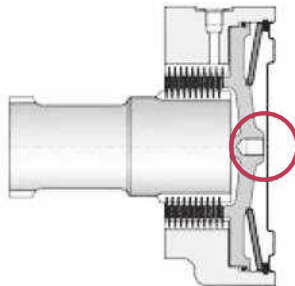
M

36

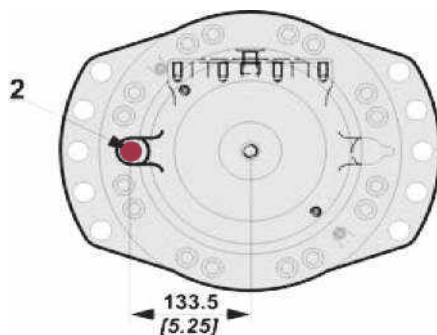
P-MS18.MSE18 series

3 Brake environmental cover without plug

No plug or hole in the cover.

**5** Drainage

Additional drain in the cover.

**6** Industrial support

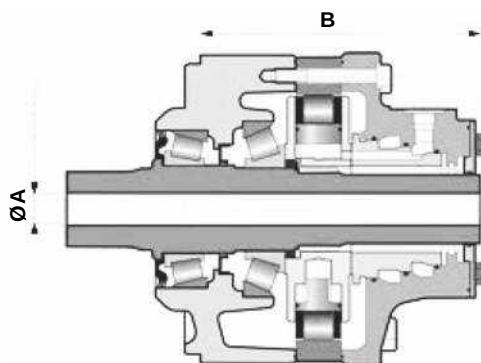
Reduction of around 50% from the rated value in the bearings' preload value.



For a precise calculation, consult YEOSHE.

7 Diamond

Special treatment of the motor core which considerably increases its strength, making the motor much more tolerant to temporary instances of the operating conditions being exceeded.

A Hollow shaft

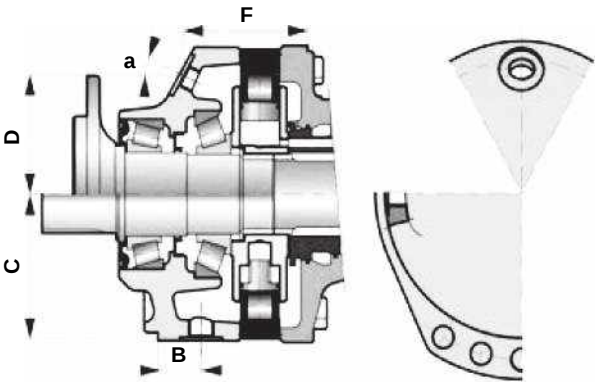
A mm [in]	B mm [in]
Ø 60 [2.36 dia.]	297.5 [11.71]

Radial load x 0.75
No torque transmittable to the rear



Options

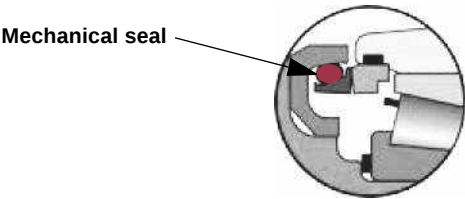
B Drain on the bearing support



	ISO	B mm [in]	C mm [in]	D mm [in]	F mm [in]	a
Shaft motor	M16 x 1.5	34.0 [1.34]	100 [3.94]			
Wheel motor	M22 x 1.5			130.5 [5.14]	135 [5.31]	36°
Short wheel motor				123 [4.84]	121 [4.76]	25°

C Abrasive environments
(mechanical seal)

Some environments can be very harmful. The mirror seal gives reinforced motor sealing.

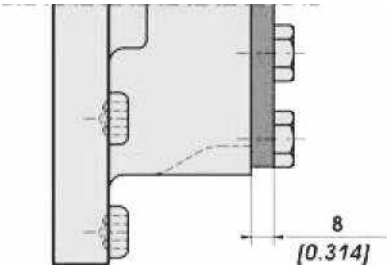


Consult YEOSHE sales engineer.

E Reinforced sealing

Requires reinforced seals and, for an unbraked motor, a rear reinforced plate (R18 - 8[0.314] thick, instead of 4[0.157]).

P-M		S		1		8		C		D				F			P				S					
1	2	3	4	5	6	7	8	1	2	3	4	5	6	1	2	3	1	2	3	4	1	2	3	4	5	6
P-M	S	E	1	8										R	1	8					E					



G Special wheel rim mounting

Enables certain combinations different from the standard mountings defined on pages 10.



Consult YEOSHE sales engineer.

Options

M

38

P-MS18.MSE18 series

H High efficiency

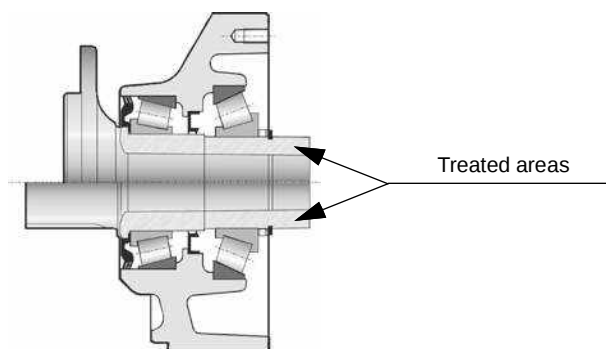
Reinforced piston sealing to improve volumetric efficiency.



For a precise calculation,
consult YEOSHE application engineer.

J Treated shaft

Heat treatment on the indicated bearing radius and splines.

**M** High speed

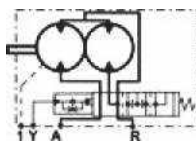
Under certain conditions, an increase in the maximum speed of 30% above the values indicated in the table on page 2 is possible.



For a precise calculation,
consult YEOSHE application engineer.

T Soft Shift

Progressive displacement change (cushioned slide-valve).



Consult YEOSHE sales engineer

U Boosted braking

For a precise calculation,
consult YEOSHE application engineer.

YEOSHE BEST CHOICE
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Efficient Performance
Reliable Quality and Service



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