SEAWIDE

Type 510

The Type **510** planetary gearbox is designed to deliver reliable, high-performance motion control in tough industrial environments. Its flexible design includes single to four-stage configurations (**L1 to L4**), enabling a broad spectrum of torque and speed reduction options to match complex operational needs. The **L1** version covers gear ratios from **3.40 to 7.00**, generating torque between **2200 and 5540 Nm**. The **L2** setup extends the ratio range from **11.56 to 49**, while **L3** offers between **51.33 and 352.80**. For maximum reduction, **L4** provides gear ratios as high as **2190.89**. With support for input powers of **7, 8, 12, or 20** kW and a maximum input speed of **2000** rpm, this gearbox is engineered for smooth and stable operation, even in systems subject to continuous duty or irregular load conditions.

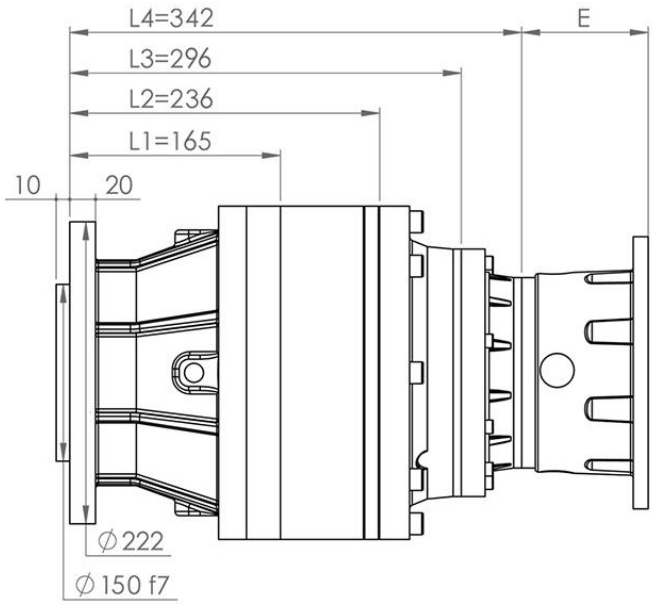
Thanks to its ability to produce high output torque—up to **5540 Nm**—and its versatile gear reduction options, the Type **510** planetary gearbox is ideal for use in industries where robust and precise power transmission is essential. In the mining sector, it powers crushers, feeders, and conveyor systems that handle bulk materials under intense loads. The gearbox is also widely used in cement factories for driving large rotary kilns and mixing units, where both torque and thermal stability are critical. In steel production and metal forming operations, it helps control the motion of heavy rolling and forging equipment. Furthermore, the Type **510** is a reliable choice in waste processing and recycling plants, especially for heavy-duty shredders and industrial compactors. It performs equally well in marine applications such as winches and anchor handling, and in material handling systems including industrial cranes, automated pallet systems, and lifting units that require stable output at low speeds under variable loading.

i		T2 [Nm]						n1 max	T2 max	pt
L	1/…	n2*h						[min]	[Nm]	[Kw]
		10000	25000	50000	100000	500000	1000000			
		(10)4	(2.5*10)4	(5*10)4	(10)5	(5*10)5	(10)6			
L1	3.40	5540	5220	5070	4950	4200	3400	2000	6500	21
	4.00	6270	5800	5270	4630	4130	3360			
	5.00	5370	4460	3870	3540	3200	3070			
	5.80	4700	3900	3400	3180	2880	2760			
	7.00	3640	3010	2640	2530	2290	2200			
L2	11.56	5540	5220	5070	4950	4200	3400	2000	6500	12
	13.60	5540	5220	5070	4950	4200	3400			
	16.00	6270	5800	5270	4630	4130	3360			
	17.00	5540	5220	5070	4950	4200	3400			
	19.72	5540	5220	5070	4950	4200	3400			
	20.00	6270	5800	5270	4630	4130	3360			
	23.20	6270	5800	5270	4630	4130	3360			
	23.80	5540	5220	5070	4950	4200	3400			
	25.00	5370	4460	3870	3540	3200	3070			
	28.00	6270	5800	5270	4630	4130	3360			
	29.00	4700	3900	3400	3180	2880	2760			
	29.00	5370	4460	3870	3540	3200	3070			
	33.64	4700	3900	3400	3180	2880	2760			
	35.00	5370	4460	3870	3540	3200	3070			
	35.00	3640	3010	2640	2530	2290	2200			
	40.60	4700	3900	3400	3180	2880	2760			
	49.00	3640	3010	2640	2530	2290	2200			
L3	51.33	5540	5220	5070	4950	4200	3400	2000	6500	9
	55.76	5540	5220	5070	4950	4200	3400			
	60.38	5540	5220	5070	4950	4200	3400			
	62.66	5540	5220	5070	4950	4200	3400			
	65.60	6270	5800	5270	4630	4130	3360			
	71.04	6270	5800	5270	4630	4130	3360			
	73.71	5540	5220	5070	4950	4200	3400			
	83.23	5540	5220	5070	4950	4200	3400			
	86.72	6270	5800	5270	4630	4130	3360			
	92.14	5540	5220	5070	4950	4200	3400			
	97.92	5540	5220	5070	4950	4200	3400			
	106.88	5540	5220	5070	4950	4200	3400			
	108.40	6270	5800	5270	4630	4130	3360			
	115.20	6270	5800	5270	4630	4130	3360			

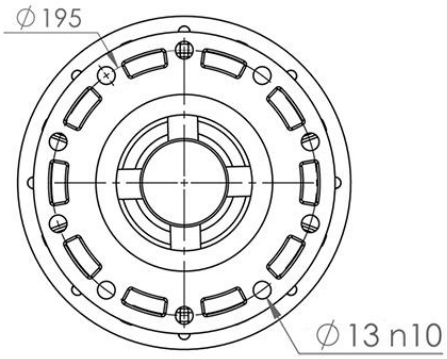
i		T2 [Nm]						n1 max	T2 max	pt
L	1/…	n2*h						[min]	[Nm]	[Kw]
		10000	25000	50000	100000	500000	1000000			
		(10)4	(2.5*10)4	(5*10)4	(10)5	(5*10)5	(10)6			
L3	122.40	5540	5220	5070	4950	4200	3400	2000	6500	9
	125.74	6270	5800	5270	4630	4130	3360			
	135.50	5370	4460	3870	3540	3200	3070			
	141.98	5540	5220	5070	4950	4200	3400			
	144.00	6270	5800	5270	4630	4130	3360			
	157.18	5370	4460	3870	3540	3200	3070			
	167.04	6270	5800	5270	4630	4130	3360			
	171.36	5540	5220	5070	4950	4200	3400			
	180.00	5370	4460	3870	3540	3200	3070			
	201.60	6270	5800	5270	4630	4130	3360			
	208.80	5370	4460	3870	3540	3200	3070			
	242.21	4700	3900	3400	3180	2880	2760			
	252.00	5370	4460	3870	3540	3200	3070			
	292.32	4700	3900	3400	3180	2880	2760			
	352.80	3640	3010	2640	2530	2290	2200			
L4	346.27	6270	5800	5270	4630	4130	3360	2000	6500	8
	374.98	6270	5800	5270	4630	4130	3360			
	389.09	5540	5220	5070	4950	4200	3400			
	457.75	6270	5800	5270	4630	4130	3360			
	572.19	5370	4460	3870	3540	3200	3070			
	663.74	4700	3900	3400	3180	2880	2760			
	715.39	6270	5800	5270	4630	4130	3360			
	894.24	6270	5800	5270	4630	4130	3360			
	1037.32	6270	5800	5270	4630	4130	3360			
	1064.15	5540	5220	5070	4950	4200	3400			
	1117.80	5370	4460	3870	3540	3200	3070			
	1296.65	5370	4460	3870	3540	3200	3070			
	1564.92	5370	4460	3870	3540	3200	3360			
	1815.31	4700	3900	3400	3180	2880	2760			
	2190.89	3640	3010	2640	2530	2290	2200			

SH 510

M



Output Flange Dimensions



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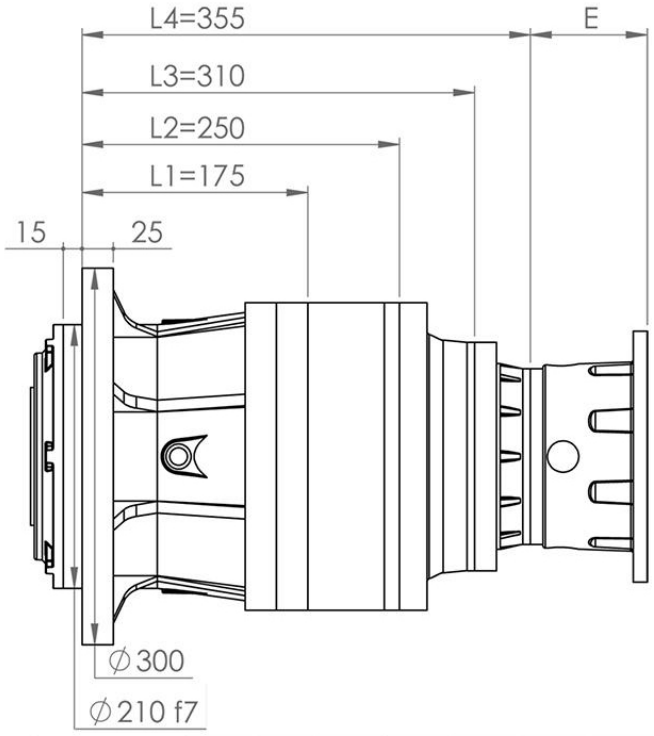
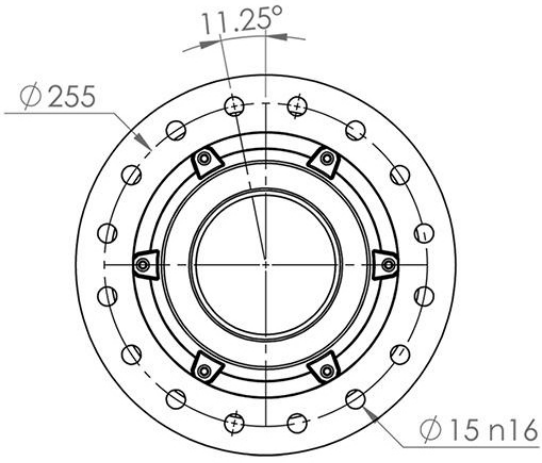
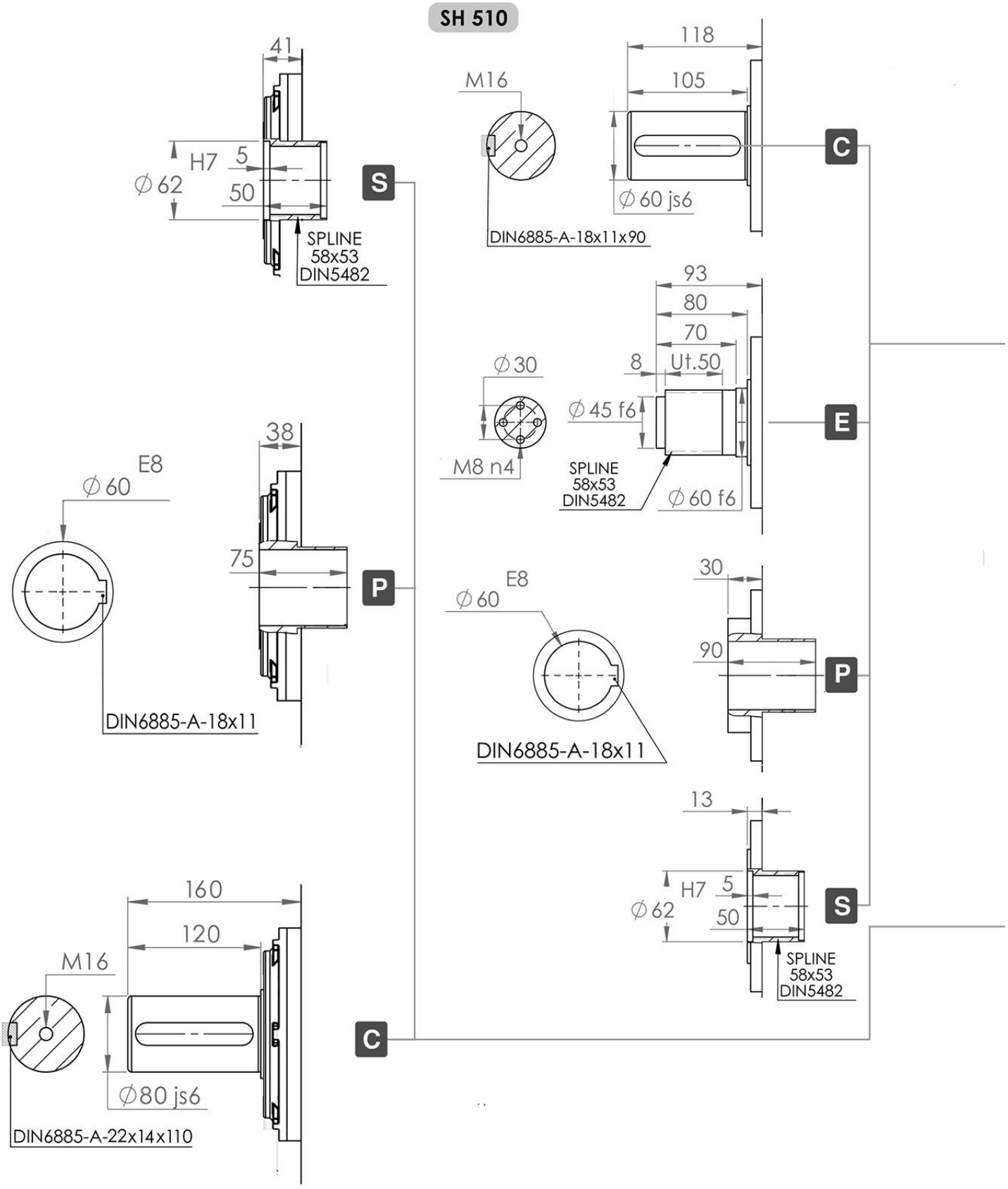


Output Flange Dimensions



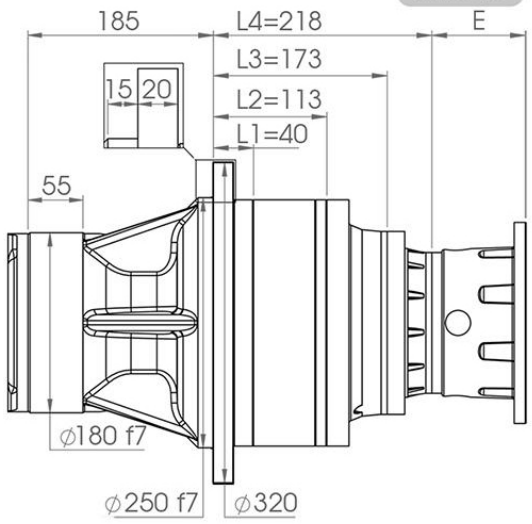
MOTOR FRAME		80-4A	90LA	90LB	100LA	100LB	112M	132MA	132MB	160LA	160LB	180M	180L	200L	225S
E	L1	-	-	-	-	-	-	-	-	-	-	177	177	177	207
	L2	-	-	-	-	-	-	-	144	177	177	-	-	-	-
	L3	-	96	96	117	117	117	132	132	-	-	-	-	-	-
	L4	93	93	-	-	-	-	-	-	-	-	-	-	-	-

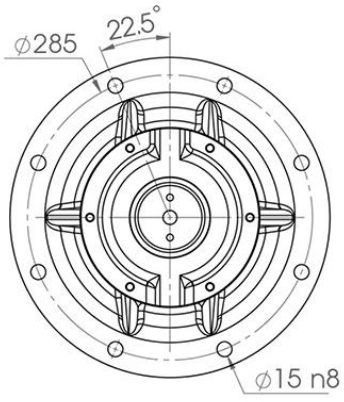
SH 510


41
H7
5
∅62
50
SPLINE
58x53
DIN5482
S
M16
118
105
∅60 js6
DIN6885-A-18x11x90
C
93
80
70
8
Ut.50
∅30
∅45 f6
M8 n4
SPLINE
58x53
DIN5482
∅60 f6
E
38
E8
∅60
75
P
DIN6885-A-18x11
E8
∅60
30
90
P
DIN6885-A-18x11
13
H7
5
∅62
50
S
SPLINE
58x53
DIN5482
160
120
M16
∅80 js6
DIN6885-A-22x14x110
C

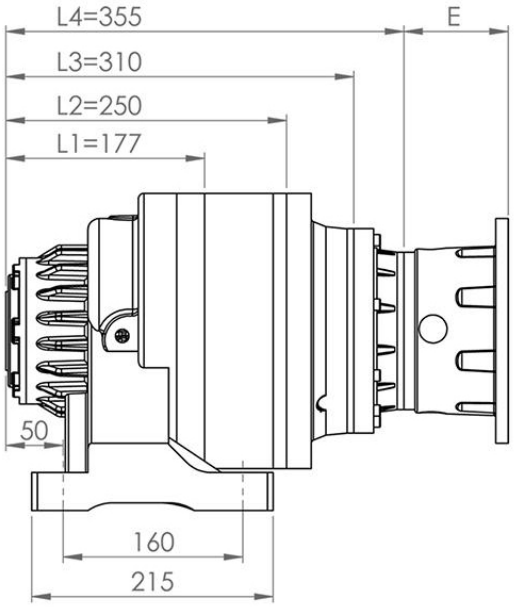
SH 510

V


185
L4=218
E
L3=173
L2=113
L1=40
15
20
55
⌀180 f7
⌀250 f7
⌀320


⌀285
22.5°
⌀15 n8

U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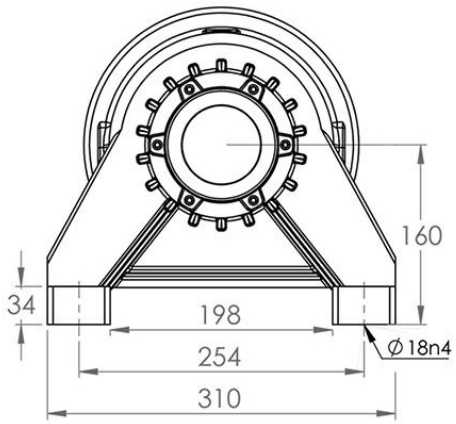
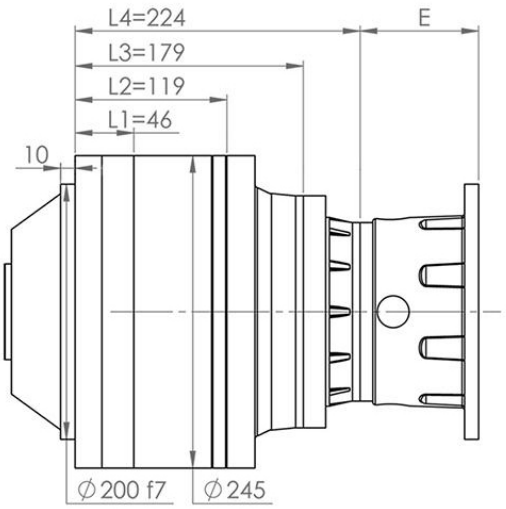
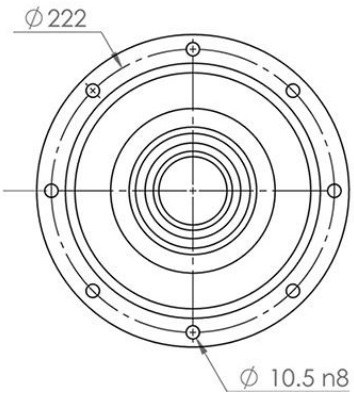
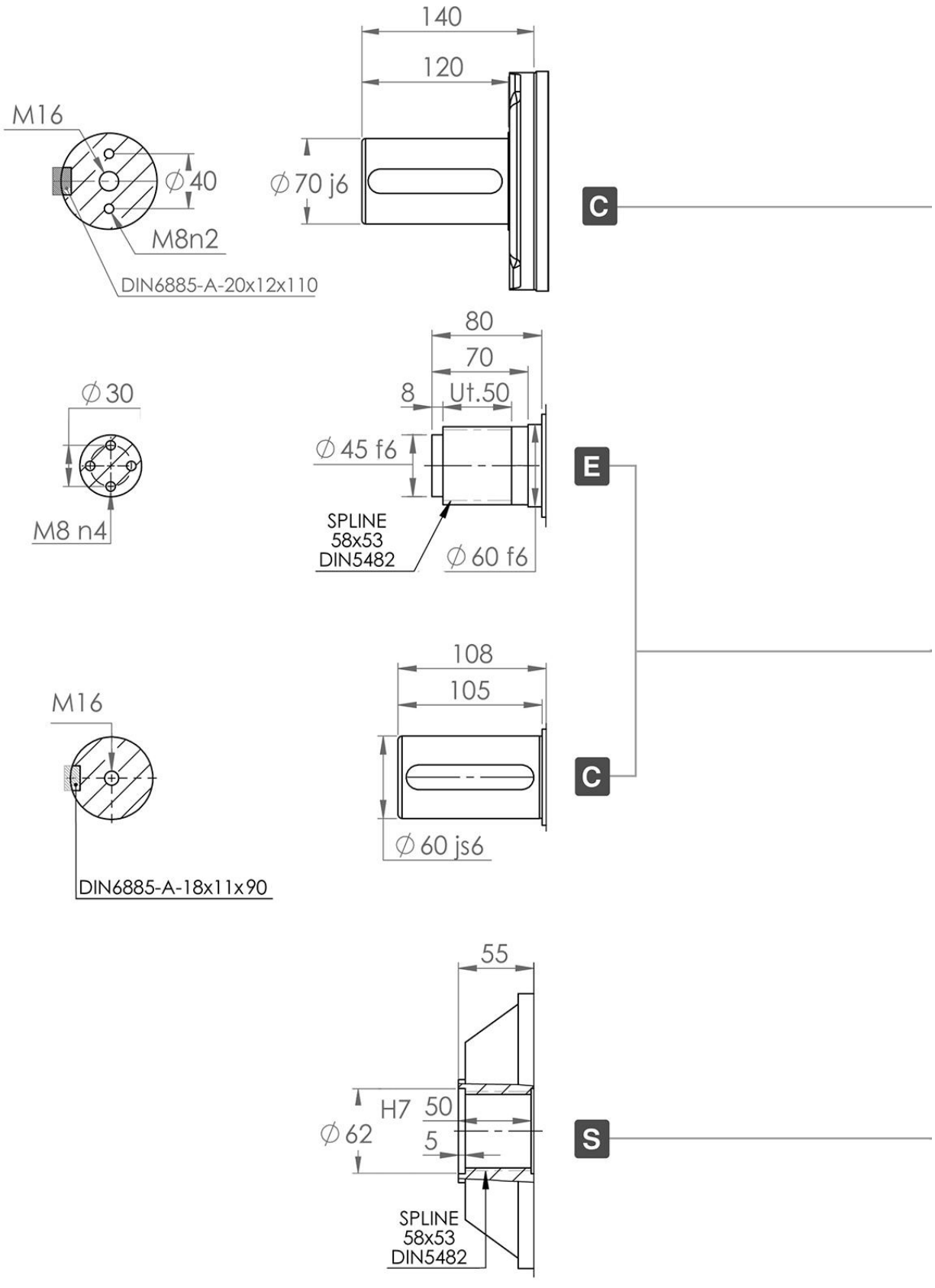
E
L3=310
L2=250
L1=177
50
160
215


160
34
198
254
310
⌀18n4

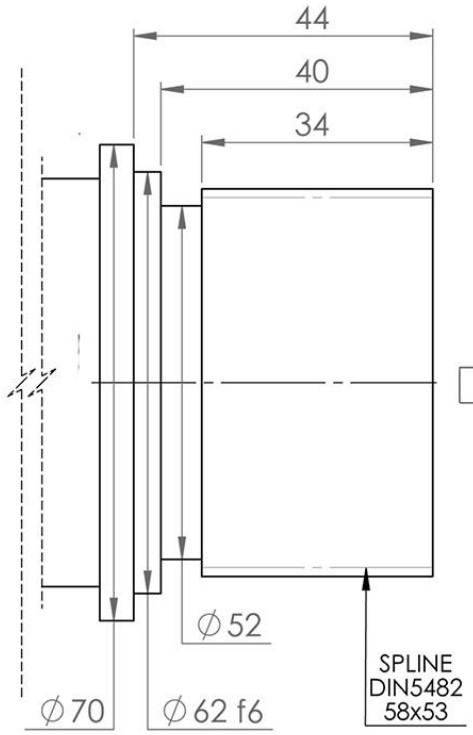
F


L4=224
E
L3=179
L2=119
L1=46
10
⌀200 f7
⌀245


⌀222
⌀ 10.5 n8

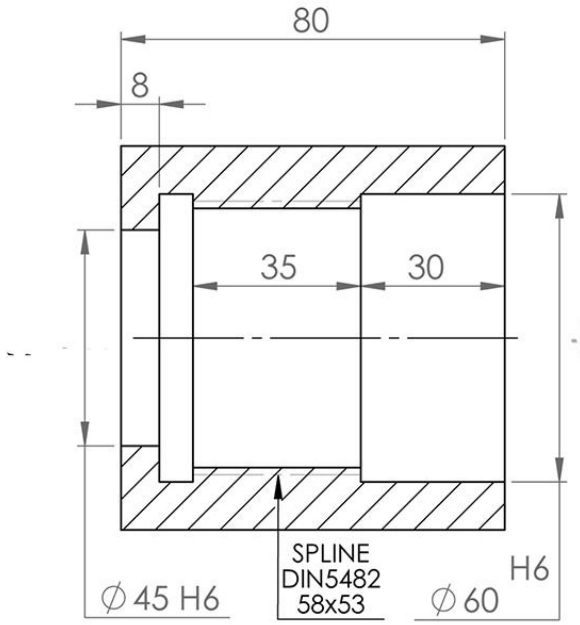

140
120
M16
∅40
M8n2
DIN6885-A-20x12x110
∅70 j6
C
80
70
8
Ut.50
∅30
∅45 f6
E
M8 n4
SPLINE
58x53
DIN5482
∅60 f6
108
105
M16
C
∅60 js6
DIN6885-A-18x11x90
55
H7
50
∅62
5
S
SPLINE
58x53
DIN5482

SH 510



Saft S(E)510

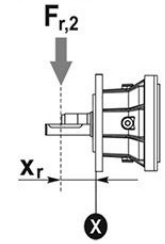
- SH 510 ... PS
- SH 510 ... FS
- SH 510 ... MS

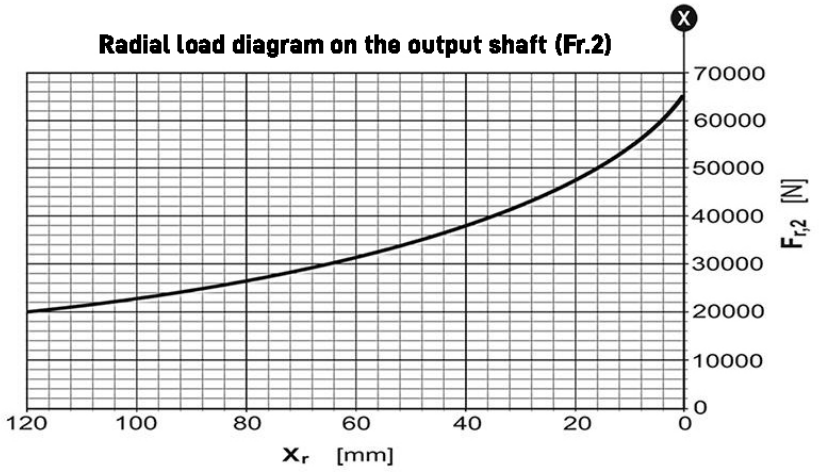


Bush S(I)510

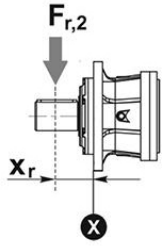
- SH 510 ... ME
- SH 510 ... UE

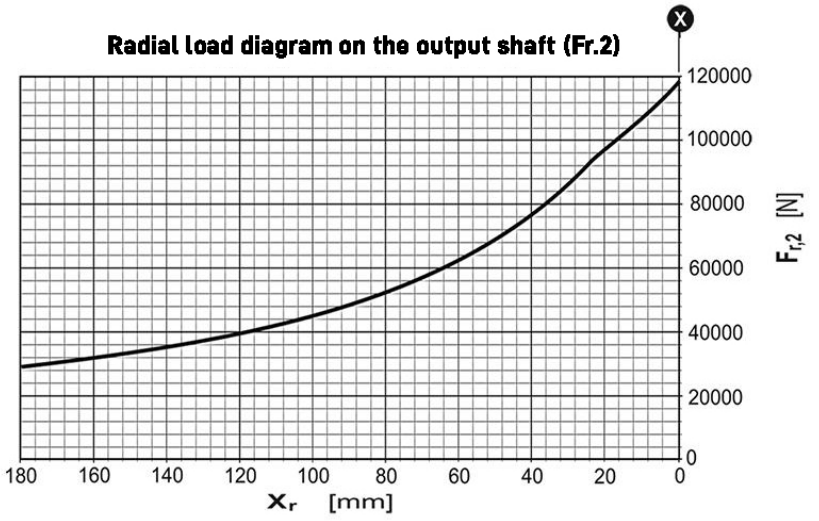
SH	510	..	MC ME



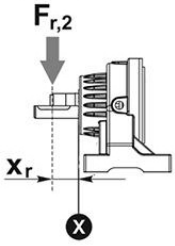


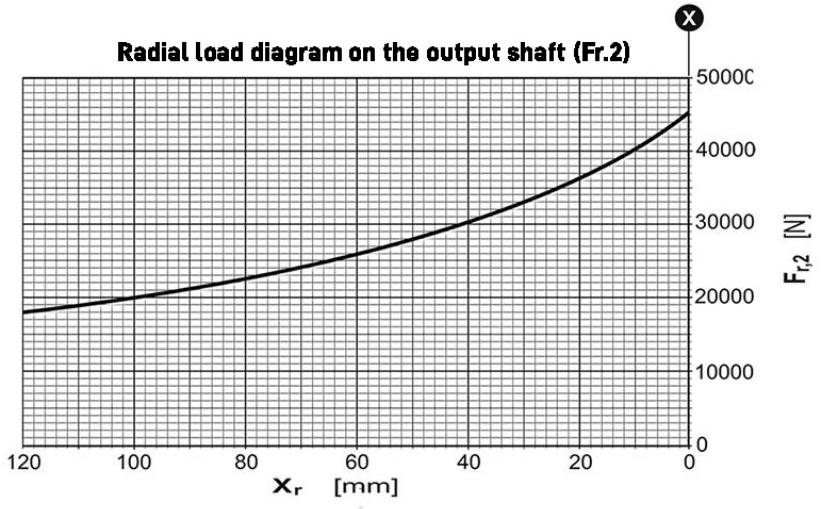
SH	510	..	PC

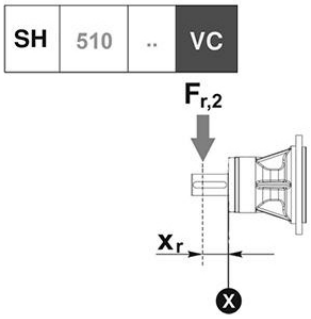




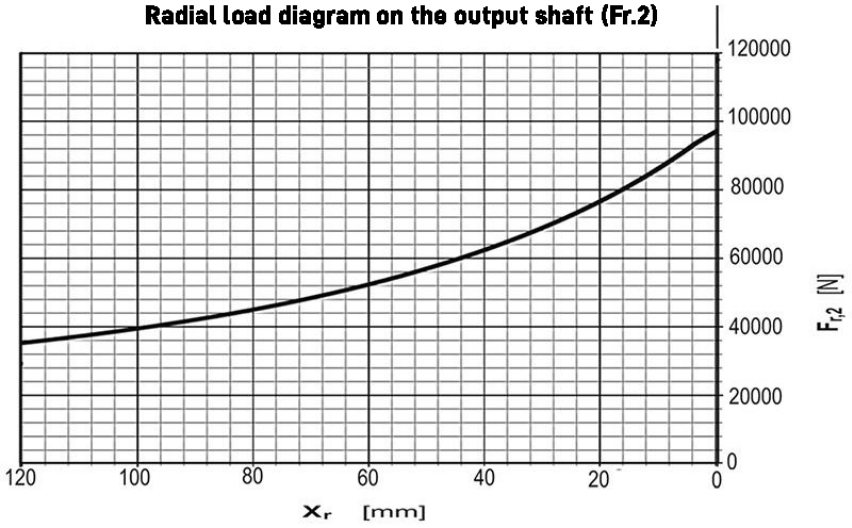
SH	510	..	UE UC





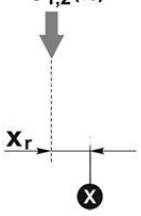


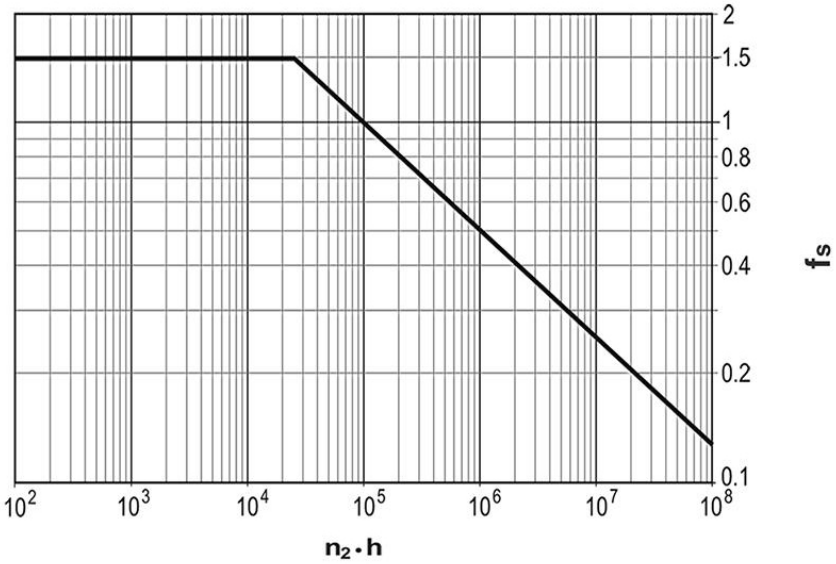
Radial load diagram on the output shaft (Fr.2)



Radial load safety factor diagram on the output shaft

Modified radial load $F_{r,2(fs)}$





Modified radial load $F_{r.2(fs)} = F_{r.2} \times f_s$