





**309L**

**M<sub>2</sub> = 18500 Nm**

	i	M <sub>n2</sub> [Nm]						P <sub>1</sub> [kW]	P <sub>t</sub> [kW]	n <sub>1</sub> [min <sup>-1</sup> ]	n <sub>1max</sub> [min <sup>-1</sup> ]	M <sub>b</sub> [Nm]	
		n <sub>2</sub> ·h 10 000	n <sub>2</sub> ·h 25 000	n <sub>2</sub> ·h 50 000	n <sub>2</sub> ·h 100 000	n <sub>2</sub> ·h 500 000	n <sub>2</sub> ·h 1 000 000						
<b>L1</b>	3.43	13 000	13 000	13 000	13 000	11 200	9 100	130	25	1 500	2 000	3 200	6L
	4.09	22 500	20 600	19 000	16 800	10 400	8 400	130	25	1 500	2 000	3 200	6L
	5.25	21 000	18 100	16 200	16 000	10 700	8 700	130	25	1 500	2 000	3 200	6L
	6.23	17 000	14 400	13 000	13 000	10 400	8 500	130	25	1 500	2 000	3 200	6L
<b>L2</b>	12.3	13 000	13 000	13 000	13 000	8 700	7 000	60	18	1 800	3 800	1 000	5K
	14.7	17 200	16 700	16 700	13 800	8 500	6 900	60	18	1 800	3 800	1 000	5K
	17.4	21 300	20 600	19 000	15 600	9 600	7 800	60	18	1 800	3 800	1 000	5K
	21.8	18 000	17 500	17 500	15 200	9 400	7 600	60	18	1 800	3 800	1 000	5K
	25.4	14 500	14 300	14 300	14 300	9 200	7 500	60	18	1 800	3 800	800	5G
	28.0	21 000	18 100	16 200	16 000	10 700	8 700	60	18	1 800	3 800	800	5G
	30.7	12 300	12 300	12 300	12 300	7 800	6 300	60	18	1 800	3 800	630	5E
	32.6	18 300	18 100	16 200	16 000	10 700	8 700	60	18	1 800	3 800	630	5E
	38.6	17 000	14 400	13 000	13 000	10 400	8 500	57	18	1 800	3 800	500	5C
	46.7	17 000	14 400	13 000	13 000	10 400	8 500	49	18	1 800	3 800	400	5B
<b>L3</b>	51.3	17 200	16 700	16 700	13 800	8 500	6 900	30	11	2 000	4 000	400	4K
	60.5	21 300	20 600	19 000	15 500	9 500	7 700	30	11	2 000	4 000	400	4K
	74.1	21 300	20 600	19 000	15 500	9 500	7 700	30	11	2 000	4 000	260	4F
	80.6	21 000	18 100	16 200	16 000	10 000	8 200	30	11	2 000	4 000	260	4F
	93.0	18 000	17 500	17 500	15 200	9 400	7 600	30	11	2 000	4 000	260	4F
	100	21 300	20 600	18 000	14 600	9 000	7 300	30	11	2 000	4 000	260	4F
	113	18 300	18 100	16 200	16 000	10 700	8 700	28	11	2 000	4 000	260	4F
	126	18 000	17 500	17 500	15 200	9 400	7 600	24	11	2 000	4 000	260	4F
	139	18 300	18 100	16 200	16 000	10 700	8 700	23	11	2 000	4 000	160	4D
	162	21 000	18 100	16 200	16 000	10 700	8 700	23	11	2 000	4 000	160	4D
	177	12 300	12 300	12 300	12 300	7 800	6 300	12.0	11	2 000	4 000	160	4D
	202	21 000	18 100	16 200	16 000	10 700	8 700	15.0	11	2 000	4 000	100	4B
	223	17 000	14 400	13 000	13 000	10 400	8 500	14.1	11	2 000	4 000	100	4B
	239	17 000	14 400	13 000	13 000	10 400	8 500	13.3	11	2 000	4 000	100	4B
284	15 800	15 800	15 800	15 000	9 200	7 500	10.0	11	2 000	4 000	100	4B	
336	17 000	14 400	13 000	13 000	10 400	8 500	10.0	11	2 000	4 000	100	4B	
<b>L4</b>	349	21 300	20 600	19 000	15 500	9 500	7 700	18.0	7.5	2 000	4 000	100	4B
	411	13 000	13 000	13 000	11 500	7 100	5 800	9.4	7.5	2 000	4 000	50	4A
	465	21 000	18 100	16 200	16 000	10 000	8 200	14.3	7.5	2 000	4 000	50	4A
	513	13 000	13 000	13 000	11 500	7 100	5 800	7.5	7.5	2 000	4 000	50	4A
	579	21 300	20 600	18 000	14 600	9 000	7 300	10.9	7.5	2 000	4 000	50	4A
	654	18 300	18 100	16 200	16 000	10 700	8 700	9.5	7.5	2 000	4 000	50	4A
	722	21 300	20 600	18 000	14 600	9 000	7 300	8.7	7.5	2 000	4 000	50	4A
	801	18 300	18 100	16 200	16 000	10 700	8 700	8.0	7.5	2 000	4 000	50	4A
	906	18 000	17 500	17 500	15 200	9 400	7 600	7.1	7.5	2 000	4 000	50	4A
	999	18 300	18 100	16 200	16 000	10 700	8 700	6.6	7.5	2 000	4 000	50	4A
	1 149	17 000	14 400	13 000	13 000	10 400	8 500	5.6	7.5	2 000	4 000	50	4A
	1 274	12 300	12 300	12 300	12 300	7 800	6 300	3.6	7.5	2 000	4 000	50	4A
	1 380	17 000	14 400	13 000	13 000	10 400	8 500	4.8	7.5	2 000	4 000	50	4A
	1 605	17 000	14 400	13 000	13 000	10 400	8 500	4.1	7.5	2 000	4 000	50	4A
	1 723	17 000	14 400	13 000	13 000	10 400	8 500	3.9	7.5	2 000	4 000	50	4A
2 041	15 800	15 800	15 800	15 000	9 200	7 500	3.0	7.5	2 000	4 000	50	4A	
2 423	17 000	14 400	13 000	13 000	10 400	8 500	2.7	7.5	2 000	4 000	50	4A	

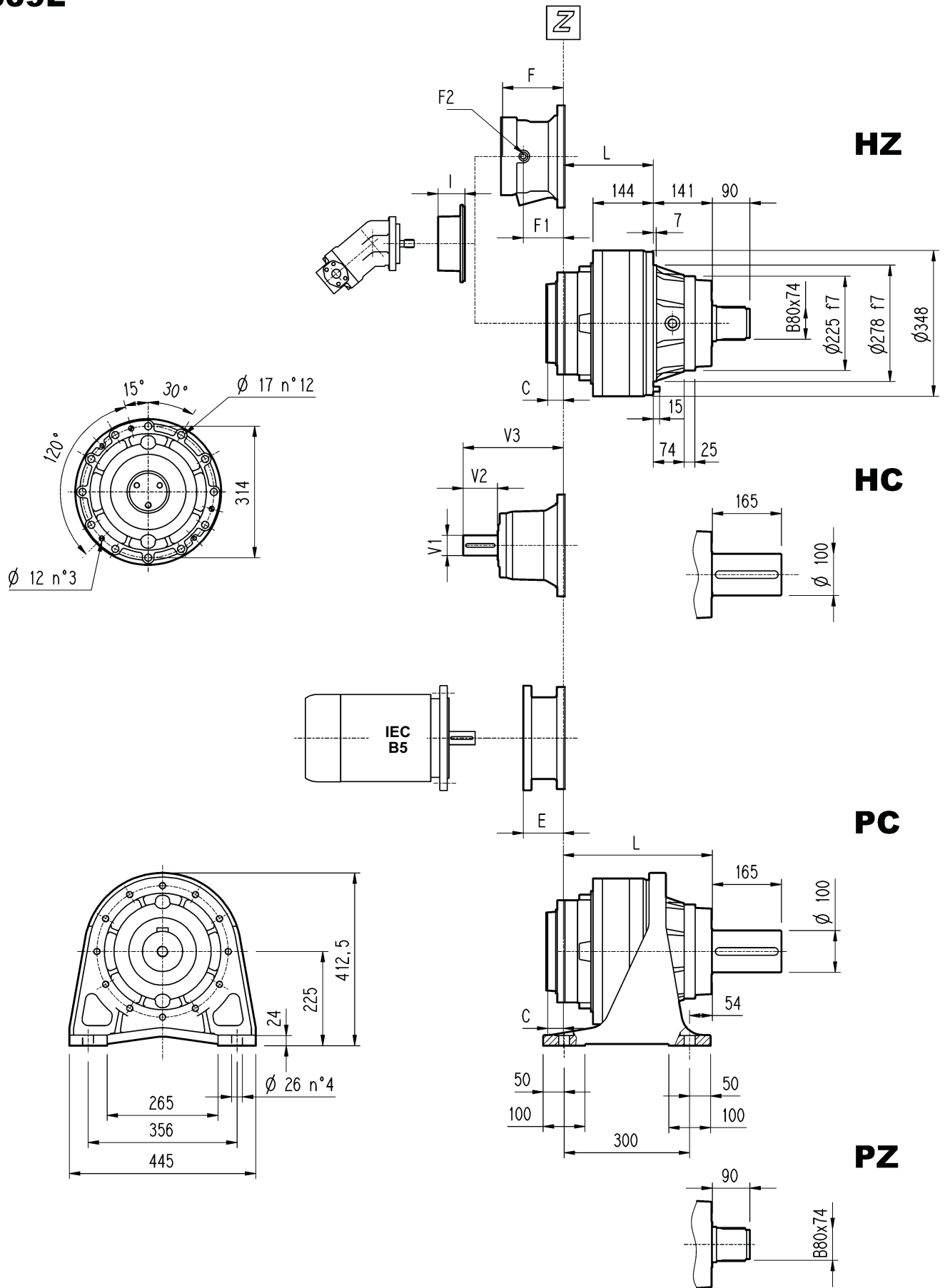
**M<sub>2max</sub> = 1.2 · M<sub>n2</sub>** (n<sub>2</sub> · h = 10 000)

**M<sub>2</sub> = 18500 Nm**
**309R**

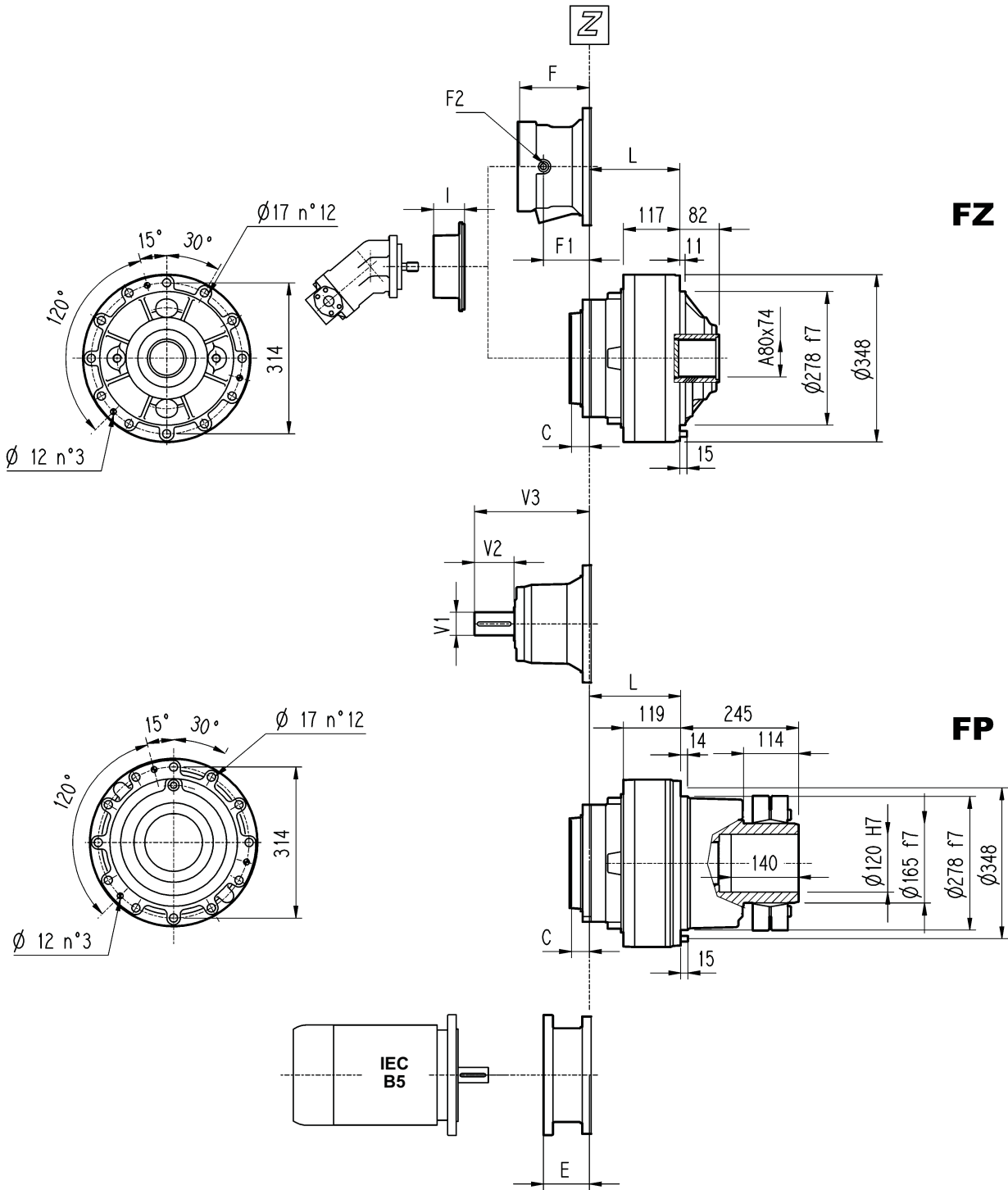
	i	M <sub>n2</sub> [Nm]						P <sub>1</sub> [kW]	P <sub>t</sub> [kW]	n <sub>1</sub> [min <sup>-1</sup> ]	n <sub>1max</sub> [min <sup>-1</sup> ]	M <sub>b</sub> [Nm]	
		n <sub>2</sub> ·h 10 000	n <sub>2</sub> ·h 25 000	n <sub>2</sub> ·h 50 000	n <sub>2</sub> ·h 100 000	n <sub>2</sub> ·h 500 000	n <sub>2</sub> ·h 1 000 000						
<b>R2</b>	13.0	9 800	8 500	7 600	6 800	5 300	4 300	85	35	1 800	3 800	1 000	5K
	15.5	11 400	9 800	8 800	7 900	5 900	4 800	85	35	1 800	3 800	1 000	5K
	19.8	14 000	12 100	10 800	9 700	7 100	5 700	85	35	1 800	3 800	1 000	5K
	23.5	16 200	14 000	12 500	11 200	8 000	6 500	85	35	1 800	3 800	800	5G
<b>R3</b>	31.6	12 800	11 000	9 100	7 400	4 550	3 700	35	20	2 000	4 000	440	4L
	37.7	14 800	12 600	10 300	8 300	5 100	4 200	35	20	2 000	4 000	440	4L
	44.6	17 100	14 100	11 500	9 400	5 800	4 700	35	20	2 000	4 000	400	4K
	55.9	18 000	16 600	13 500	11 000	6 800	5 500	35	20	2 000	4 000	400	4K
	65.0	14 500	14 300	14 300	12 200	7 500	6 100	35	20	2 000	4 000	260	
	71.8	21 000	18 100	16 100	13 100	8 100	6 500	35	20	2 000	4 000	330	4H
	78.6	12 300	12 300	12 300	12 300	7 800	6 300	27	20	2 000	4 000	260	4F
	83.4	18 300	18 100	16 200	14 500	9 000	7 300	35	20	2 000	4 000	260	4F
	99.0	17 000	14 400	13 000	13 000	10 100	8 200	27	20	2 000	4 000	260	4F
	120	17 000	14 400	13 000	13 000	10 400	8 500	23	20	2 000	4 000	160	4D
<b>R4</b>	152	21 300	20 600	18 000	14 600	9 000	7 300	15.0	14	2 000	4 000	160	4D
	165	21 000	18 100	16 200	15 100	9 300	7 500	15.0	14	2 000	4 000	160	4D
	191	18 000	17 500	17 500	15 200	9 400	7 600	15.0	14	2 000	4 000	160	4D
	206	21 300	20 600	18 000	14 600	9 000	7 300	15.0	14	2 000	4 000	160	4D
	232	18 300	18 100	16 200	16 000	10 700	8 700	15.0	14	2 000	4 000	100	4B
	258	18 000	17 500	17 500	15 200	9 400	7 600	15.0	14	2 000	4 000	100	4B
	284	18 300	18 100	16 200	16 000	10 700	8 700	15.0	14	2 000	4 000	100	4B
	313	17 000	14 400	13 000	13 000	10 400	8 500	15.0	14	2 000	4 000	100	4B
	331	21 000	18 100	16 200	16 000	10 700	8 700	15.0	14	2 000	4 000	100	4B
	363	12 300	12 300	12 300	12 300	7 800	6 300	10.4	14	2 000	4 000	100	4B
	413	21 000	18 100	16 200	16 000	10 700	8 700	15.0	14	2 000	4 000	100	4B
	457	17 000	14 400	13 000	13 000	10 400	8 500	12.3	14	2 000	4 000	50	4A
	490	17 000	14 400	13 000	13 000	10 400	8 500	11.6	14	2 000	4 000	50	4A
	581	15 800	15 800	15 800	15 000	9 200	7 500	8.7	14	2 000	4 000	50	4A
690	17 000	14 400	13 000	13 000	10 400	8 500	8.7	14	2 000	4 000	50	4A	

$$M_{2max} = 1.2 \cdot M_{n2} \quad (n_2 \cdot h = 10\,000)$$

**309L**



# 309L

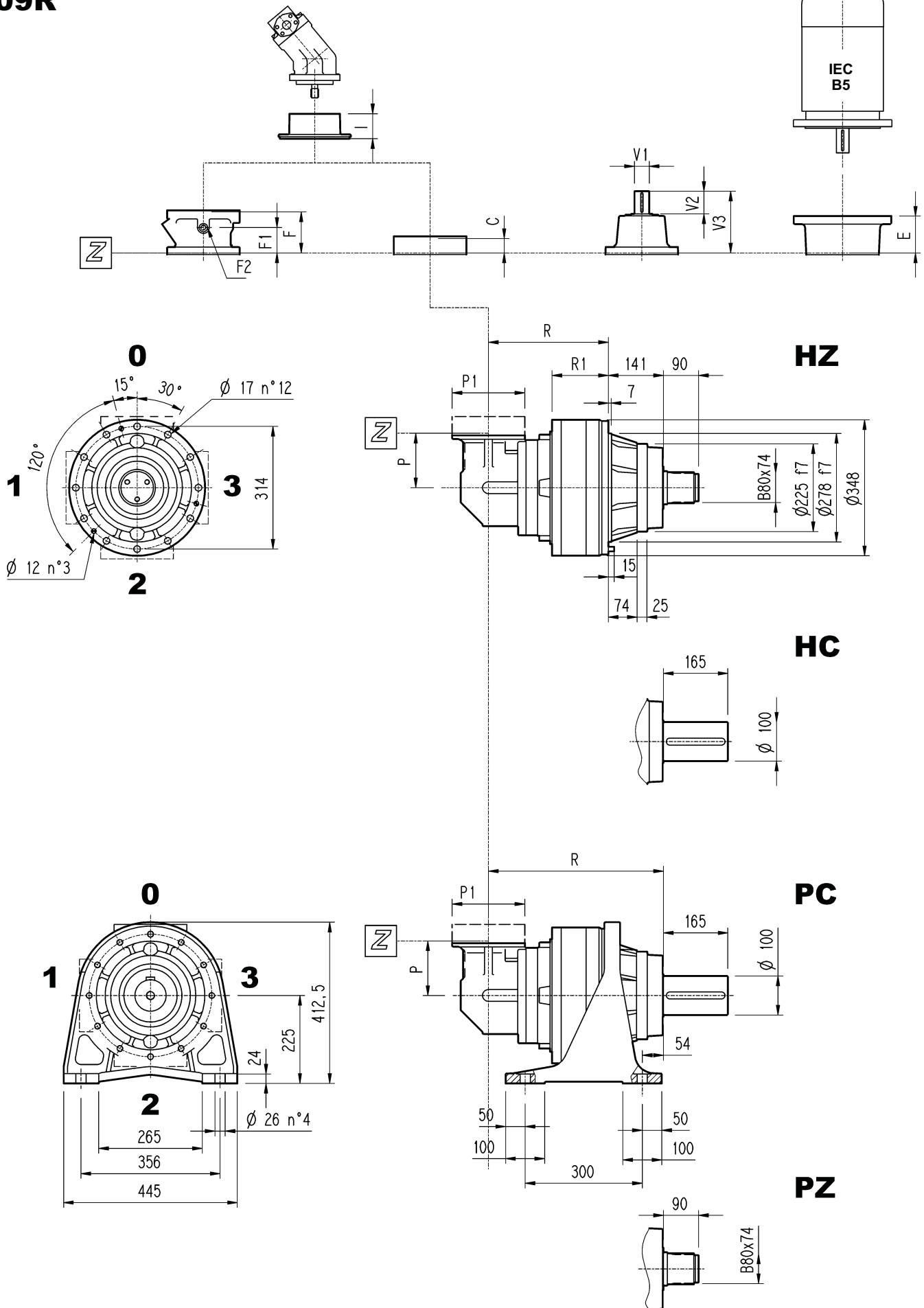


VERSIONE FP FP VERSION VERSION FP VERSION FP	COPPIA MAX. TRASMISSIBILE MAX. TRANSMISSIBLE TORQUE MAX. ÜBERTR. MOMENT COUPLE MAX. TRANSMISSIBLE	<b>25 000 Nm</b>
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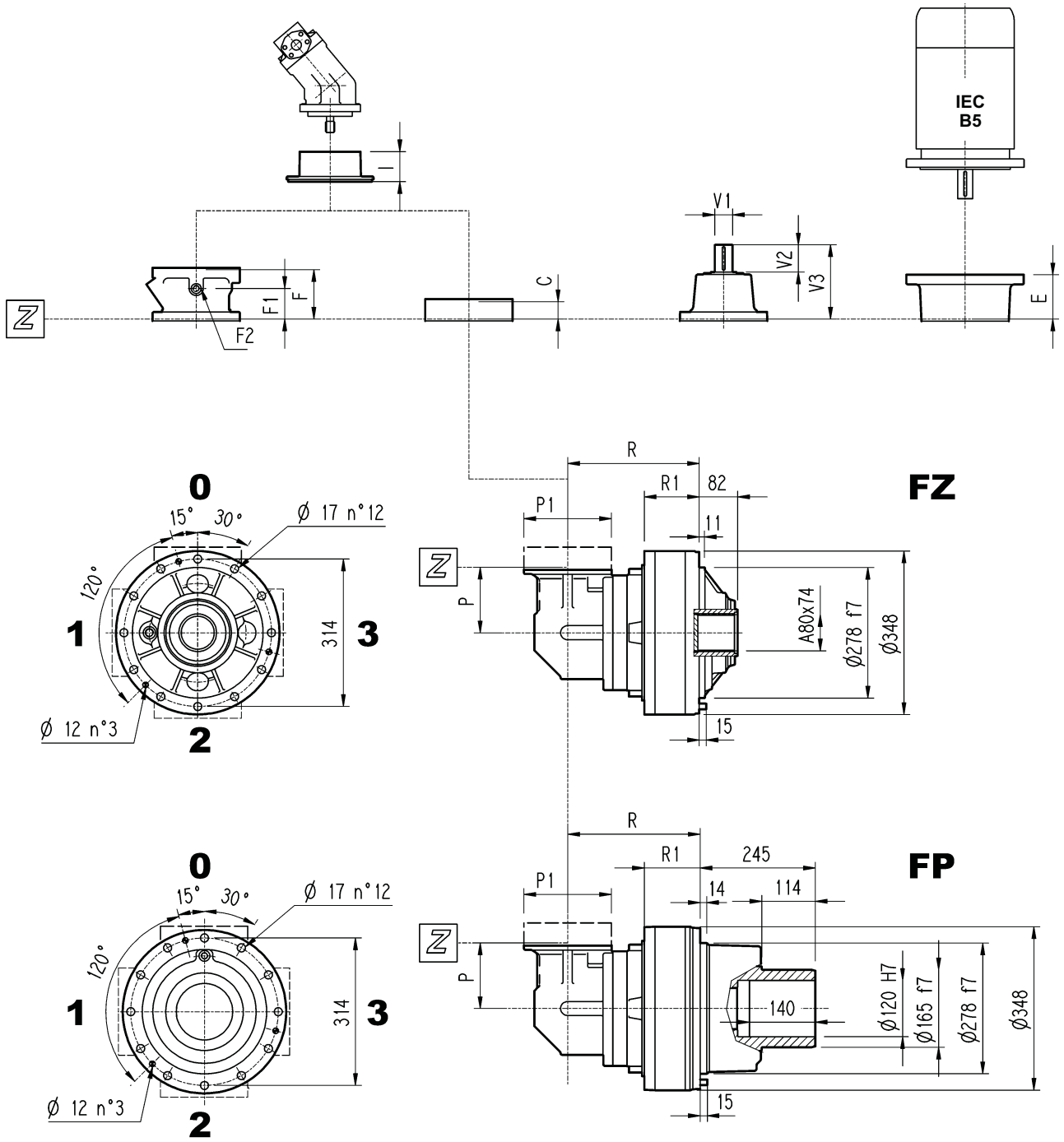
	L				Kg				C	Entrata Input Antrieb Entrée	I	Tipo Type Typ Type				Entrata Input Antrieb Entrée	Kg
	HZ HC	PC PZ	FZ	FP	HZ HC	PC PZ	FZ	FP				F	F1	F2			
<b>309 L1</b>	126	267	99	101	115	130	95	100	51	B	191	201	153	1/4 G	6	B	28
<b>309 L2</b>	215	356	188	190	127	142	107	112	37	A		145	95	1/4 G	5	A	16
<b>309 L3</b>	280	421	253	255	134	149	114	119	37	A		105	65	1/4 G	4	A	10
<b>309 L4</b>	333	474	306	308	138	153	118	123	37	A		105	65	1/4 G	4	A	10

	V1	V2	V3	Kg	V1	V2	V3	Kg	E										
									IEC 71	IEC 80	IEC 90	IEC 100	IEC 112	IEC 132	IEC 160	IEC 180	IEC 200	IEC 225	IEC 250
<b>309 L1</b>	80	130	315	35	60	105	313	28								195	186	216	215
<b>309 L2</b>	48	82	239	15										114	144	144	174		
<b>309 L3</b>	24	36	137.5	6	38	58	158	7	65	84	84	94	94	114	144				
<b>309 L4</b>	24	36	137.5	6	38	58	158	7	65	84	84	94	94	114	144				

**309R**



**309R**

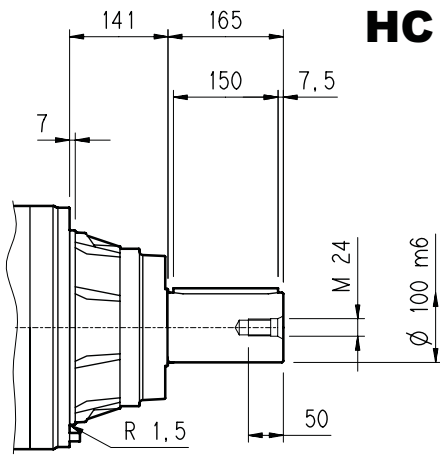


VERSIONE FP FP VERSION VERSION FP VERSION FP	COPPIA MAX. TRASMISSIBILE MAX. TRANSMISSIBLE TORQUE MAX. ÜBERTR. MOMENT COUPLE MAX. TRASMISSIBILE	<b>25 000 Nm</b>
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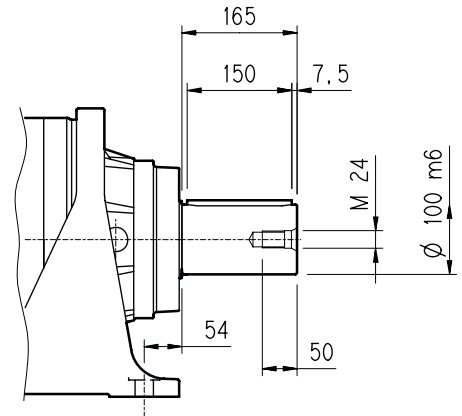
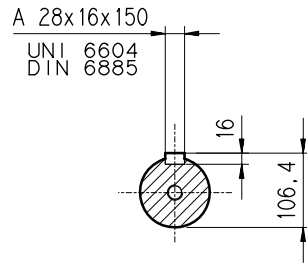
	R				R1			P	P1	Kg				C	Entrat a Input Antrieb Entrée	I	F	F1	F2	Tipo Type Typ Type	Entrat a Input Antrieb Entrée	Kg
	HZ HC	PC PZ	FZ	FP	HZ HC	FZ	FP			HZ HC	PC PZ	FZ	FP									
<b>309 R2</b>	245	386	218	220	168	141	143	225	245	165	180	145	150	37	A	191	145	95	1/4 G	5	A	16
<b>309 R3</b>	307	448	280	282	144	117	119	140	186	147	162	127	132	37	A	105	65	1/4 G	4	A	10	
<b>309 R4</b>	372	513	345	347	144	117	119	122	186	148	163	128	133	37	A	105	65	1/4 G	4	A	10	

	V1	V2	V3	Kg	V1	V2	V3	Kg	E								
									IEC 71	IEC 80	IEC 90	IEC 100	IEC 112	IEC 132	IEC 160	IEC 180	IEC 200
<b>309 R2</b>	48	82	239	15										114	144	144	174
<b>309 R3</b>	24	36	137.5	6	38	58	158	7	65	84	84	94	94	114	144		
<b>309 R4</b>	24	36	137.5	6	38	58	158	7	65	84	84	94	94	114	144		

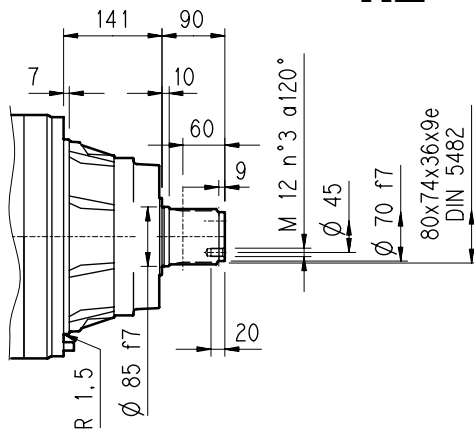
**309L - 309R**



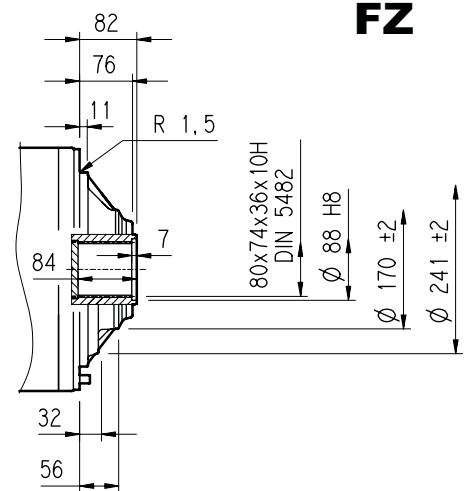
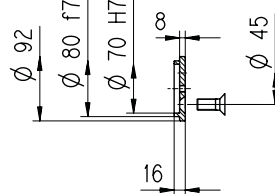
**HC**



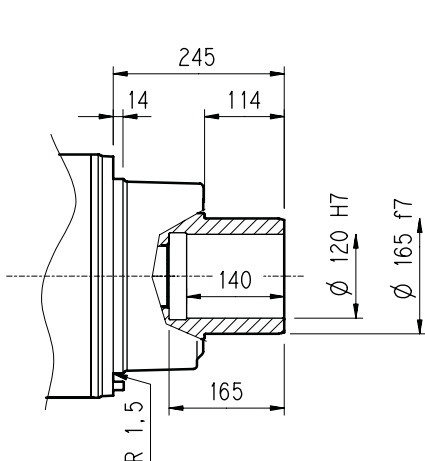
**PC**



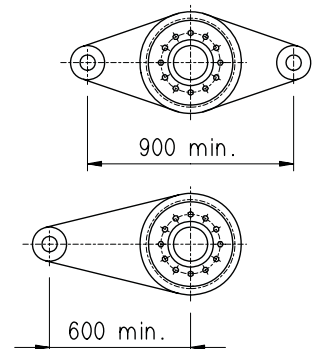
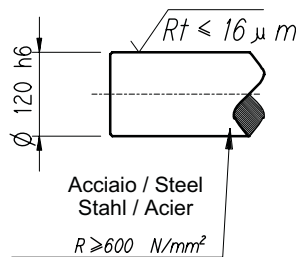
**HZ**



**FZ**



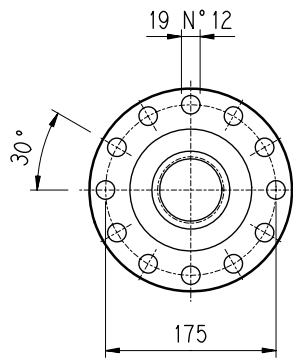
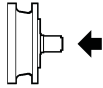
**FP**



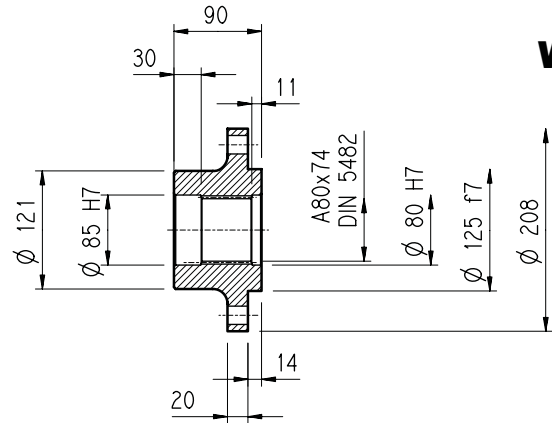
VERSIONE FP	COPPIA MAX. TRASMISSIBILE	<b>25 000 Nm</b>
FP VERSION	MAX. TRANSMISSIBLE TORQUE	
VERSION FP	MAX. ÜBERTR. MOMENT	
VERSION FP	COUPLE MAX. TRANSMISSIBLE	

Flangia / Flange  
Flansch / Brides

**309L - 309R**

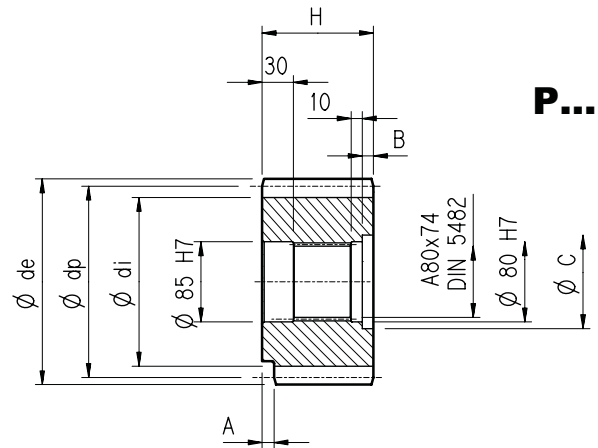
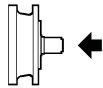


Materiale : Acciaio C40  
Material : Steel C40  
Material : Stahl C40  
Màterial : Acier C40



**WOA**

Pignoni per rotazione / Output pinions  
Ritzel / Pignons

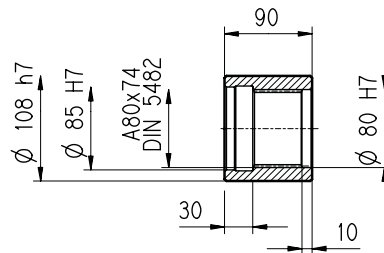
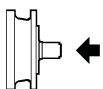


**P...**

	m	z	x	dp	di	de	H	A	B	C	★
<b>PFG</b>	8	16	0.500	128	117	149.5	90	0	0	0	■
<b>PHC</b>	10	12	0.450	120	104	145	90	0	0	0	■
<b>PHE</b>	10	14	0.320	140	121	162.5	116	13	26	95	■
<b>PHF</b>	10	15	0.150	150	130	171.5	107	20	17	100	■
<b>PHG</b>	10	16	0.500	160	145	186	90	0	0	0	□
<b>PHH1</b>	10	17	0	170	145	190	90	0	0	0	□
<b>PHH2</b>	10	17	0.500	170	154	198	90	0	0	0	□
<b>PLD</b>	12	13	0.500	156	138	192	102	0	12	95	■
<b>PLE</b>	12	14	0.500	168	150	199.2	90	0	0	0	■
<b>PLI</b>	12	18	0.500	216	198	249.6	107	7	17	95	■
<b>PLT</b>	12	26	0	312	282	336	90	10	0	0	□

★	Materiale/Material/Material/Màterial
■	Acciaio 39NiCrMo3 Bonificato Steel 39NiCrMo3 hardened and tempered Vergüteter Stahl 39NiCrMo3 Acier bonifié 39NiCrMo3
□	Acciaio 18NiCrMo5 Cementato e temprato Steel 18NiCrMo5 Case hardened Einsatzstahl 18NiCrMo5 Einsatzgehärtet Acier cementé et tempré 18NiCrMo5

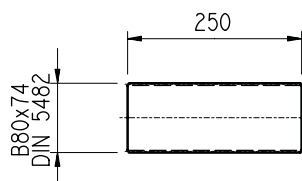
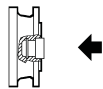
Manicotti lisci / Sleeve couplings  
Naben / Manchons lisses a cannelure interieure



**MOA**

Materiale : Acciaio 16CrNi4  
Material : Steel 16CrNi4  
Material : Stahl 16CrNi4  
Màterial : Acier 16CrNi4

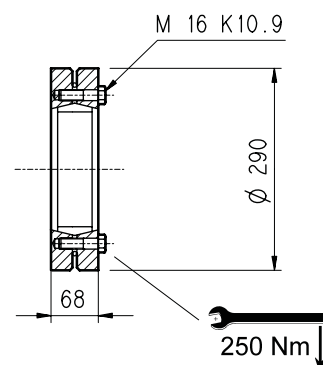
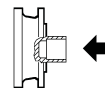
Barre scanalate / Splined bars  
Vielkeilwellen / Barre cannelée



**B0A**

Mat. acciaio 18NiCrMo5 UNI 5331 da cementare e temprare 50-55 HRC  
Case hardening steel 18NiCrMo5 UNI 5331  
must be case hardened 50-55 HRC  
Material: Einsatzstahl 18NiCrMo5 UNI 5331  
muss einsatzgehärtet werden 50-55 HRC  
Acier 18 NiCrMo5 UNI 5331 doit être cémenté trempé 50-55 HRC

Giunto ad attrito / Shrink disc  
Schrumpfscheibe / Frette de serrage

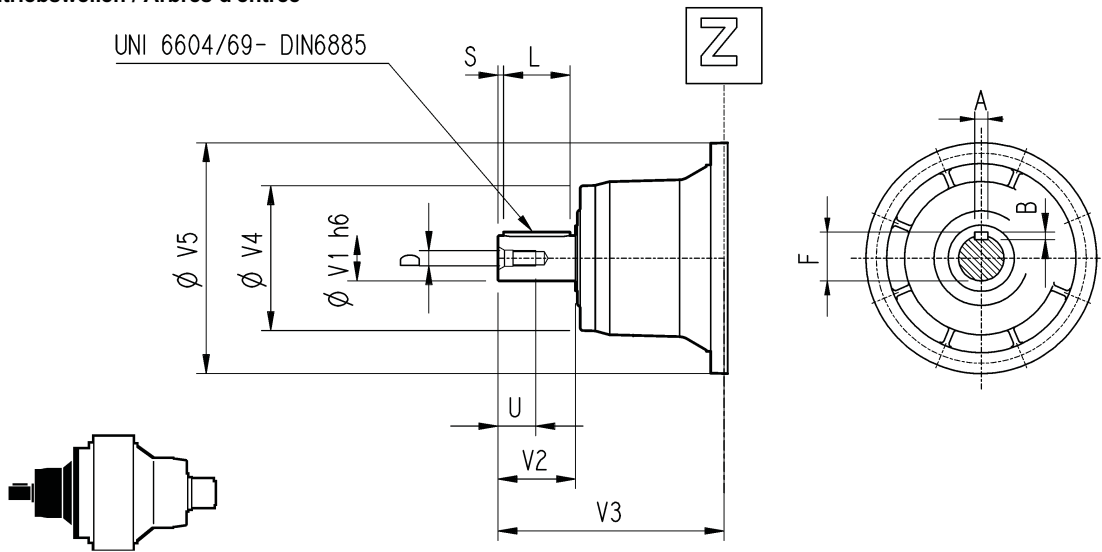


**G0A**



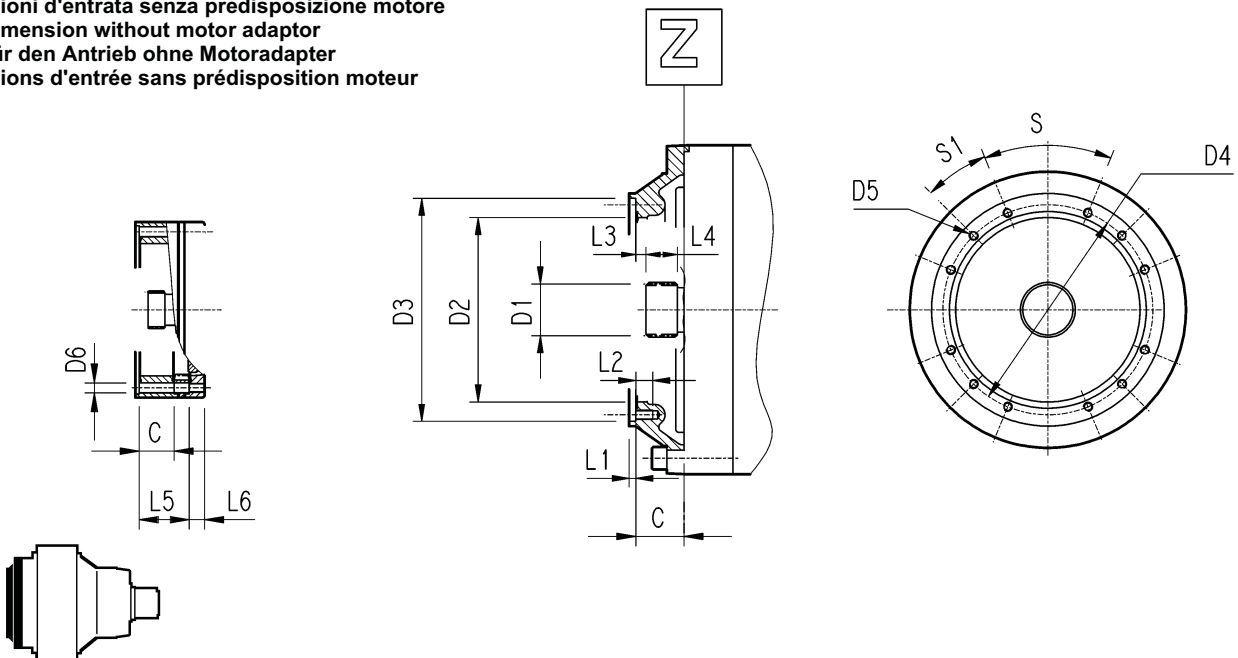
# 309L - 309R

Alberi veloci / Input shaft  
Antriebswellen / Arbres d'entrée



	CODE	V1	V2	V3	V4	V5	A	B	F	L	S	D	U
309 L1	V07B	80	130	315	200	345	22	14	85	110	10	M16	36
	V07A	60	105	313	155	345	18	11	64	90	7.5	M16	36
309 L2	V05B	48	82	239	155	245	14	9	51.5	70	6	M16	36
	V01A	24	36	137.5	120	186	8	7	27	30	3	M8	19
309 L3	V01B	38	58	158	120	186	10	8	41	50	4	M12	28
	V01A	24	36	137.5	120	186	8	7	27	30	3	M8	19
309 L4	V01B	38	58	158	120	186	10	8	41	50	4	M12	28
	V05B	48	82	239	155	245	14	9	51.5	70	6	M16	36
309 R2	V01A	24	36	137.5	120	186	8	7	27	30	3	M8	19
	V01B	38	58	158	120	186	10	8	41	50	4	M12	28

Dimensioni d'entrata senza predisposizione motore  
Input dimension without motor adaptor  
Maße für den Antrieb ohne Motoradapter  
Dimensions d'entrée sans prédisposition moteur



	C	D1	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6	S	S1	Entrata Input Antrieb Entrée
309 L1	51	58x53 DIN 5482	195	236 H7	222	M10 n°12	/	4	18	11	22	/	/	45°	22.5°	B
309 L2	37	40x36 DIN 5482	140	178 H7	165	M10 n°8	0	4	18	9	18	0	0	45°	45°	A
309 L3	37	40x36 DIN 5482	140	178 H7	165	M10 n°8	11	4	0	9	18	65	18	45°	45°	A
309 L4	37	40x36 DIN 5482	140	178 H7	165	M10 n°8	11	4	0	9	18	118	18	45°	45°	A
309 R2	37	40x36 DIN 5482	140	178 H7	165	M10 n°8	11	4	18	9	18	0	0	45°	45°	A
309 R3-R4	37	40x36 DIN 5482	140	178 H7	165	M10 n°8	11	4	/	9	18	37	18	45°	45°	A

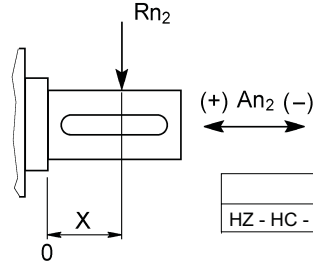
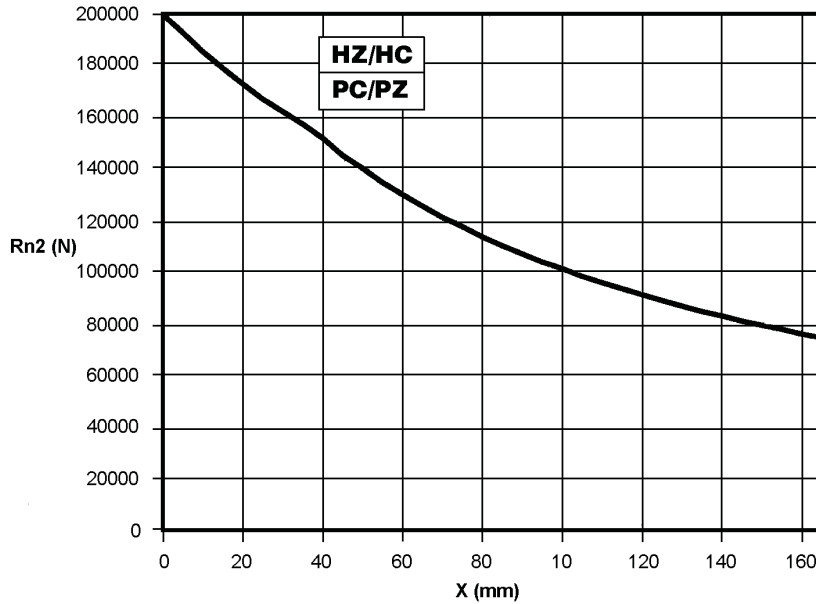
### 309L - 309R

Carichi radiali ed assiali ammissibili sull'albero lento per un valore di  $Fh_2 : n_2 \cdot h = 10\ 000$

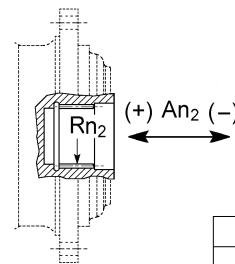
Permissible radial and axial loads on output shaft with  $Fh_2 : n_2 \cdot h = 10\ 000$

An der Ausgangswelle zulässige Radiallasten und Axialkräfte für einen Wert von  $Fh_2 : n_2 \cdot h = 10\ 000$

Charges radiales et axiales admissibles sur l'arbre lent pour une valeur de  $Fh_2 : n_2 \cdot h = 10\ 000$



	An <sub>2</sub> (+)	An <sub>2</sub> (-)
HZ - HC - PC - PZ	160 000	80 000



	Rn <sub>2</sub>	An <sub>2</sub> (+/-)
FZ	36 000	37 000

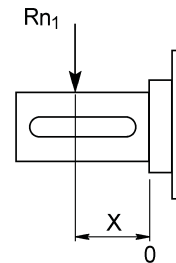
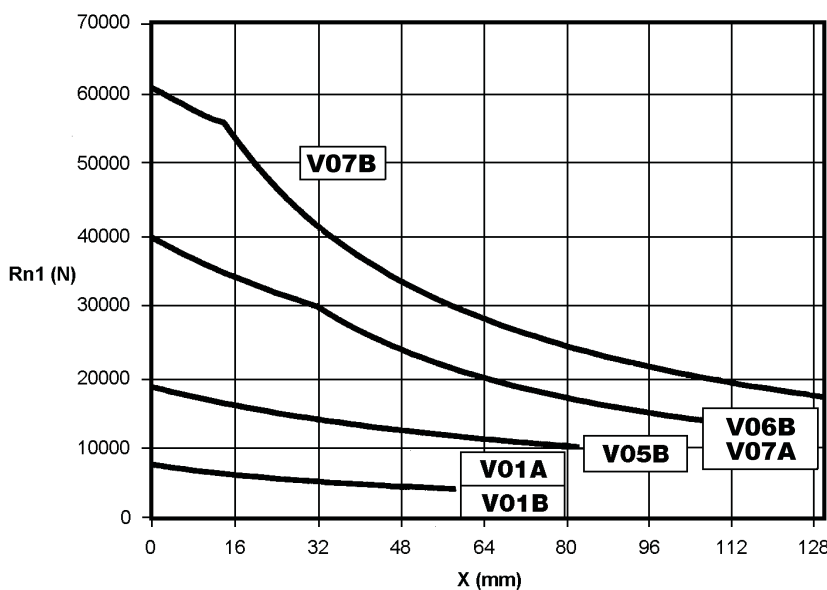
Fattore $fh_2$ correttivo per carichi sugli alberi Load corrective factor $fh_2$ on shafts Korrektionsfaktor $fh_2$ für wellenbelastungen Facteur de correction $fh_2$ pour charges sur les arbres	$fh_2$	$Fh_2 = n_2 \cdot h$	10 000	25 000	50 000	100 000	500 000	1 000 000
		FZ	1	0.74	0.58	0.46	0.27	0.21
HZ - HC - PC - PZ	1	0.76	0.61	0.50	0.31	0.25		

Carichi radiali ammissibili sull'albero veloce per un valore di  $Fh_1 : n_1 \cdot h = 250\ 000$

Permissible radial loads on input shaft with  $Fh_1 : n_1 \cdot h = 250\ 000$

An der Antriebswelle zulässige Radiallasten für einen Wert von  $Fh_1 : n_1 \cdot h = 250\ 000$

Charges radiales admises sur l'arbre d'entrée pour une valeur de  $Fh_1 : n_1 \cdot h = 250\ 000$



Fattore $fh_1$ correttivo per carichi sugli alberi Load corrective factor $fh_1$ on shafts Korrektionsfaktor $fh_1$ für wellenbelastungen Facteur de correction $fh_1$ pour charges sur les arbres	$fh_1$	$Fh_1 = n_1 \cdot h$	250 000	500 000	1 000 000	2 000 000	5 000 000	10 000 000
		1	0.79	0.63	0.50	0.37	0.29	