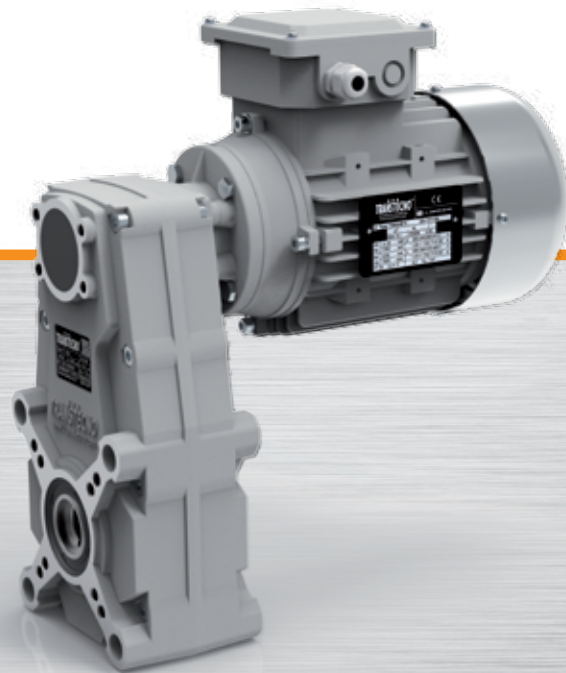
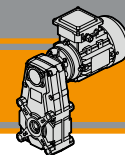




Motoriduttori pendolari  
**Helical parallel gearmotors**



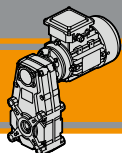




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## Caratteristiche tecniche

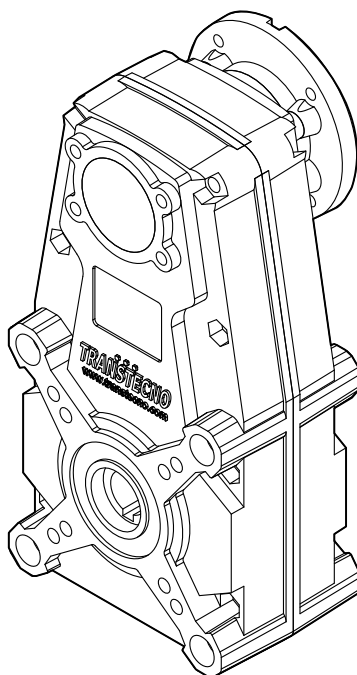
## Technical features

I motoriduttori pendolari della serie FT hanno le seguenti caratteristiche principali:

- Carcassa in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico.
- Ingranaggi cilindrici a denti elicoidali, induriti e rettificati.



FT helical parallel gearmotors range has the following main features:

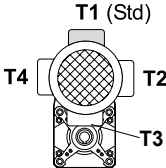
- Die-cast aluminium housings
- Permanent synthetic oil long-life lubrication.
- Ground-hardened helical gears.

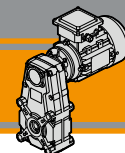


## Designazione

## Classification

RIDUTTORE / GEARBOX						
FT	146	U	60.63	O20	56	B5
Tipo Type	Grandezza Size	Versione Version	Rapporto Ratio	Albero cavo uscita Hollow output shaft	IEC 	Forma costruttiva Version
	105/3 105/4 146 196	U...	vedi tabelle see tables	vedi tabelle see tables	56 63 71 80 90	B5 B14

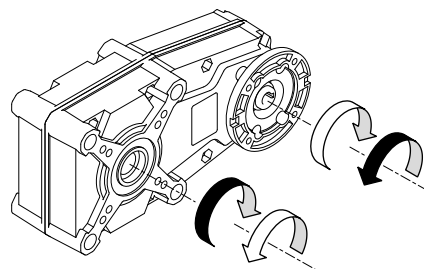
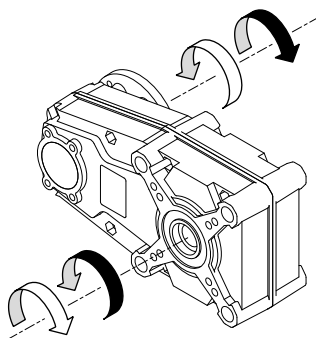
MOTORE / MOTOR						
0.09kW	4p	3ph	230/400V	50Hz	T1	
Potenza Power	Poli Poles	Fasi Phases	Tensione Voltage	Frequenza Frequency	Pos. morsetteria Terminal box pos.	
vedi tabelle see tables	2p 4p 6p 8p	1ph 3ph	230V 230/400V	50Hz 60Hz		



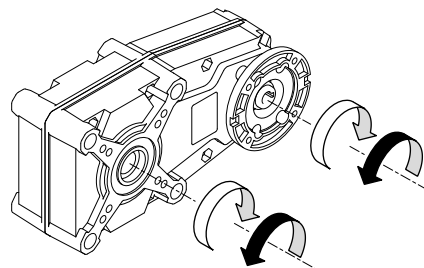
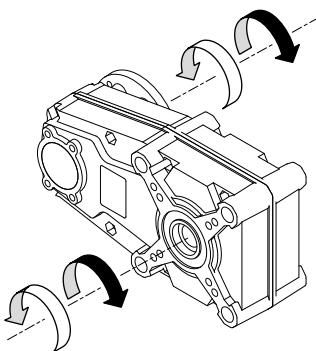
Sensi di rotazione

Direction of rotation

FT105/3  
FT146  
FT196



FT105/4



Simbologia

Symbols

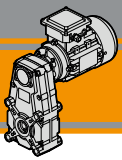
$n_1$	[min <sup>-1</sup> ]	Velocità in ingresso / <i>Input speed</i>
$n_2$	[min <sup>-1</sup> ]	Velocità in uscita / <i>Output speed</i>
$i$		Rapporto di riduzione / <i>Ratio</i>
$P_1$	[kW]	Potenza in entrata / <i>Input power</i>
$M_2$	[Nm]	Coppia nominale in uscita in funzione di $P_1$ / <i>Output torque referred to <math>P_1</math></i>
$P_{n1}$	[kW]	Potenza nominale in entrata / <i>Nominal input power</i>
$M_{n2}$	[Nm]	Coppia nominale in uscita in funzione di $P_{n1}$ / <i>Nominal output torque referred to <math>P_{n1}</math></i>
$sf$		Fattore di servizio / <i>Service factor</i>
$R_2$	[N]	Carico radiale ammissibile in uscita / <i>Permitted output radial load</i>
$A_2$	[N]	Carico assiale ammissibile in uscita / <i>Permitted output axial load</i>

Lubrificazione

Lubrication

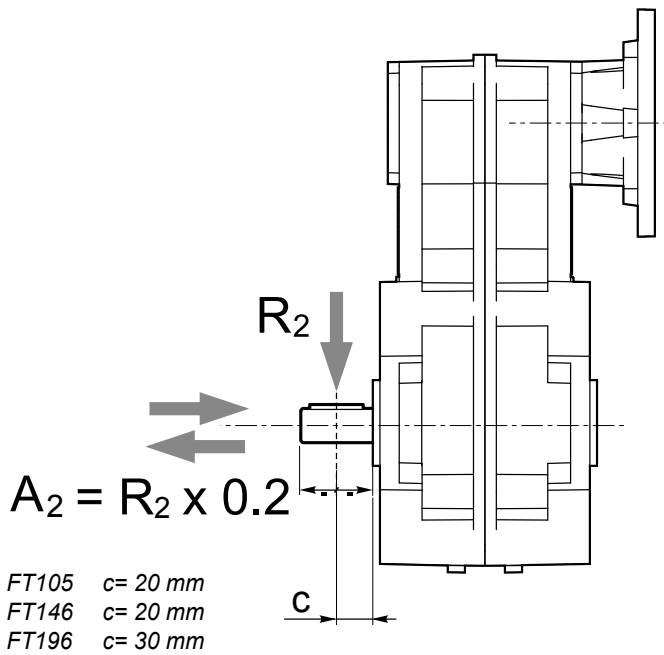
Tutti i motoriduttori sono forniti completi di lubrificante sintetico viscosità 320, pertanto possono essere installati in qualunque posizione di montaggio e non necessitano di manutenzione.

*Permanent synthetic oil long-life lubrication ( viscosity grade 320) makes it possible to use the gearmotors in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*



**Carichi radiali**

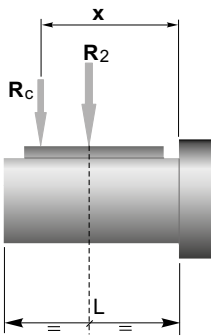
**Radial loads**



$n_2$ [min <sup>-1</sup> ]	$R_2$ [N]		
	FT105	FT146	FT196
70	1500	2500	3500
40	1700	2700	4000
30	1850	2850	4600
20	2000	3000	5500
10	2000	3000	7000
5	2000	3000	7000

Quando il carico radiale risultante non è applicato sulla mezza-  
ria dell'albero occorre calcolare quello effettivo con la seguente  
formula:

When the resulting radial load is not applied on the centre line  
of the shaft it is necessary to calculate the effective load with the  
following formula:



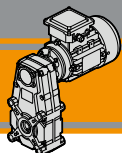
	FT105	FT146	FT196
<b>a</b>	82	82,5	132
<b>b</b>	62	62,5	102
<b>R<sub>2MAX</sub></b>	2000	3000	7000

$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

$$R \leq R_c$$





*a, b = valori riportati nella tabella*  
*a, b = values given in the table*





## Dati tecnici

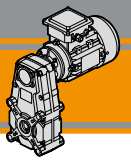
## Technical data

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	sf	i			P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	sf	i							
<b>0.09</b>							<b>0.12</b>											
56B4 (1400 min <sup>-1</sup> )	68	12	3.4	20.57	FT105/3	B14	63A4 (1400 min <sup>-1</sup> )	75	14	5.6	18.75	FT146	B5/B14					
	42	19	2.6	33.32			B14		53	20	4.0			26.17	B5/B14			
	32	26	2.5	44.36			B14		50	22	3.7			28.26	B5/B14			
	26	32	2.1	54.87			B14		40	27	3.7			35.07	B5/B14			
	20	41	1.6	71.84			B14		35	30	3.3			39.44	B5/B14			
	18	44	1.5	77.07			B14		30	36	2.8			46.44	B5/B14			
	16	51	1.3	88.87			B14		26	41	2.5			52.86	B5/B14			
	11	72	0.90	124.81			B14		23	47	2.4			60.63	B5/B14			
	7.7	105	0.62	181.35			B14		20	54	2.0			70.00	B5/B14			
	6.2	110	0.59	224.32			B14		17	65	1.7			84.63	B5/B14			
	4.4	110	0.59	315.05	B14		15	74	1.5	95.61	B5/B14							
							12	87	1.3	113.40	B5/B14							
	3.8	120	0.54	368.19	FT105/4	B14	10	103	1.1	133.45	B5/B14							
	2.6	120	0.54	534.98			B14		9.3	116	0.95	150.18	B5/B14					
	2.1	120	0.54	661.76			B14		8.7	123	0.97	160.43	B5/B14					
	1.5	120	0.54	929.40			B14		7.8	138	0.87	178.83	B5/B14					
							6.3	172	0.70	223.92	B5/B14							
	75	11	7.4	18.75	FT146	B5/B14	<b>0.18</b>											
	53	15	5.3	26.17			B5/B14		63B4 (1400 min <sup>-1</sup> )	75	22	3.7	18.75	FT146	B5/B14			
	50	16	4.9	28.26			B5/B14			53	30	2.6	26.17			B5/B14		
	40	20	4.9	35.07			B5/B14			50	33	2.5	28.26			B5/B14		
	35	23	4.4	39.44			B5/B14			40	40	2.5	35.07			B5/B14		
	30	27	3.7	46.44			B5/B14			35	46	2.2	39.44			B5/B14		
	27	31	3.3	52.86			B5/B14			30	54	1.9	46.44			B5/B14		
	23	35	3.1	60.63			B5/B14			26	61	1.6	52.86			B5/B14		
	20	40	2.7	70.00			B5/B14			23	70	1.6	60.63			B5/B14		
	17	49	2.3	84.63			B5/B14			20	81	1.4	70.00			B5/B14		
	15	55	2.0	95.61			B5/B14			17	98	1.1	84.63			B5/B14		
	12	65	1.7	113.40			B5/B14			15	110	1.0	95.61			B5/B14		
	10	77	1.4	133.45			B5/B14			12	131	0.84	113.40			B5/B14		
	9.3	87	1.3	150.18			B5/B14			10	154	0.72	133.45			B5/B14		
	8.7	93	1.3	160.43			B5/B14			<b>0.22</b>								
	7.8	103	1.2	178.83			B5/B14			63C4 (1400 min <sup>-1</sup> )	75	26	3.0			18.75	FT146	B5/B14
	6.3	129	0.94	223.92			B5/B14				53	37	2.2			26.17		
	5.9	137	0.88	236.83	B5/B14				50	40	2.0	28.26	B5/B14					
	4.7	170	0.70	300.07	B5/B14				40	49	2.0	35.07	B5/B14					
	3.5	170	0.70	397.38	B5/B14				35	56	1.8	39.44	B5/B14					
									30	66	1.5	46.44	B5/B14					
									26	75	1.3	52.86	B5/B14					
									23	86	1.3	60.63	B5/B14					
									20	99	1.1	70.00	B5/B14					
									17	119	0.93	84.63	B5/B14					
									15	135	0.82	95.61	B5/B14					

N.B.  
Verificare sempre che la coppia M2 utilizzata non ecceda il valore indicato nelle caselle in grigio



N.B.  
Please check that the output torque M2 does not exceed the value in the grey areas











Dati tecnici

Technical data

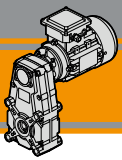
P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	sf	i				
<b>0.25</b>								
71A4 (1400 min <sup>-1</sup> )	75	30	2.7	18.75	FT146	B5/B14		
	53	42	1.9	26.17		B5/B14		
	50	45	1.8	28.26		B5/B14		
	40	56	1.8	35.07		B5/B14		
	35	63	1.6	39.44		B5/B14		
	30	74	1.3	46.44		B5/B14		
	26	85	1.2	52.86		B5/B14		
	23	97	1.1	60.63		B5/B14		
	20	112	0.98	70.00		B5/B14		
	17	136	0.81	84.63		B5/B14		
	15	153	0.72	95.61		B5/B14		
	69	33	10.7	20.41		FT196	B5/B14	
		40	56	7.2			34.81	B5/B14
		33	68	6.6			42.61	B5/B14
24		95	5.3	59.36	B5/B14			
19		117	4.7	72.68	B5/B14			
15		149	3.7	92.82	B5/B14			
11		199	2.8	123.95	B5/B14			
8.9		253	2.2	158.02	B5/B14			
6.9		323	1.7	201.80	B5/B14			
5.2		432	1.3	269.47	B5/B14			

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	sf	i		
<b>0.75</b>						
80B4 (1400 min <sup>-1</sup> )	69	98	3.6	20.41	FT196	B5/B14
	40	167	2.4	34.81		B5/B14
	33	205	2.2	42.61		B5/B14
	24	285	1.8	59.36		B5/B14
	19	350	1.6	72.68		B5/B14
	15	446	1.2	92.82		B5/B14
	11	596	0.92	123.95		B5/B14
<b>1.1</b>						
90S4 (1400 min <sup>-1</sup> )	69	144	2.4	20.41	FT196	B5/B14
	40	246	1.6	34.81		B5/B14
	33	301	1.5	42.61		B5/B14
	24	419	1.2	59.36		B5/B14
	19	513	1.1	72.68		B5/B14
	15	655	0.84	92.82		B5/B14
<b>1.5</b>						
90L4 (1400 min <sup>-1</sup> )	69	196	1.8	20.41	FT196	B5/B14
	40	335	1.2	34.81		B5/B14
	33	410	1.1	42.61		B5/B14
	24	571	0.88	59.36		B5/B14
	19	699	0.79	72.68		B5/B14

P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	sf	i				
<b>0.37</b>								
71B4 (1400 min <sup>-1</sup> )	75	44	1.8	18.75	FT146	B5/B14		
	53	62	1.3	26.17		B5/B14		
	50	67	1.2	28.26		B5/B14		
	40	83	1.2	35.07		B5/B14		
	35	94	1.1	39.44		B5/B14		
	30	110	0.91	46.44		B5/B14		
	26	125	0.80	52.86		B5/B14		
	23	144	0.76	60.63		B5/B14		
	69	48	7.2	20.41		FT196	B5/B14	
		40	83	4.8			34.81	B5/B14
		33	101	4.5			42.61	B5/B14
		24	141	3.6			59.36	B5/B14
		19	172	3.2			72.68	B5/B14
		15	220	2.5			92.82	B5/B14
11		294	1.9	123.95	B5/B14			
8.9		375	1.5	158.02	B5/B14			
6.9		479	1.1	201.80	B5/B14			
5.2		639	0.86	269.47	B5/B14			

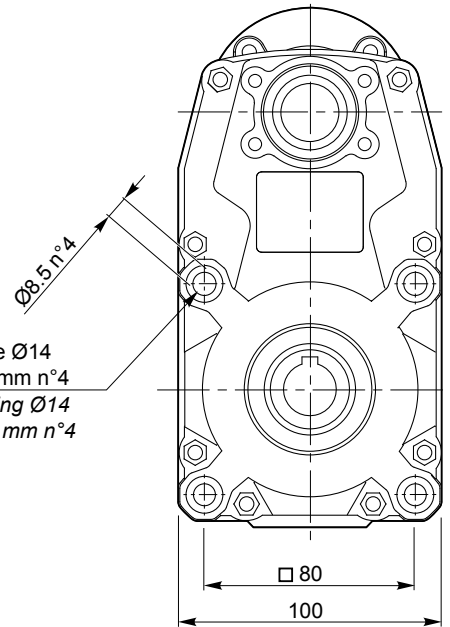
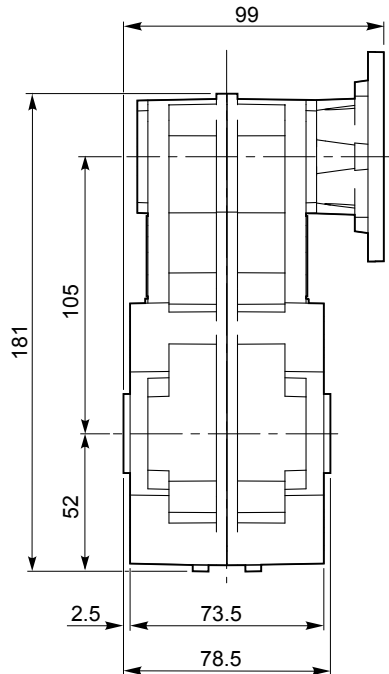
P <sub>1</sub> [kW]	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	sf	i		
<b>0.55</b>						
80A4 (1400 min <sup>-1</sup> )	69	72	4.9	20.41	FT196	B5/B14
	40	123	3.2	34.81		B5/B14
	33	150	3.0	42.61		B5/B14
	24	209	2.4	59.36		B5/B14
	19	255	2.1	72.68		B5/B14
	15	327	1.7	92.82		B5/B14
	11	437	1.3	123.95		B5/B14
	8.9	557	1.0	158.02		B5/B14
	6.9	712	0.77	201.80		B5/B14

FT



**FT 105**

**FT 105...U**



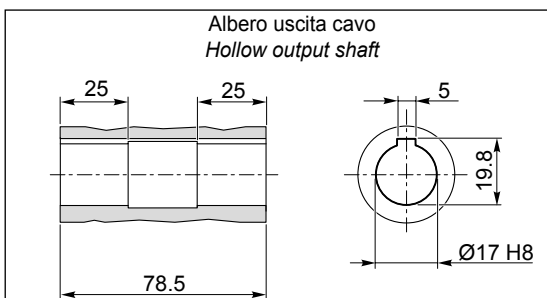
Kg 4.2

NOTA: Stessi fissaggi da entrambi i lati  
NOTE: Same fixing points in both sides

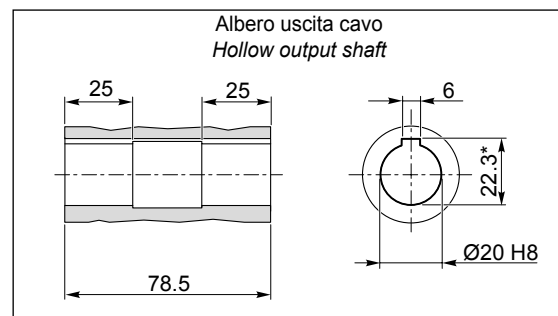
IEC Motori applicabili  
IEC Motor adapters



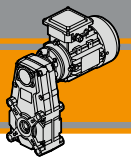
**O17**



**O20**

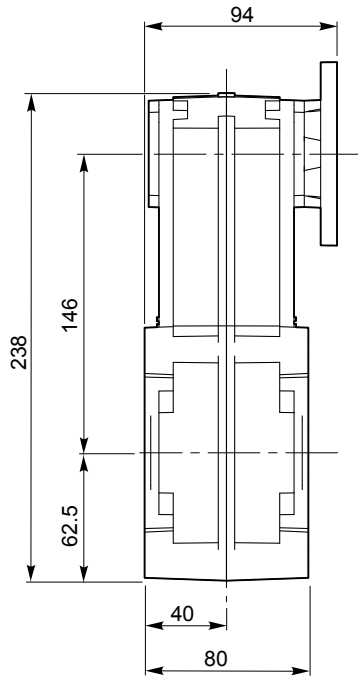


\*: Sede linguetta ribassata / Special keyway



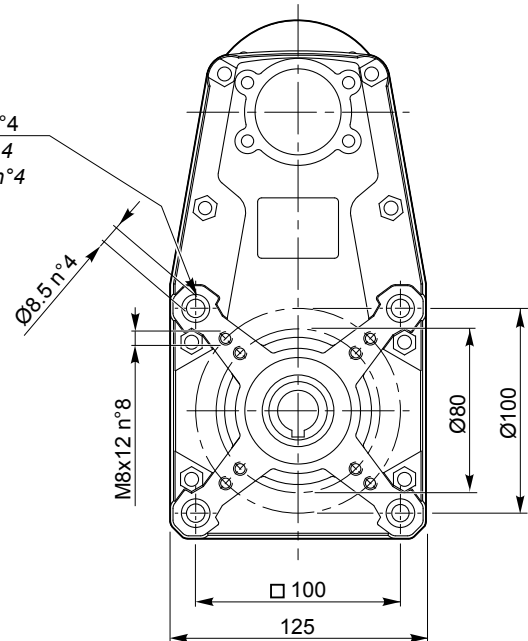
FT 146

FT 146 U



Lamature Ø14  
Prof. 9.5 mm n°4  
Spot-facing Ø14  
Deep 9.5 mm n°4

**Kg** 4.7

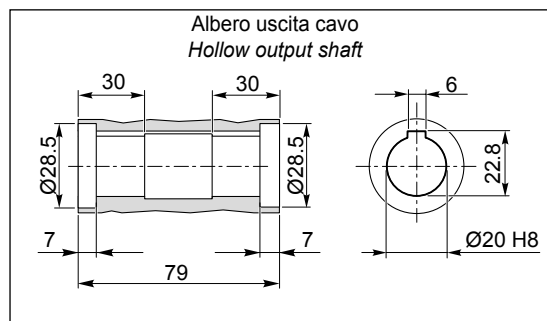


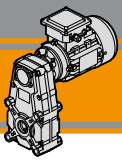
NOTA: Stessi fissaggi da entrambi i lati  
NOTE: Same fixing points in both sides

IEC Motori applicabili  
IEC Motor adapters



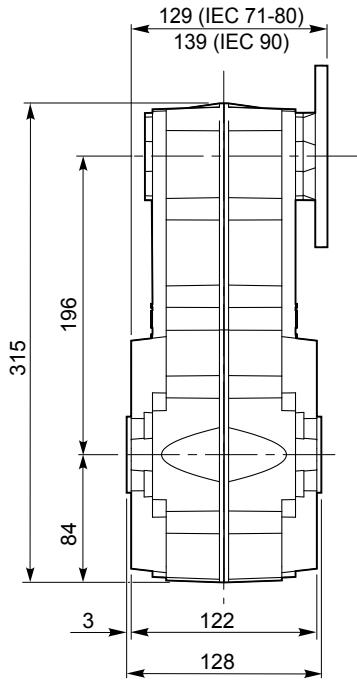
O20



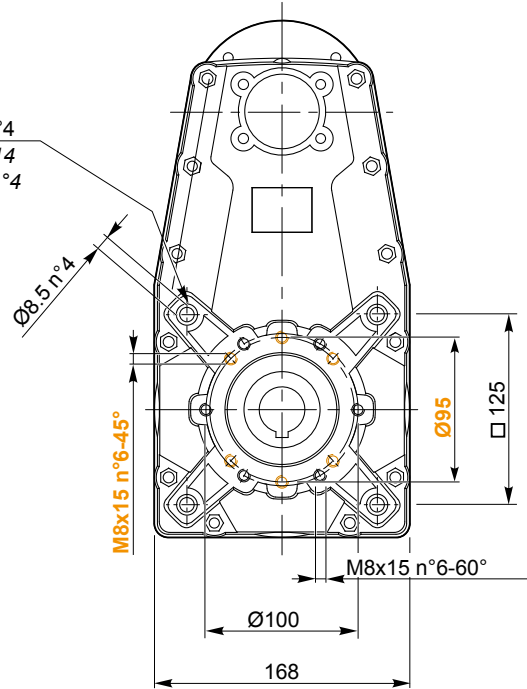


**FT 196**

**FT 196 U**

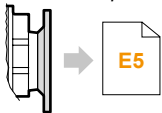


Lamature Ø14  
Prof. 11 mm n°4  
Spot-facing Ø14  
Deep 11 mm n°4



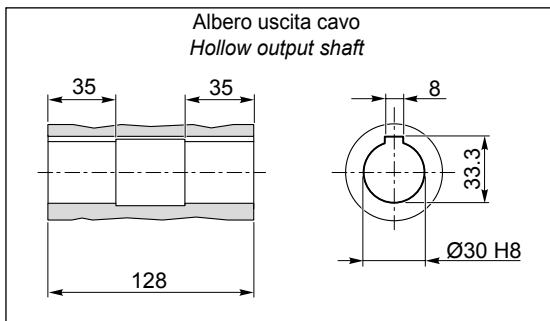
**Kg** 12.1

IEC Motori applicabili  
IEC Motor adapters

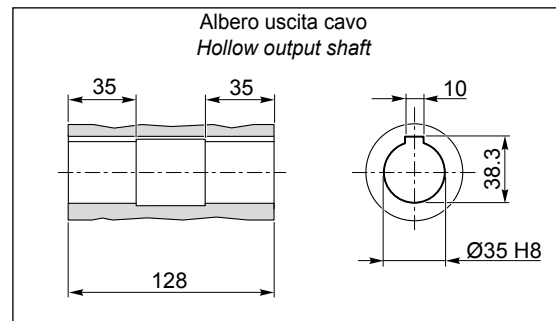


NOTA: Stessi fissaggi da entrambi i lati  
NOTE: Same fixing points in both sides

**O30**



**O35**





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