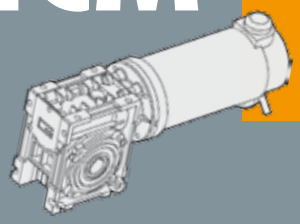
TRANSTECNO™

THE MODULAR GEARMOTOR

ECM



MOTORIDUTTORI C.C. A VITE SENZA FINE

PERMANENT MAGNETS D.C. WORMGEARMOTORS

TRANSTECNO • GENUINE • PRODUCTS

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Caratteristiche tecniche / *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie ECM sono:

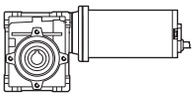
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenza motore disponibili da 30 a 800W S2
- Magneti in ferrite
- Carcasse dei riduttori in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico.

The main features of ECM D.C. gearmotors range are:

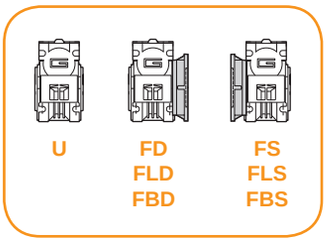
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 30 to 800W S2*
- *Ferrite magnets*
- *Die-cast aluminum housing*
- *Permanent synthetic oil long-life lubrication.*

Designazione / *Designation*

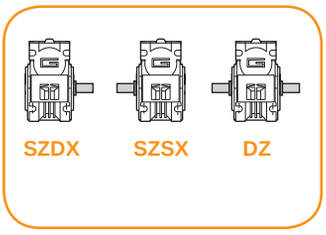
MOTORIDUTTORE / *GEARMOTOR*

ECM	070/026					U	10	SZDX	BRSX	90	240	VS
Tipo *Type*	Grandezza *Size*					Versione Riduttore *Gearbox Version*	Rapporto *Ratio*	Albero di uscita *Output shaft*	Braccio di reazione *Torque arm*	Angolo *Angle*	Versione Motore *Motor Version*	Opzioni *Options*
ECM 	070/026 070/030	100/026 100/030 100/040	180/026 180/030 180/040 180/050	350/030 350/040 350/050	600/040 600/050 600/063	U FD FS FLD FLS FBD FBS	Vedere tabella *See tables*	SZDX SZSX DZ	BRDX BRSX	0° 90° 180° 270°	120 240 24E	VS

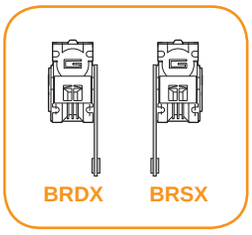
Versione Riduttore
Gearbox Version



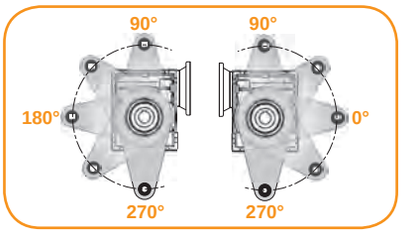
Albero di uscita
Output shaft



Braccio di reazione
Torque arm



Angolo
Angle



Simbologia / *Symbols*

n_1	[min^{-1}]	Velocità in ingresso / *Input speed*
n_2	[min^{-1}]	Velocità in uscita / *Output speed*
i		Rapporto di riduzione / *Ratio*
P_1	[kW]	Potenza in entrata / *Input power*
M_2	[Nm]	Coppia in uscita in funzione di P_1 / *Output torque referred to P_1*
sf		Fattore di servizio / *Service factor*

Rd	%	Rendimento dinamico / *Dynamic efficiency*
A_2	N]	Carico assiale ammissibile in uscita / *Permitted output axial load*
Rs	%	Rendimento statico / *Static efficiency*
R_2	[N]	Carico radiale ammissibile in uscita / *Permitted output radial load*
Z		Numero di principi della vite / *Worm starts*
β		Angolo d'elica / *Helix angle*

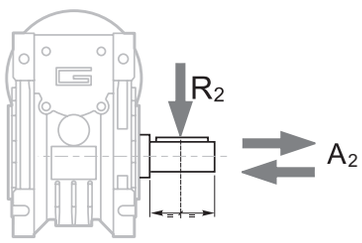
Lubrificazione — *Lubrication*

I riduttori a vite senza fine della serie CM sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

Permanent synthetic oil long-life lubrication allow to use CM wormgearbox range in all mounting position.

	Quantità di olio (litri) / ***Oil quantity*** *(liters)*						
	B3	**B8**	**B6**	**B7**	**V5**	**V6**	
CM026	0.02						Lubrificazione a vita *Life lubricated*
CM030	0.04						
CM040	0.08						
CM050	0.15						
CM063	0.30						

Carichi radiali — *Radial loads*

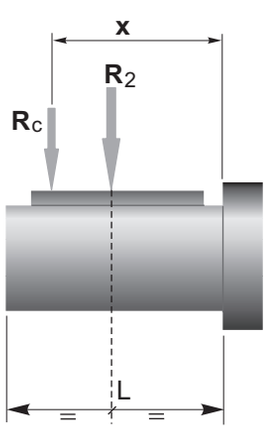


$A_2 = R_2 \times 0.2$

n_2 [min^{-1}]	R_2 [N]				
	CM026	**CM030**	**CM040**	**CM050**	**CM063**
187	400	674	1264	1770	2445
140	490	743	1392	1949	2692
93	580	851	1596	2234	3085
70	610	936	1754	2456	3392
56	610	1008	1890	2646	3654
47	610	1069	2004	2805	3874
35	610	1179	2210	3095	4273
28	610	1270	2381	3334	4603
23	610	1356	2542	3559	4915
18	610	1471	2759	3862	5334
14	610	1600	3000	4200	5800

Quando il carico radiale risultante non è applicato sulla mezzeria 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:



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

$$R \leq R_c$$

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

	CM				
	026	**030**	**040**	**050**	**063**
a	56	65	84	101	120
b	43	50	64	76	95
R_{2MAX}	610	1600	3000	4200	5800

Dati di dentatura — *Toothing data*

	Dati della coppia vite-corona Worm wheel data	Rapporto / *Ratio*											
		5	**7.5**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**80**	**100**
CM026	Z	6	4	3	2	2		1	1	1	1		
	β	34° 35'	24° 41'	19° 1'	12° 57 '	10° 30'		6° 33'	5° 17'	4° 26'	3°49'		
CM030	Z	6	4	3	2	2	2	1	1	1	1	1	1
	β	27° 4'	24° 28'	18° 50'	12° 49'	10° 23'	8° 43'	6° 29'	5° 14'	4° 23'	3° 46'	2° 57'	2° 25'
CM040	Z	6	4	3	2	2	2	1	1	1	1	1	1
	β	34° 19'	24° 28'	18° 50'	12° 49'	10° 23'	8° 43'	6° 29'	5° 14'	4° 23'	3°46'	2° 57'	2° 25'
CM050	Z		4	3	2	2	2	1	1	1	1	1	1
	β		23° 54'	18° 23'	12° 29'	10° 6'	8° 28'	6° 19'	5° 5'	4° 15'	3° 39'	2°51'	2° 20'
CM063	Z		4	3	2	2	2	1	1	1	1	1	1
	β		24° 31'	18° 53'	12° 50'	10° 24'	8° 44'	6° 30'	5° 14'	4° 23'	3° 47'	2° 57'	2° 25'

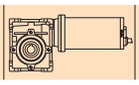
Rendimento — *Efficiency*

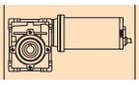
	n_1 [min^{-1}]	Rendimento Efficiency	Rapporto / *Ratio*											
			5	**7.5**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**80**	**100**
CM026	2800	Rd	89	87	85	83	80		73	68	64	60		
	1400		87	84	83	78	74		66	61	57	53		
	900		84	83	80	75	71		61	57	52	48		
		Rs	72	71	68	61	56		46	41	36	34		
CM030	2800	Rd	89	88	86	84	81	78	74	70	65	62	57	52
	1400		86	85	84	79	75	72	67	62	58	55	48	43
	900		84	83	81	75	71	68	62	58	53	49	43	39
		Rs	72	67	63	55	50	43	39	35	31	27	23	21
CM040	2800	Rd	90	89	87	84	83	80	77	73	69	66	60	56
	1400		88	86	84	81	78	74	70	65	60	58	52	46
	900		86	84	82	77	74	70	66	60	57	53	46	41
		Rs	74	71	67	60	55	51	45	40	36	32	28	24
CM050	2800	Rd		90	88	86	84	82	78	74	71	68	62	58
	1400			87	85	82	79	76	72	67	63	60	54	49
	900			85	84	79	75	72	68	62	59	55	48	43
		Rs		70	66	59	55	51	44	39	35	32	27	23
CM063	2800	Rd		90	88	86	84	83	79	76	73	70	65	60
	1400			88	86	84	81	78	75	70	66	63	57	52
	900			86	84	81	78	75	70	65	61	58	52	47
		Rs		71	67	60	55	51	45	40	36	33	28	24

Rendimento teorico del riduttore dopo il rodaggio
Theoretical efficiency of the gearbox after the first running period

Dati tecnici per servizio S2

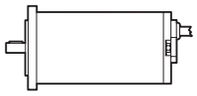
Technical data for S2 duty

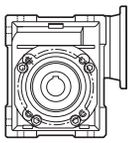
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
100						
(3000 min^{-1})	**600**	1.4	7.1	5	**ECM070/026**	120/240
	400	2.1	5.3	7.5		
	300	2.7	4.1	10		
	200	4.0	2.8	15		
	150	5.1	2.2	20		
	100	7.0	1.7	30		
	75	8.7	1.3	40		
	60	10	1.0	50		
	50	11	0.8	60		
	600	1.4	9.2	5	**ECM070/030**	120/240
	400	2.1	7.1	7.5		
	300	2.7	5.8	10		
	200	4.0	4.0	15		
	150	5.2	2.7	20		
	120	6.2	2.4	25		
	100	7.1	2.5	30		
	75	8.9	1.8	40		
	60	10	1.4	50		
	50	12	1.2	60		
	38	15	0.8	80		
	30	17	0.7	100		
140						
(3000 min^{-1})	**600**	2.0	5.0	5	**ECM100/026**	120/240/24E
	400	2.9	3.8	7.5		
	300	3.8	2.9	10		
	200	5.5	2.0	15		
	150	7.1	1.5	20		
	100	10	1.2	30		
	75	12	0.9	40		
	60	14	0.7	50		
	50	13	0.7	60		
	200	5.6	2.8	15	**ECM100/030**	120/240/24E
	150	7.2	1.9	20		
	120	8.7	1.7	25		
	100	10	1.8	30		
	75	12	1.3	40		
	60	14	1.0	50		
	50	17	0.8	60		
	38	20	0.6	80		
	30	16	0.7	100		
	100	10	3.7	30	**ECM100/040**	120/240/24E
	75	13	2.6	40		
	60	15	2.1	50		
	50	18	1.6	60		
	38	21	1.3	80		
	30	25	1.0	100		
250						
(3000 min^{-1})	**600**	3.5	2.8	5	**ECM180/026**	120/240
	400	5.2	2.1	7.5		
	300	6.8	1.6	10		
	200	10	1.1	15		
	150	13	0.9	20		
	100	17	0.7	30		
	75	16	0.7	40		
	60	14	0.7	50		
	50	13	0.7	60		
	600	3.5	3.7	5	**ECM180/030**	120/240/24E
	400	5.3	2.9	7.5		
	300	6.8	2.3	10		
	200	10	1.6	15		
	150	13	1.1	20		
	120	16	1.0	25		
	100	18	1.0	30		
	75	22	0.7	40		
	60	21	0.7	50		
	50	20	0.7	60		
	38	17	0.7	80		
	30	16	0.7	100		
	200	10	3.5	15	**ECM180/040**	120/240/24E
	150	13	2.3	20		
	120	16	1.8	25		

P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
250						
(3000 min^{-1})	**100**	18	2.1	30	**ECM180/040**	120/240/24E
	75	23	1.5	40		
	60	27	1.2	50		
	50	32	0.9	60		
	38	38	0.7	80		
	30	34	0.7	100		
	75	24	2.5	40	**ECM180/050**	120/240/24E
	60	28	2.0	50		
	50	32	1.6	60		
	38	39	1.2	80		
	30	46	0.9	100		
500						
(3000 min^{-1})	**600**	7.1	1.8	5	**ECM350/030**	120/240
	400	11	1.4	7.5		
	300	14	1.2	10		
	200	20	0.8	15		
	150	20	0.7	20		
	120	21	0.7	25		
	100	26	0.7	30		
	75	23	0.7	40		
	60	21	0.7	50		
	600	7.2	4.0	5	**ECM350/040**	120/240
	400	11	2.9	7.5		
	300	14	2.4	10		
	200	20	1.7	15		
	150	26	1.2	20		
	120	32	0.9	25		
	100	37	1.0	30		
	75	46	0.7	40		
	60	46	0.7	50		
	50	41	0.7	60		
	38	39	0.7	80		
	30	34	0.7	100		
	200	21	3.0	15	**ECM350/050**	120/240
	150	27	2.1	20		
	120	33	1.6	25		
	100	37	1.8	30		
	75	47	1.3	40		
	60	57	1.0	50		
	50	65	0.8	60		
	38	66	0.7	80		
	30	61	0.7	100		
800						
(3000 min^{-1})	**600**	11	2.5	5	**ECM600/040**	120/240
	400	17	1.8	7.5		
	300	22	1.5	10		
	200	32	1.1	15		
	150	42	0.7	20		
	120	40	0.7	25		
	100	54	0.7	30		
	75	49	0.7	40		
	400	17	3.3	7.5	**ECM600/050**	120/240
	300	22	2.7	10		
	200	33	1.9	15		
	150	43	1.3	20		
	120	52	1.0	25		
	100	60	1.1	30		
	75	75	0.8	40		
	60	81	0.7	50		
	50	74	0.7	60		
	38	66	0.7	80		
	200	33	3.5	15	**ECM600/063**	120/240
	150	43	2.4	20		
	120	53	1.8	25		
	100	60	2.1	30		
	75	77	1.4	40		
	60	93	1.1	50		
	50	107	0.9	60		
	38	132	0.7	80		
	30	114	0.7	100		

Motori applicabili

IEC Motor adapters



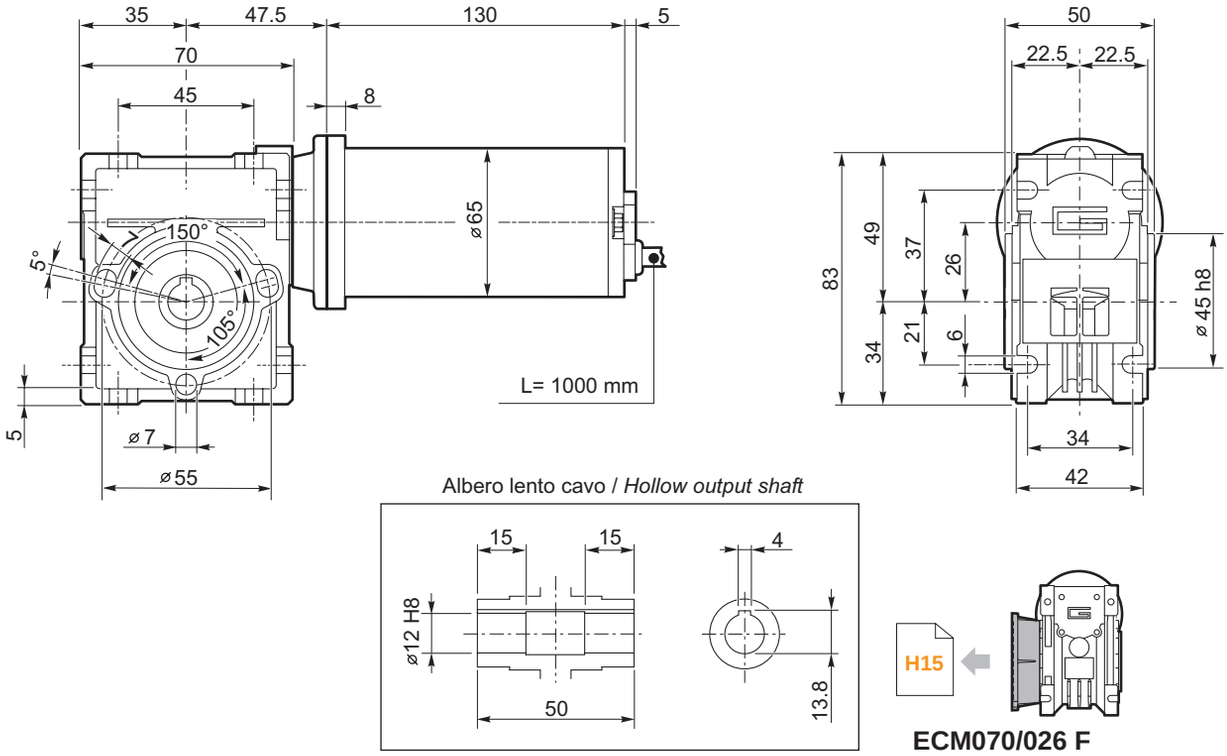


		EC						
		070.120 070.240	100.120 100.240	100.24E	180.120 180.240	180.24E	350.120 350.240	600.120 600.240
CM	026	5-60	5-60		5-60			
	030	5-100	5-100		5-100	5-50	5-50	
	040		5-100		5-100	5-100	5-100	5-40
	050				40-100	7.5-100	7.5-100	7.5-80
	063							7.5-100

5-100 Rapporti di riduzione i
Ratio i

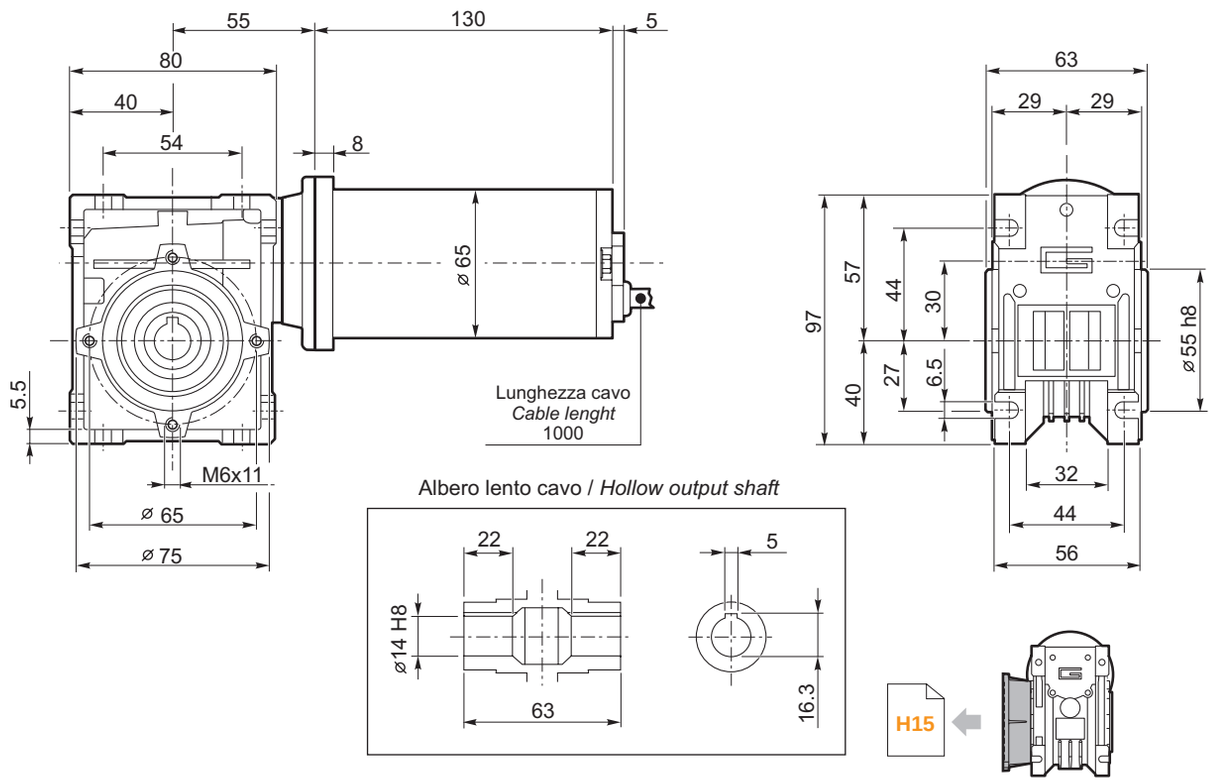
Dimensioni *Dimensions*

ECM070/026 U



ECM070/026 F

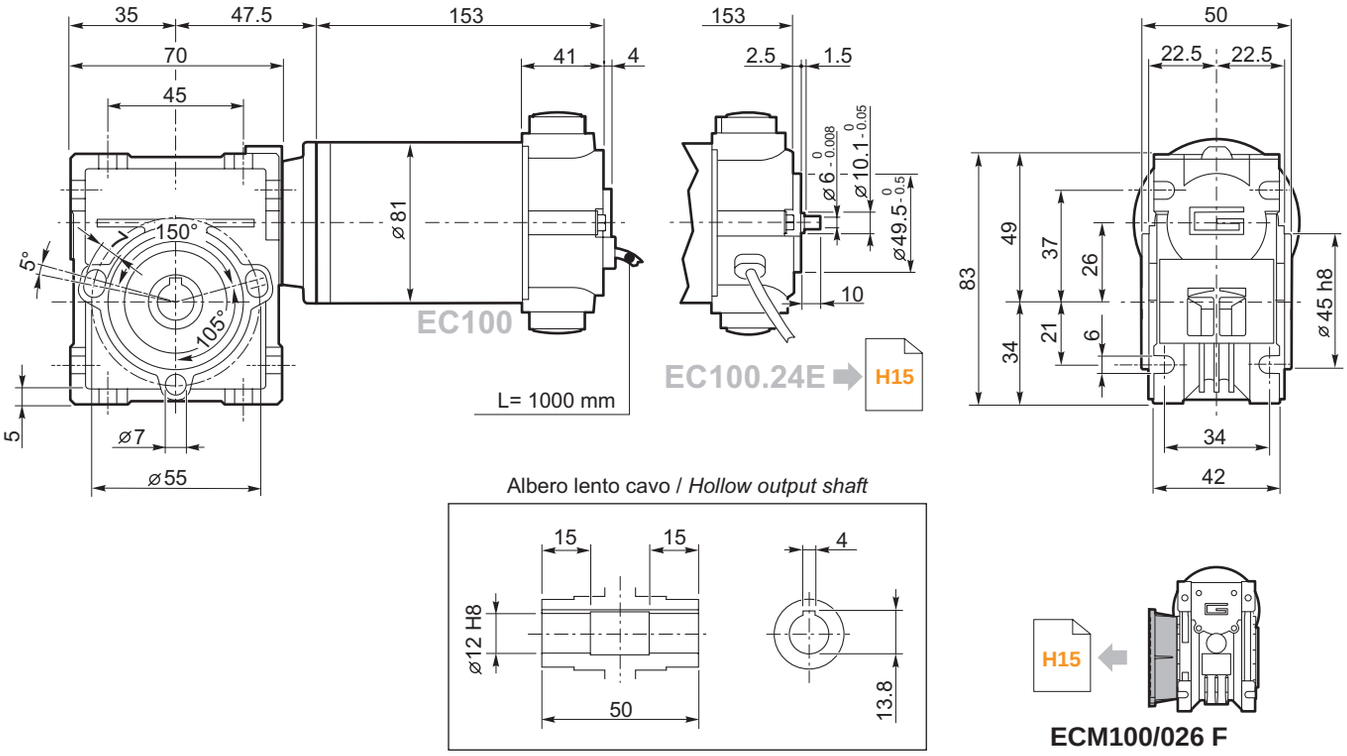
ECM070/030 U



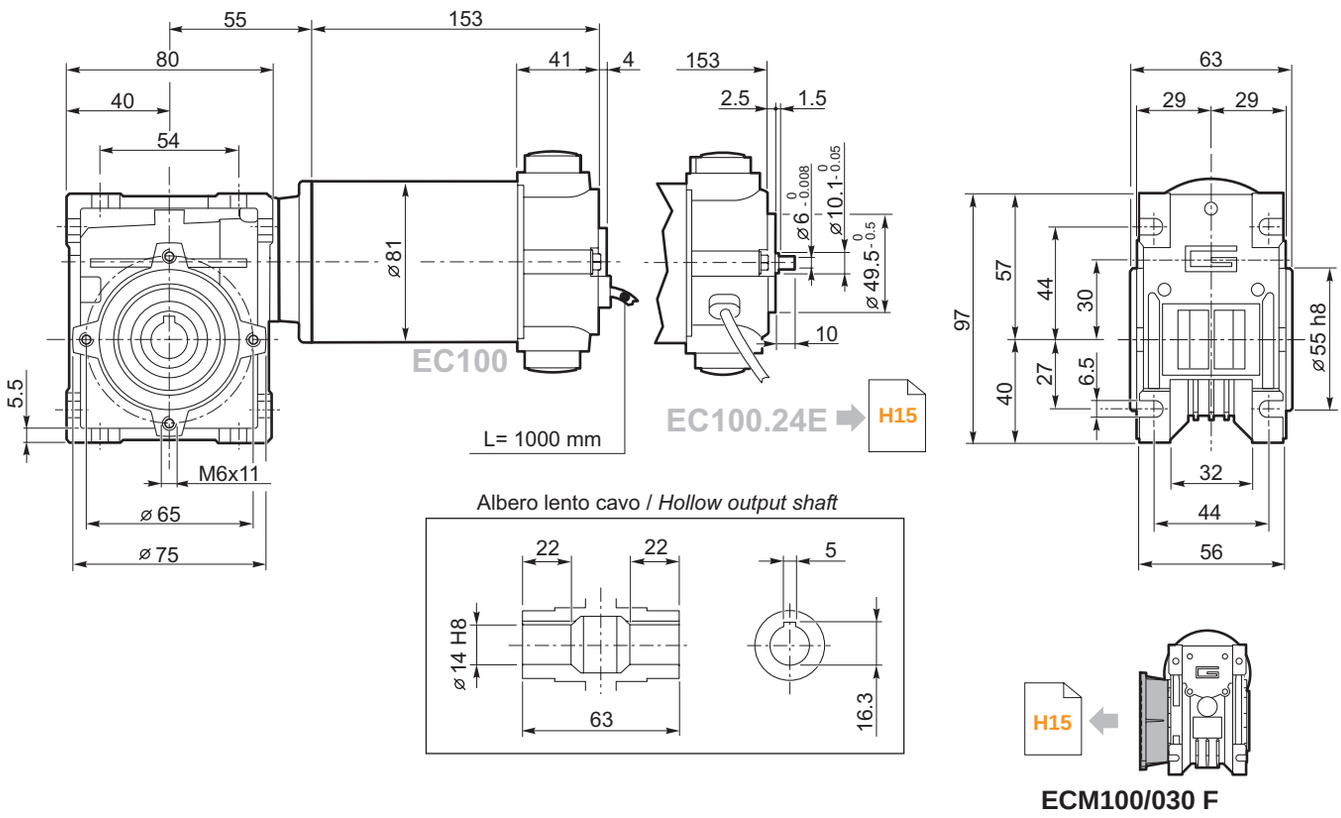
ECM070/030 F

Dimensioni *Dimensions*

ECM100/026 U

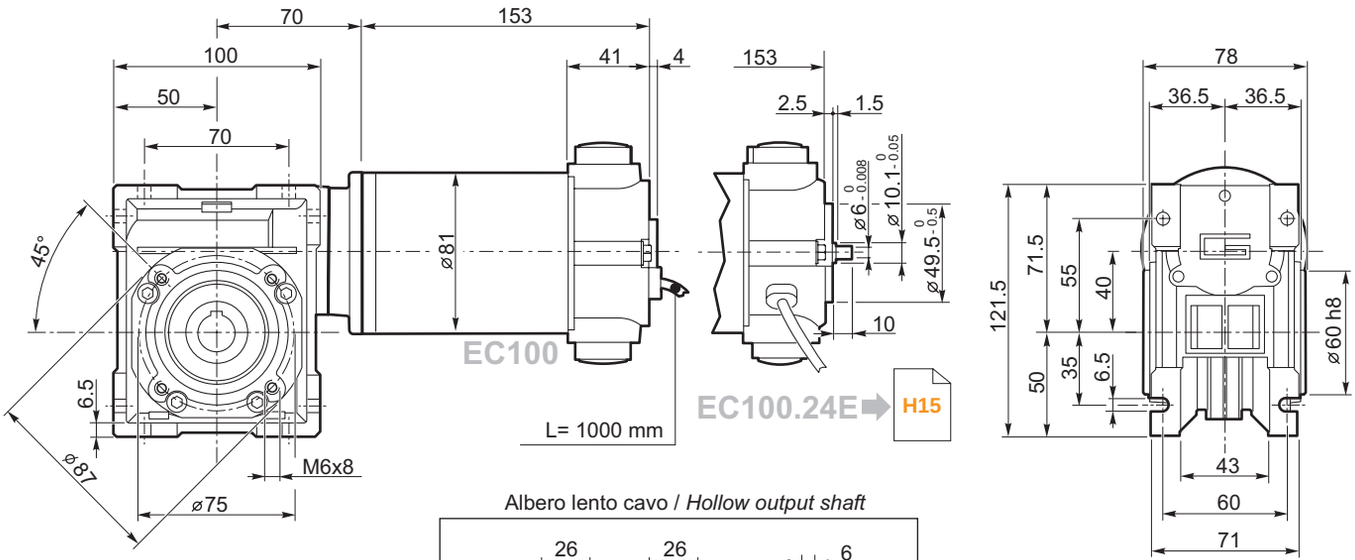


ECM100/030 U

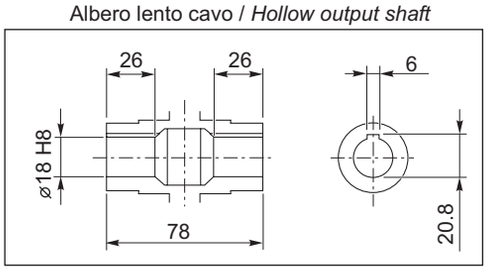


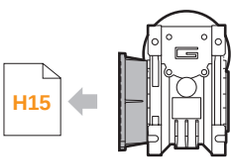
Dimensioni *Dimensions*

ECM100/040 U



Albero lento cavo / *Hollow output shaft*

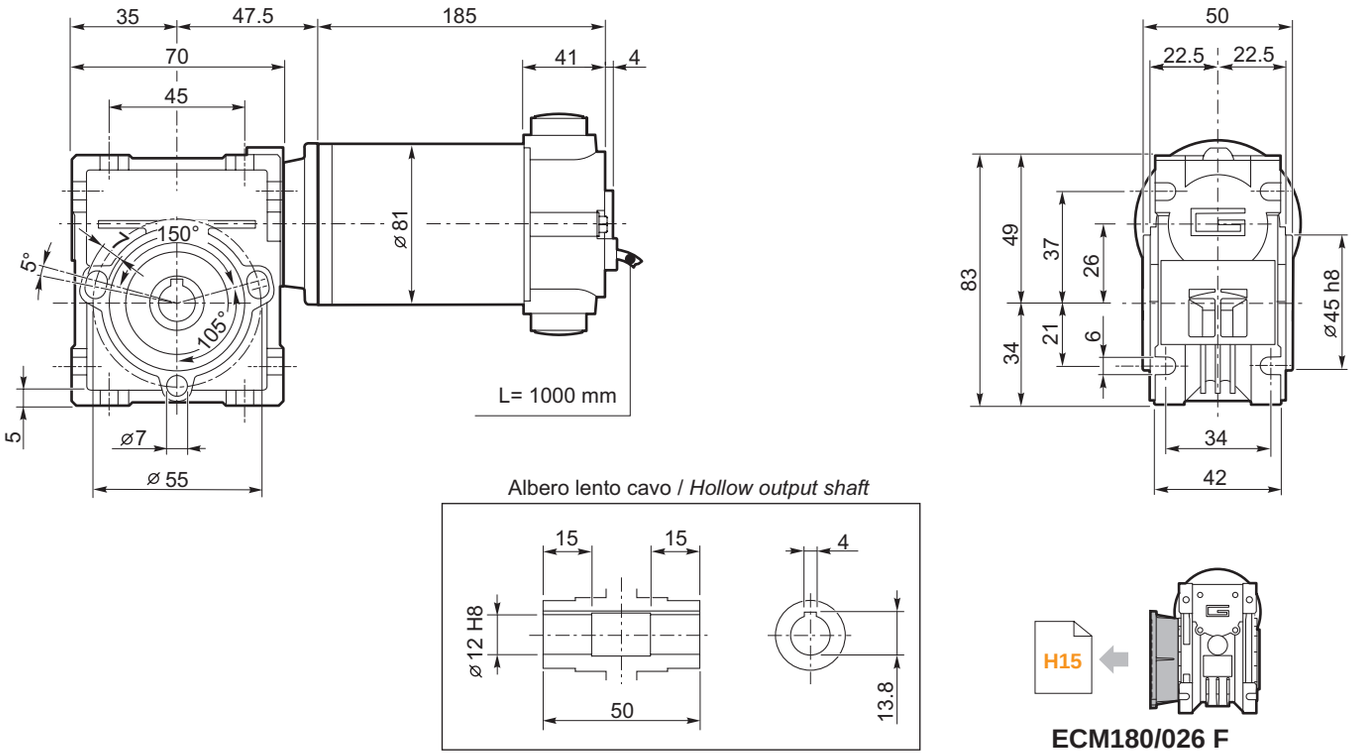




ECM100/040 F
ECM100/040 FL
ECM100/040 FB

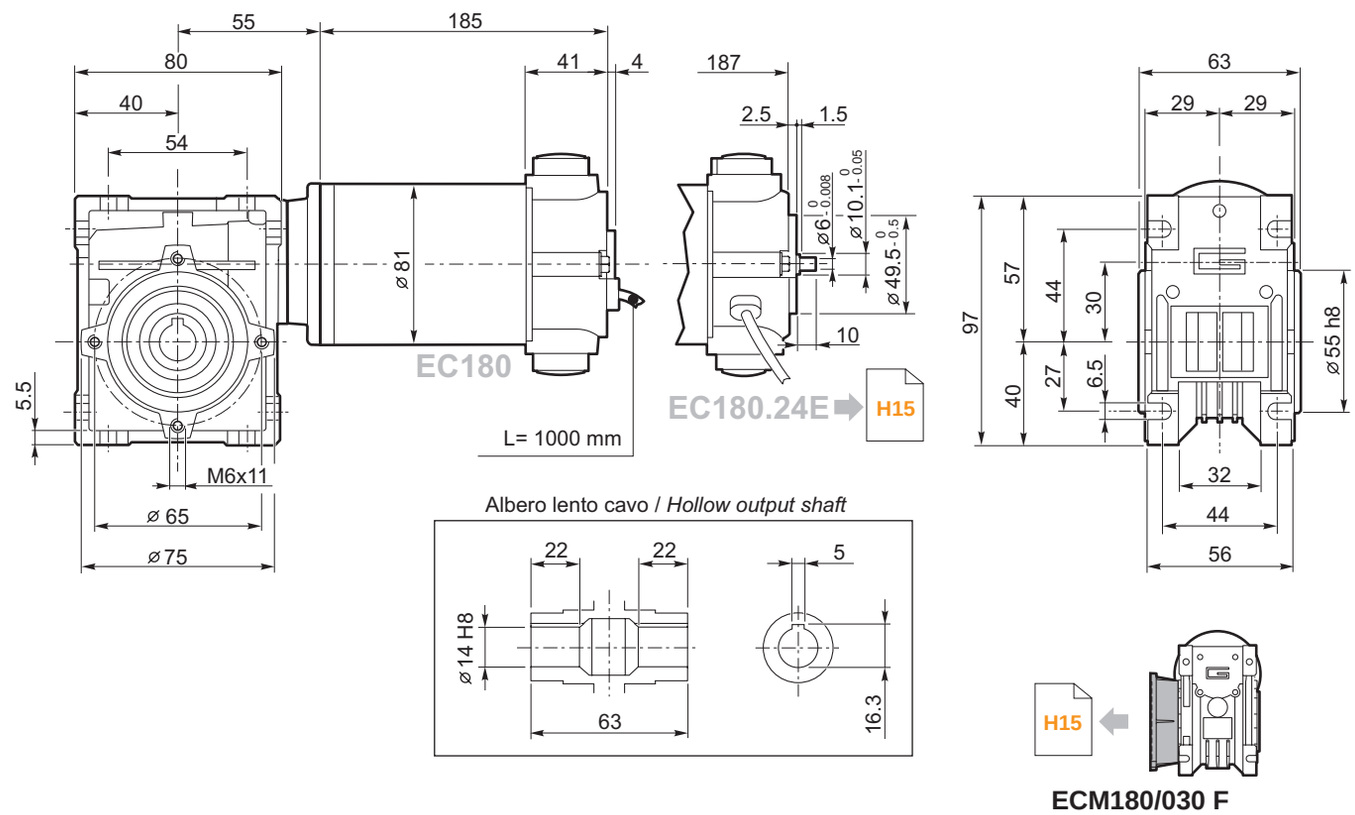
Dimensioni *Dimensions*

ECM180/026 U



ECM180/026 F

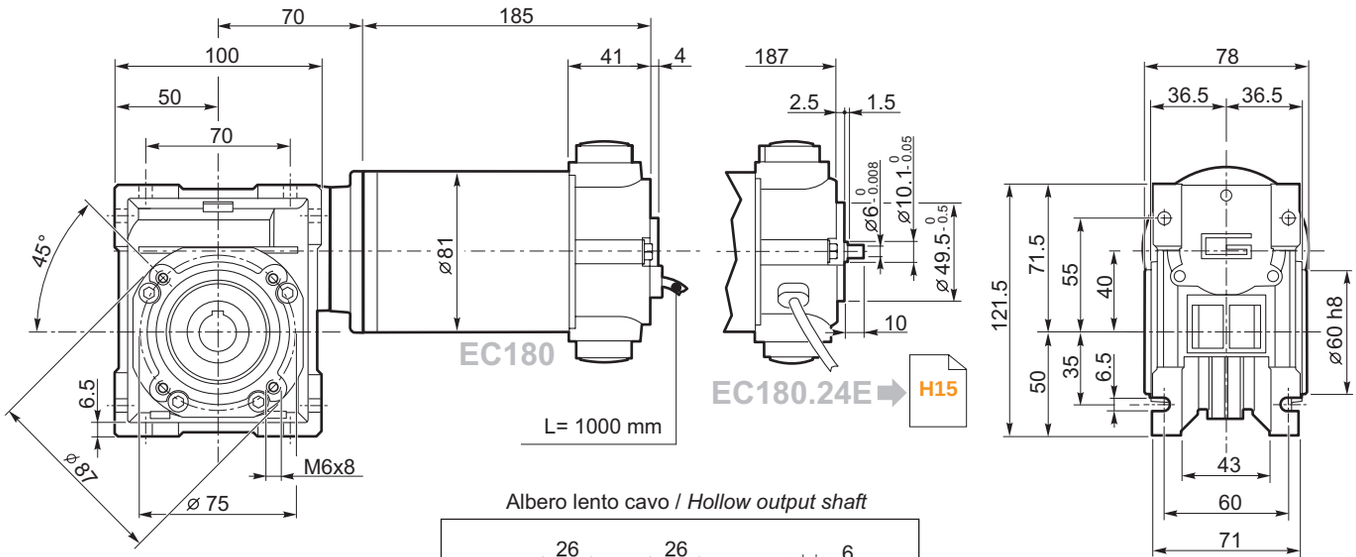
ECM180/030 U



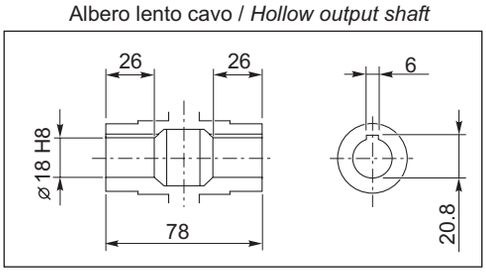
ECM180/030 F

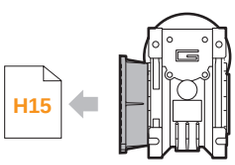
Dimensioni *Dimensions*

ECM180/040 U



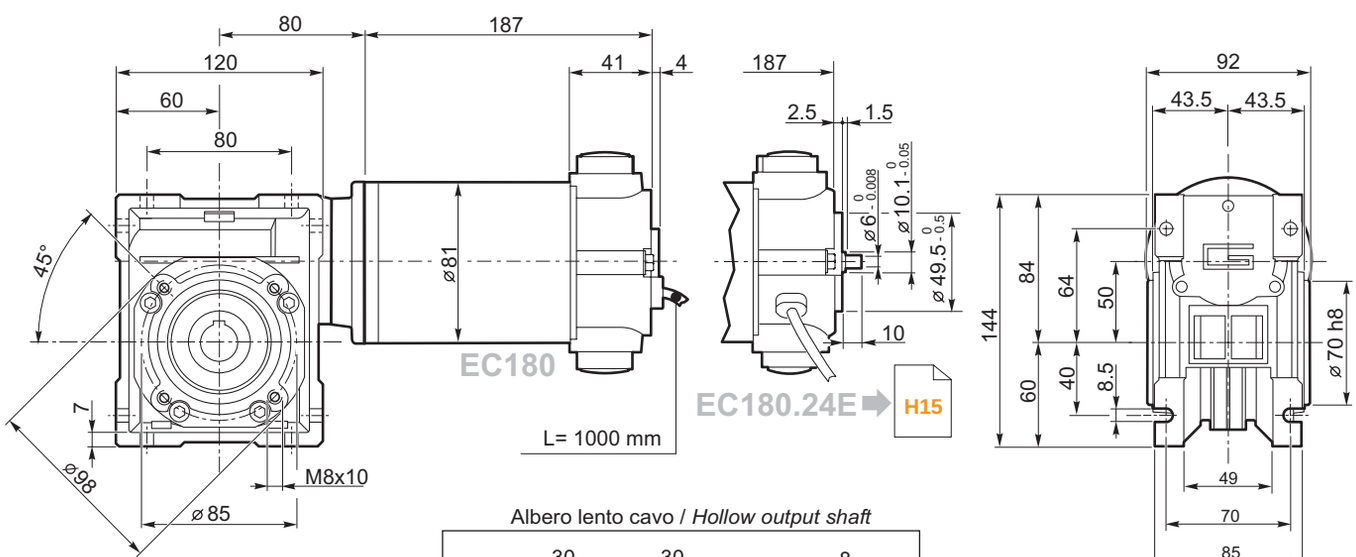
Albero lento cavo / *Hollow output shaft*



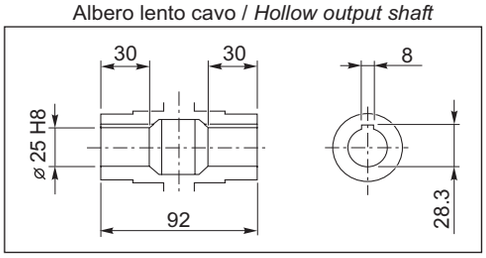


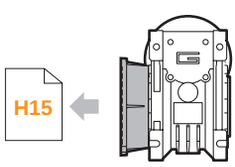
ECM180/040 F
ECM180/040 FL
ECM180/040 FB

ECM180/050 U



Albero lento cavo / *Hollow output shaft*

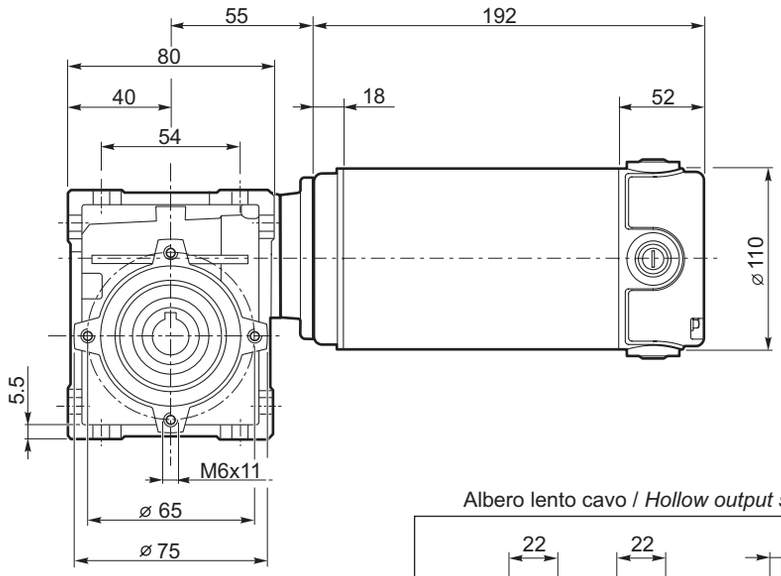


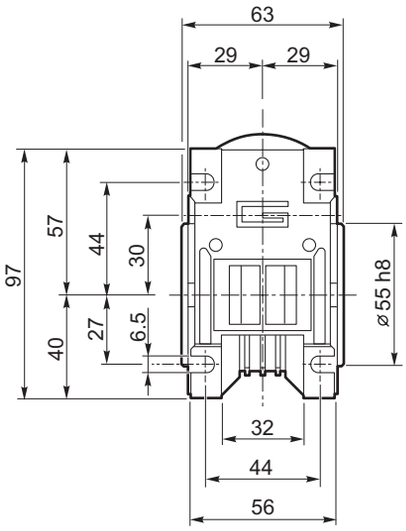


ECM180/050 F
ECM180/050 FL
ECM180/050 FB

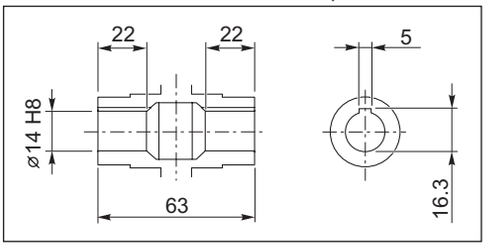
Dimensioni ***Dimensions***

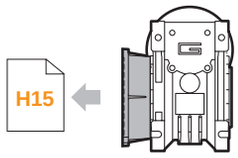
ECM350/030 U





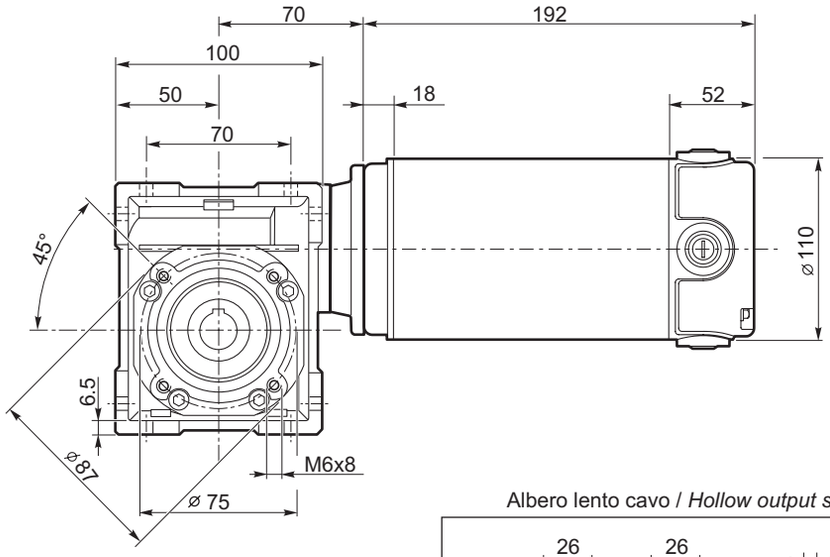
Albero lento cavo / *Hollow output shaft*

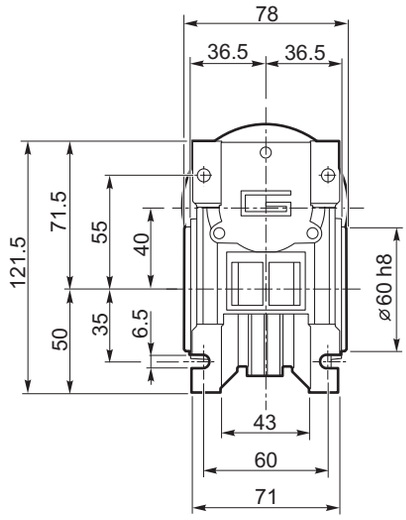




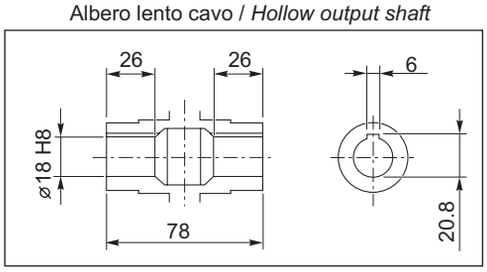
ECM350/030 F

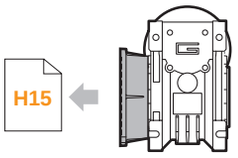
ECM350/040 U



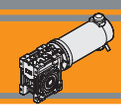


Albero lento cavo / *Hollow output shaft*



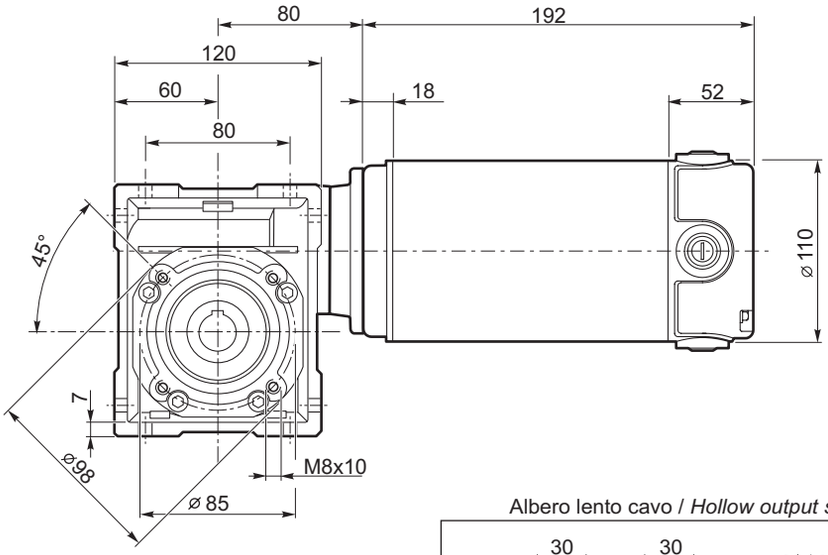


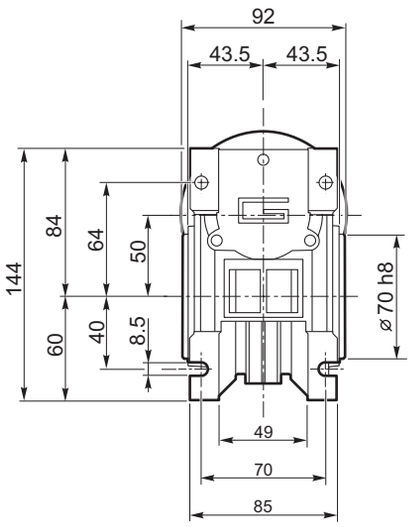
ECM350/040 F
ECM350/040 FL
ECM350/040 FB



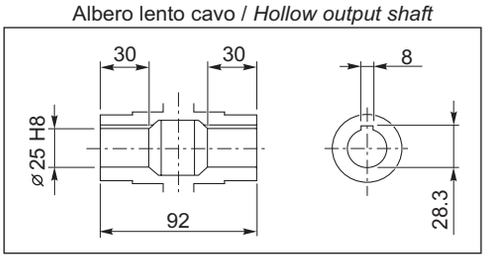
Dimensioni *Dimensions*

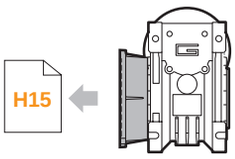
ECM350/050 U





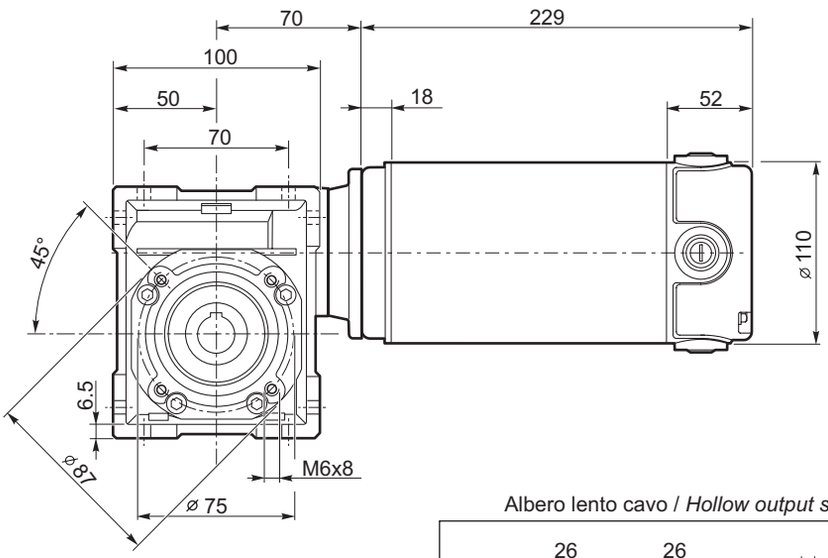
Albero lento cavo / *Hollow output shaft*

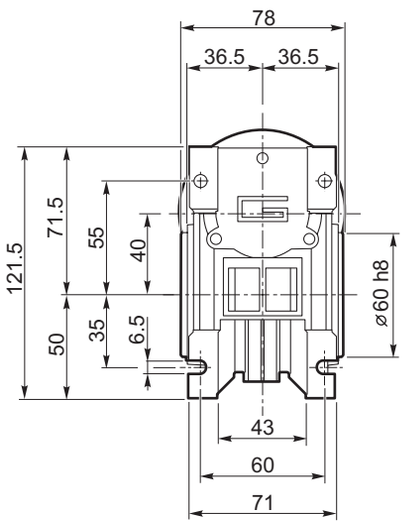




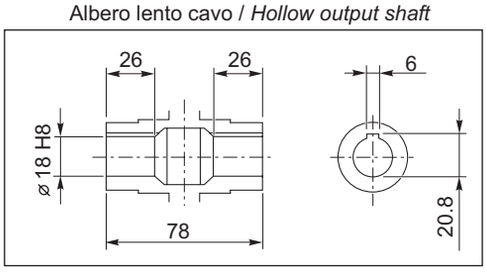
ECM350/050 F
ECM350/050 FL
ECM350/050 FB

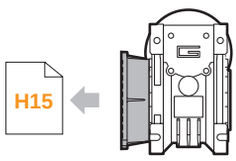
ECM600/040 U





Albero lento cavo / *Hollow output shaft*

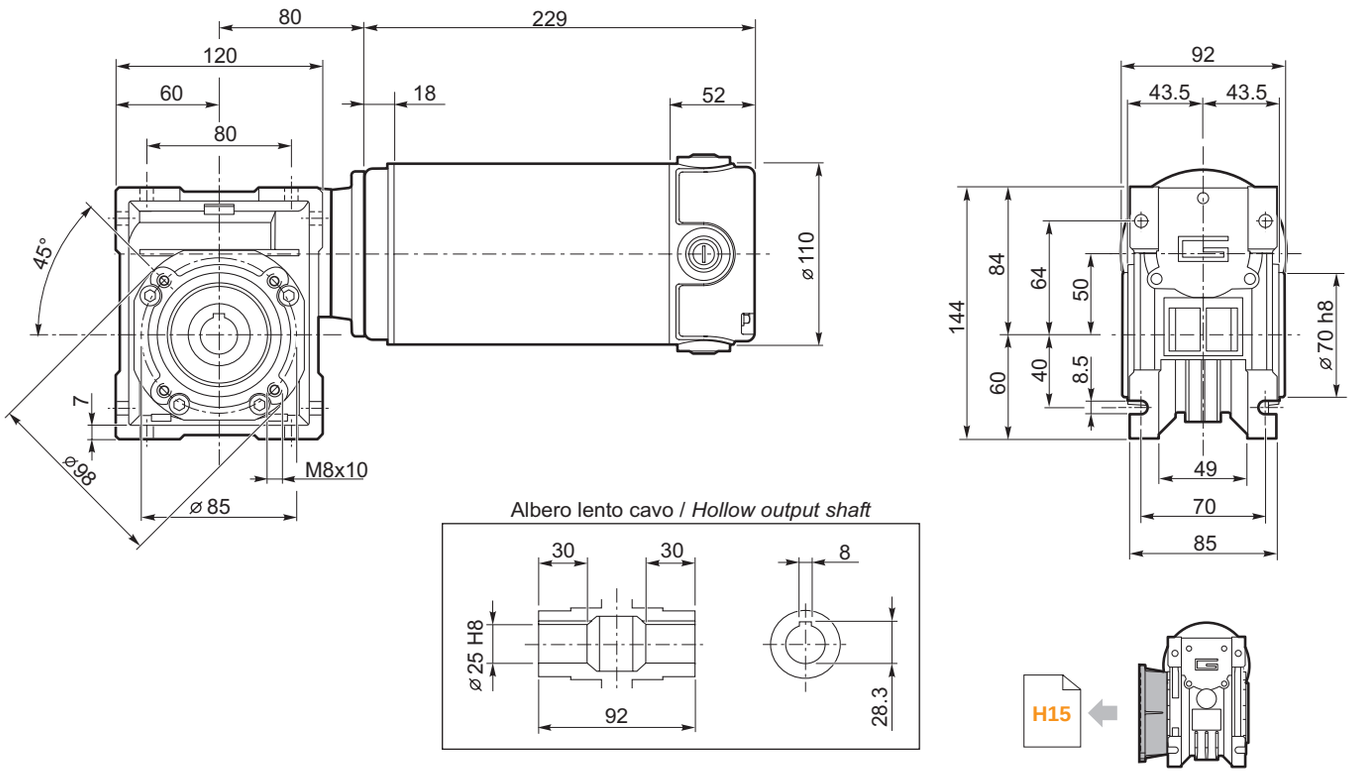




ECM600/040 F
ECM600/040 FL
ECM600/040 FB

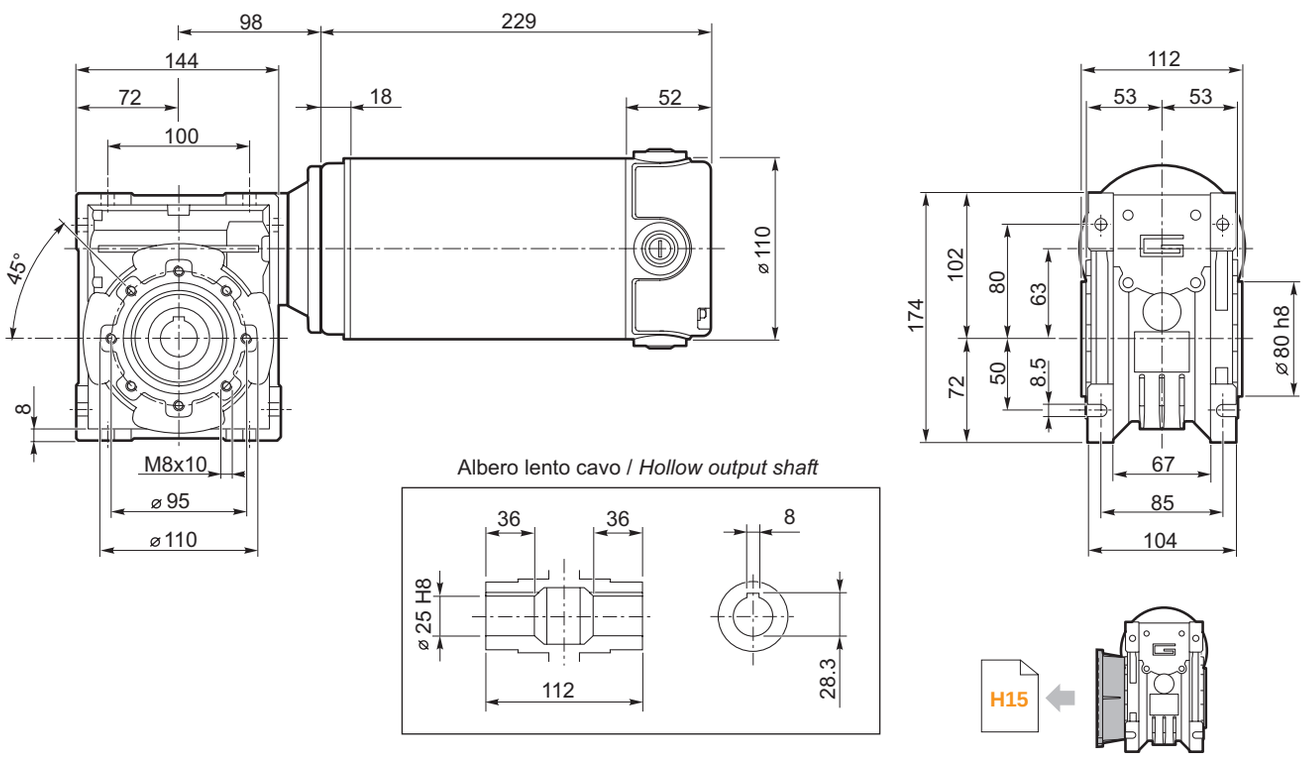
Dimensioni *Dimensions*

ECM600/050 U



ECM600/050 F
ECM600/050 FL
ECM600/050 FB

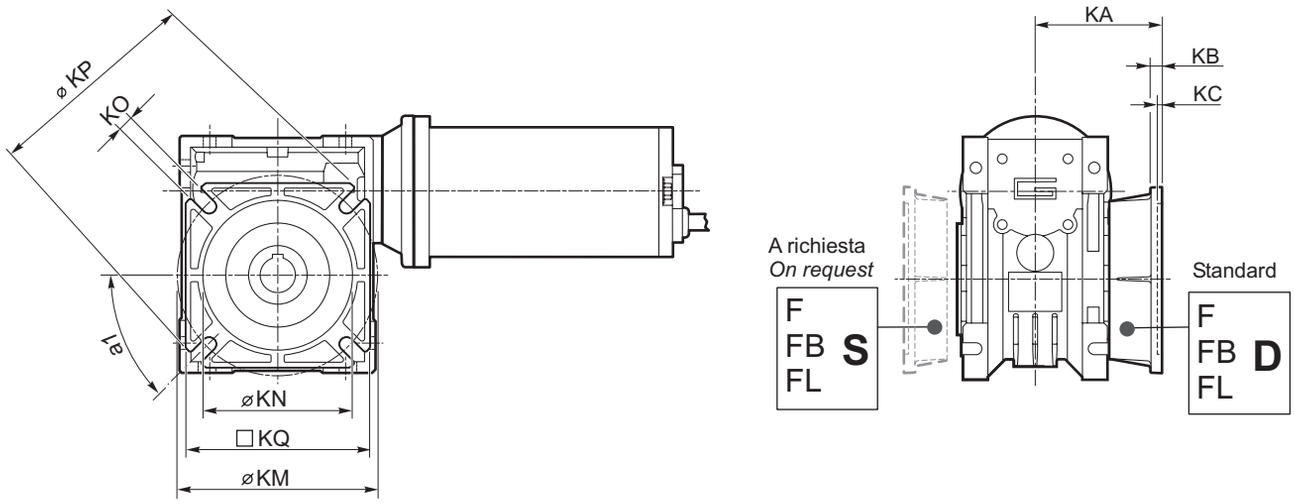
ECM600/063 U



ECM600/063 F
ECM600/063 FL
ECM600/063 FB

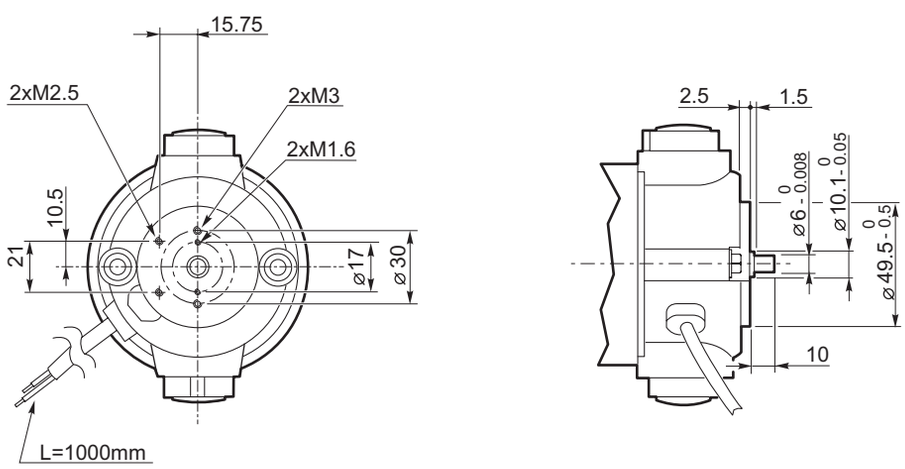
Dimensioni — *Dimensions*

ECM.../... F... Flange uscita / *Output flanges*



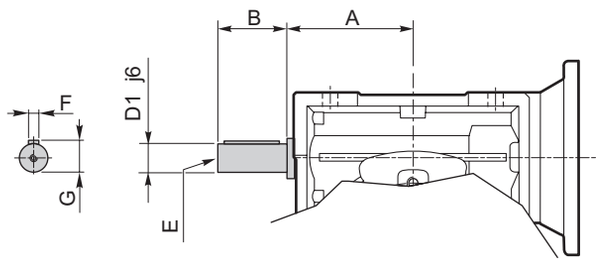
CM		CM..F								CM..FB								CM..FL							
	a1	KA	KB	KC	KM	KN H8	KO	KP	KQ	KA	KB	KC	KM	KN H8	KO	KP	KQ	KA	KB	KC	KM	KN H8	KO	KP	KQ
026	45°	45	6	4.5	55-69	40	6.5(n.4)	75	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
030	45°	54.5	6	4	68	50	6.5(n.4)	80	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
040	45°	67	7.5	4	80-95	60	9(n.4)	110	95	80	8.5	5	115-125	95	9.5(n.4)	140	112	97	7.5	4.5	80-95	60	10(n.4)	110	95
050	45°	90	9	5	90-110	70	11(n.4)	125	110	89	9	5	130-145	110	9.5(n.4)	160	132	120	9	5	90-110	70	11(n.4)	125	110
063	45°	82	10	6	150-160	115	11(n.4)	180	142	98	10	5	165-180	130	11(n.4)	200	160	112	10	6	150-160	115	11(n.4)	180	142

EC100.24E
EC180.24E



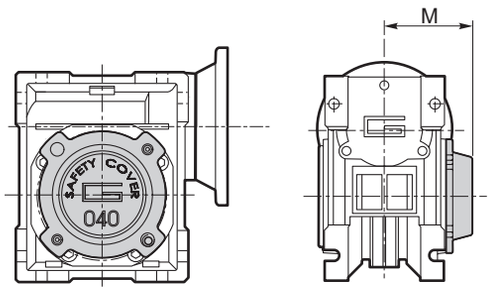
Opzioni — *Options*

VS - Vite sporgente / *Extended input shaft*



	A	B	D_1 j6	E	F	G
CM 030	45	20	9	M4	3	10.2
CM 040	53	23	11	M5	4	12.5
CM 050	64	30	14	M6	5	16
CM 063	75	40	19	M6	6	21.5

SC - *Safety cover*



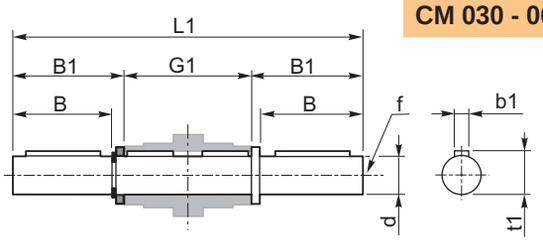
	M
CM 030	47
CM 040	54.5
CM 050	62.5
CM 063	73

Accessori — *Accessories*

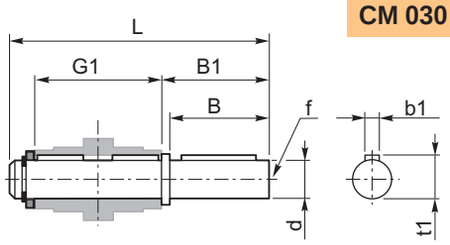
Albero lento — *Output shaft*

CM 030 - 063

DZ

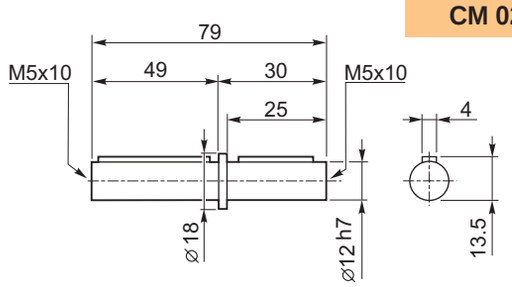


SZ



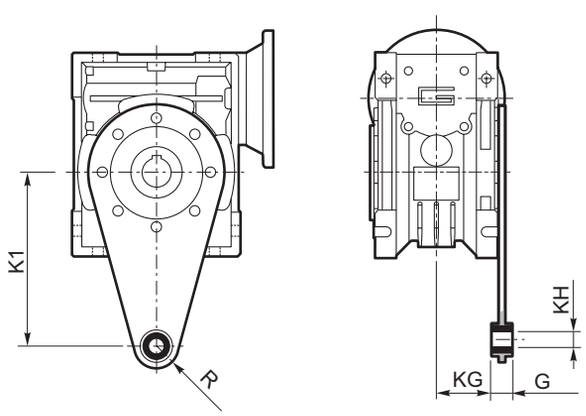
	d h7	B	B1	G1	L	L1	f	b1	t1
CM 030	14	30	32.5	63	102	128	M6	5	16
CM 040	18	40	43	78	128	164	M6	6	20.5
CM 050	25	50	53.5	92	153	199	M10	8	28
CM 063	25	50	53.5	112	173	219	M10	8	28

CM 026



Braccio di reazione — *Torque arm*

	K1	G	KG	KH	R
CM 030	85	14	23	8	15
CM 040	100	14	31	10	18
CM 050	100	14	38	10	18
CM 063	150	14	47.5	10	18



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