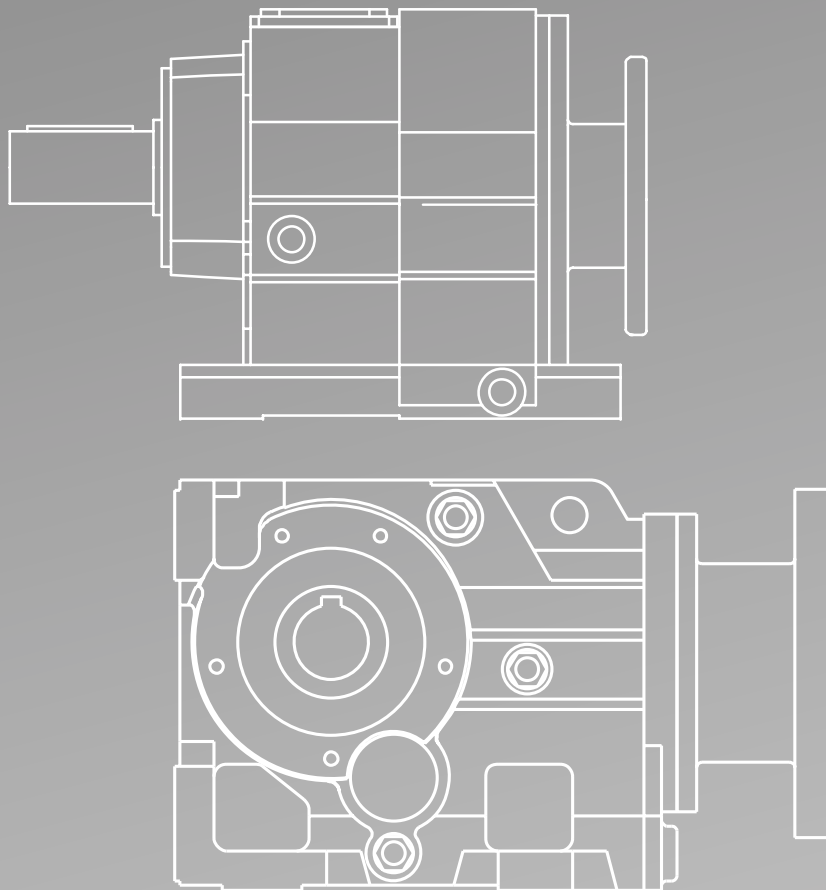
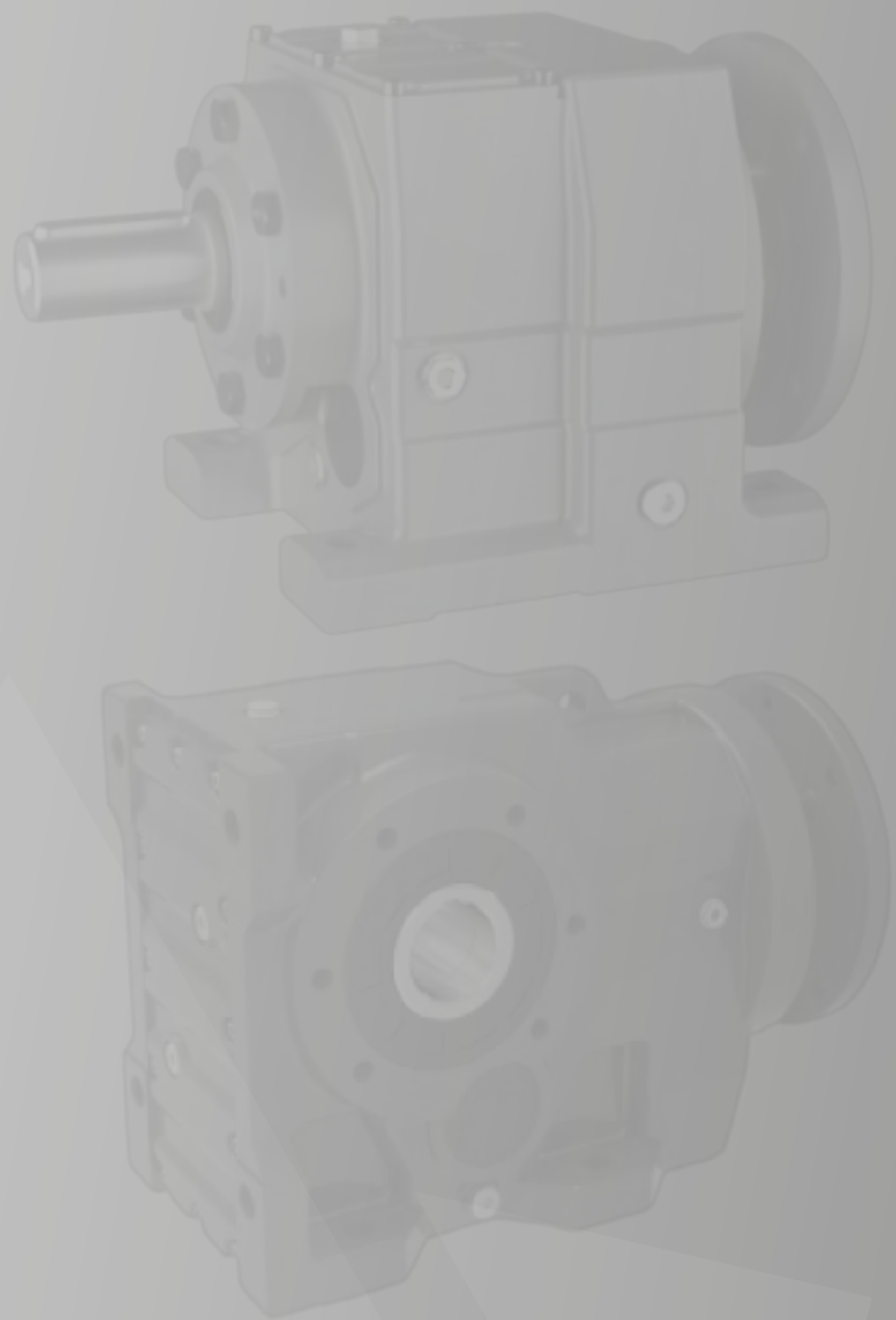


REDUCTORES DE ENGRANAJES

■ *MR / MKA Series*





01

CONTENIDO

MR SERIES

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02

MKA SERIES

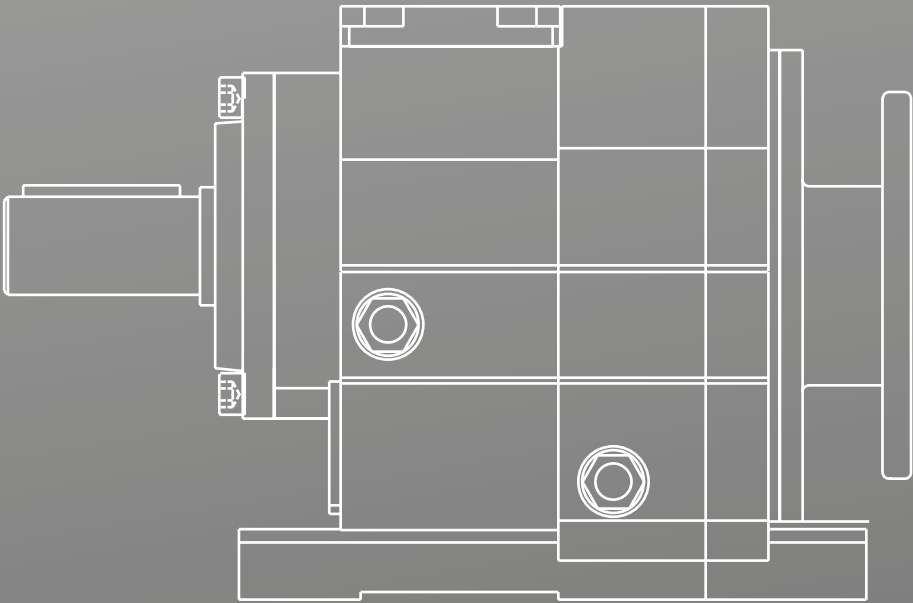
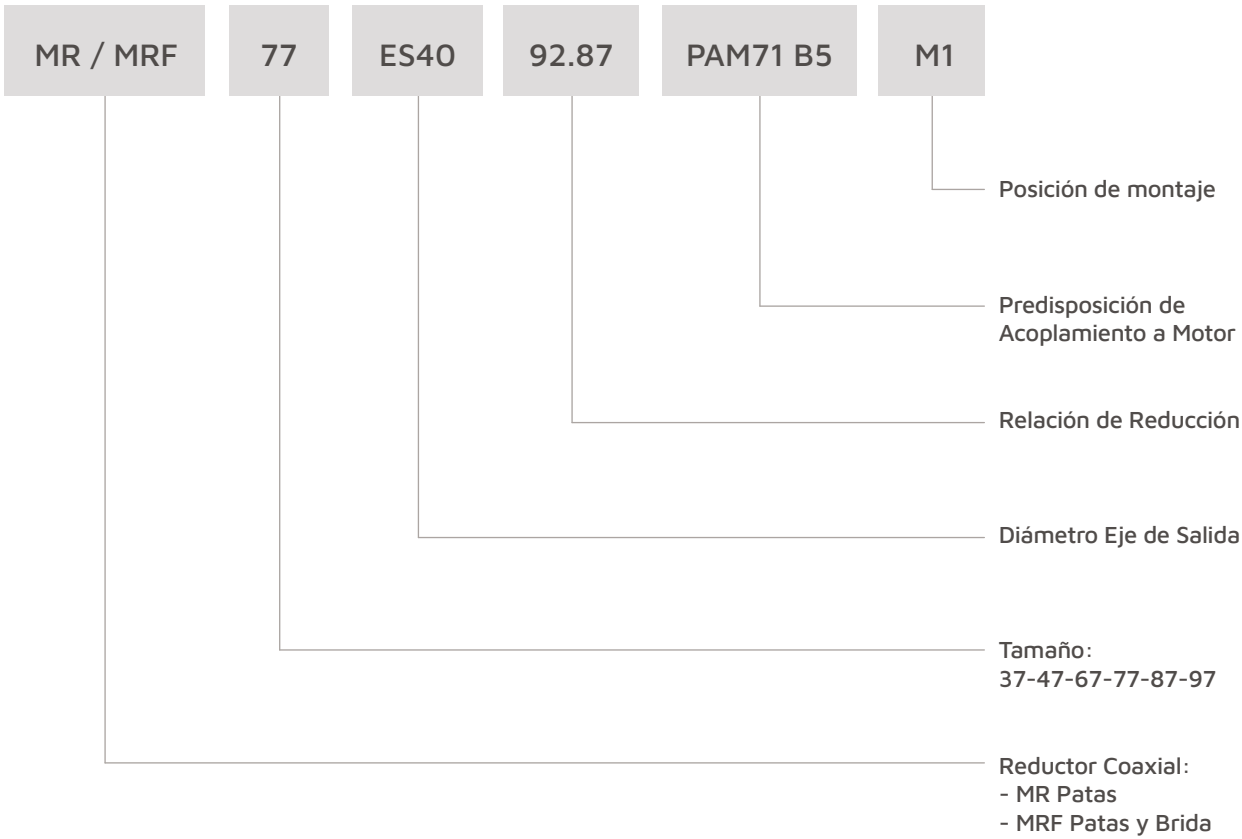
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03

Motores eléctricos

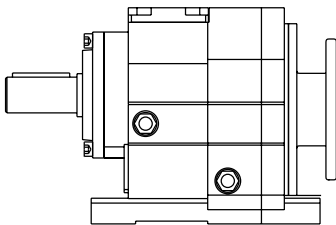
81

1.1. NOMENCLATURA



MR SERIES

1.2. REDUCTOR COAXIAL



Reductores con carcasa de fundición y fijación universal (patas y brida de salida). Están compuestos por dos o tres trenes de engranajes helicoidales dependiendo de la reducción. Su mayor particularidad es la baja rumorosidad, compactabilidad, alto rendimiento y fiabilidad.

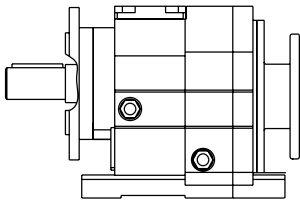
Gear reducers with a cast housing and universal mounting (feet and output flange). They are composed of two or three stages of heli-cal gears depending on the reduction ratio. Their main features are low noise levels, compact design, high efficiency, and reliability.

CARACTERÍSTICAS:

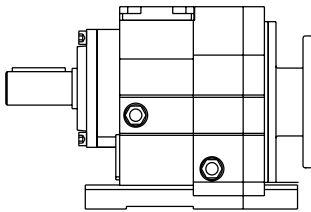
- **Carcasa modular de hierro fundido, rígida y precisa.** *Modular cast iron housing, rigid and precise*
- **Alta eficiencia de hasta el 96%.** *High efficiency of up to 96%.*
- **Amplia gama de tamaños.** *Wide range of sizes.*
- **Resistencia y fiabilidad para aplicaciones pesadas.** *Strength and reliability for heavy-duty applications.*

1.3. ESTRUCTURA DEL PRODUCTO

MRF Series



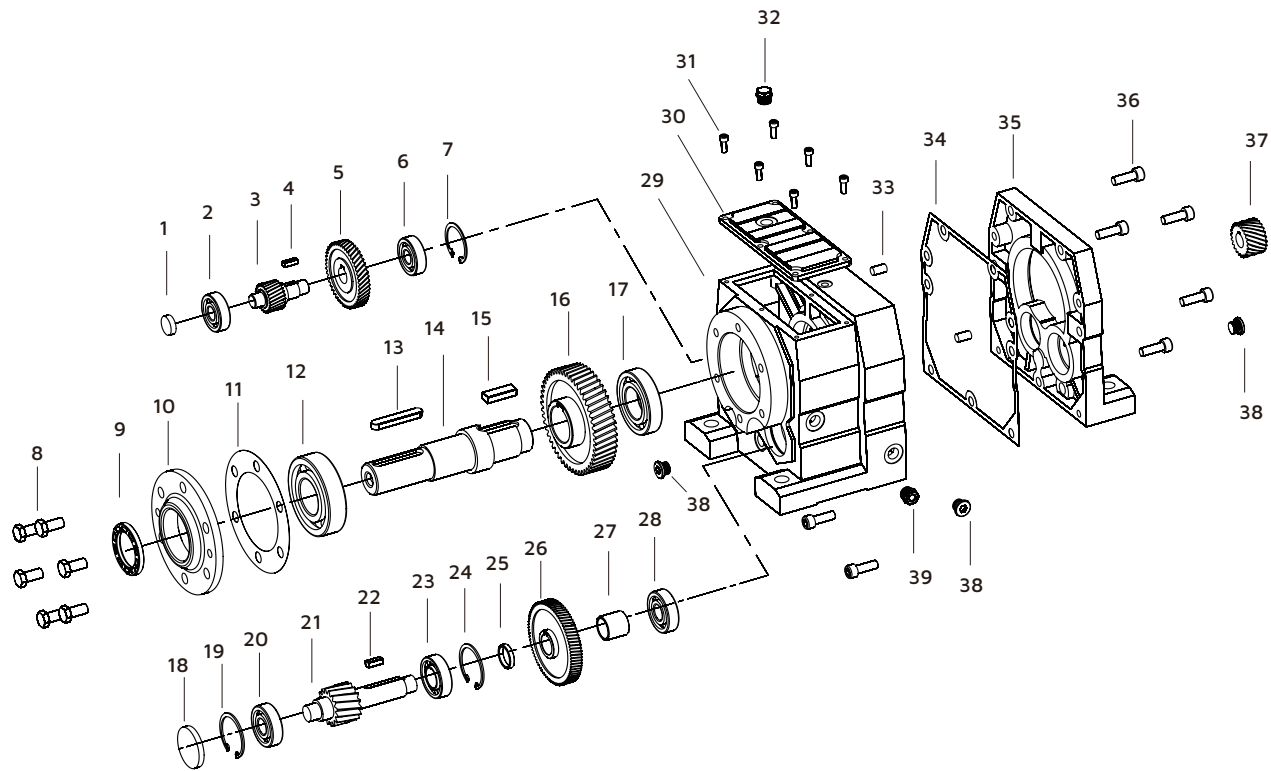
MR Series



ENTORNO DE TRABAJO:

- **Para todo tipo de aplicaciones industriales.** *Suitable for all types of industrial applications*
- **Apto para trabajar en sentido horario y anti-horario.** *Can operate in both clockwise and counterclockwise directions.*
- **El lugar de trabajo debe estar por debajo de los 1000 metros sobre el nivel del mar.** *The operating location must be below 1000 meters above sea level*
- **Fijación sobre una superficie plana, evitar vibraciones y/o tensiones no deseadas.** *Mounting should be on a flat surface, avoiding vibrations and/or unwanted stresses.*
- **Temperatura de trabajo: -40°C -50°C.** *Operating temperature: -40°C to -50°C.*
- **La velocidad de entrada debe ser inferior a 3000 rpm y la velocidad tangencial del eje de salida no debe superar los 20 m/s.** *The input speed must be below 3000 rpm, and the tangential speed of the output shaft must not exceed 20 m/s.*

1.4. GRÁFICO DE DESMONTAJE



1. Tapón

2. Rodamiento

3. Eje de Engranaje

4. Chaveta

5. Engranaje

6. Rodamiento

7. Anillo de Seguridad

8. Tornillos

9. Retén

10. Tapa Salida

11. Junta de Papel

12. Rodamiento

13. Chaveta

14. Eje de Salida

15. Chaveta

16. Engranaje

17. Rodamiento

18. Tapón

19. Anillo de Seguridad

20. Rodamiento

21. Eje Engranaje Cónico

22. Chaveta

23. Rodamiento

24. Anillo de Seguridad

25. Arandela de Ajuste

26. Engranaje

27. Arandela de Ajuste

28. Rodamiento

29. Carcasa

30. Tapa Carcasa

31. Tornillos

32. Tapón de Respiración

33. Tuerca

34. Junta de Papel

35. Carcasa

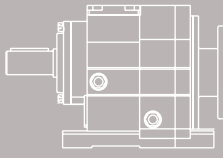
36. Tornillos

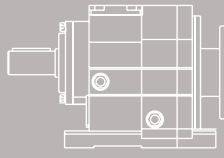
37. Engranaje

38. Tapón de Aceite

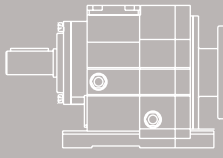
39. Tapón Visor

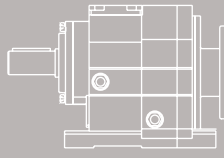
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.12	4.6	250	195.24	3.3	MR77 MRF77	6P
	5.4	210	166.59	3.9		
	6.2	186	145.67	4.4		
	4.5	255	199.81	2.4	MR67 MRF67	6P
	4.9	235	184.07	2.6		
	5.7	200	158.14	3.0		
	6.5	175	137.67	3.4		
	7.0	164	128.97	3.7		
	7.9	145	113.94	4.1		
	6.9	166	199.81	3.6	MR67 MRF67	4P
	7.5	153	184.07	3.9		
	5.1	225	176.88	1.35	MR47 MRF47	6P
	5.5	210	162.94	1.45		
	6.4	178	139.99	1.70		
	7.4	155	121.87	1.95		
	7.8	147	176.88	2.0	MR47 MRF47	4P
	8.5	135	162.94	2.2		
	9.9	116	139.99	2.6		
	11	101	121.87	3.0		
	12	95	114.17	3.2		
	14	84	100.86	3.6		
	15	78	93.68	3.9	MR37 MRF37	6P
	6.7	172	134.82	1.15		
	7.3	157	123.66	1.25		
	8.6	134	105.28	1.50		
	9.9	116	90.77	1.75		
	11	108	84.61	1.85		
	12	94	73.96	2.1	MR37 MRF37	4P
	10	112	134.82	1.8		
	11	103	123.66	1.95		
	13	87	105.28	2.3		
	15	75	90.77	2.7		
	16	70	84.61	2.8		
0.18	19	61	73.96	3.3	MR77 MRF77	6P
	4.5	385	195.24	2.1		
	5.2	330	166.59	2.5		
	6.0	290	145.67	2.8		
	6.3	275	138.39	3.0		
	7.2	240	121.42	3.4		
	6.8	255	195.24	3.2		
	7.9	215	166.59	3.8		
	9.1	190	145.67	4.3		
	9.5	180	138.39	4.6		

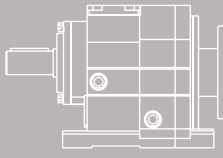
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.18	4.3	395	199.81	1.5	MR67 MRF67	6P
	4.7	365	184.07	1.65		
	5.5	310	158.14	1.90		
	6.3	270	137.67	2.2		
	6.8	255	128.97	2.3		
	7.6	225	113.94	2.7		
	8.2	210	105.83	2.9		
	9.1	190	95.91	3.2		
	10	170	86.11	3.5		
	11.7	147	74.17	4.1		
	12	138	69.75	4.3	MR67 MRF67	4P
	6.6	260	199.81	2.3		
	7.2	240	184.07	2.5		
	8.4	205	158.14	2.9		
	9.6	179	137.67	3.3		
	10	168	128.97	3.6		
	12	148	113.94	4.0		
	12	138	105.83	4.3	MR47 MRF47	4P
	7.5	230	176.88	1.30		
	8.1	210	162.94	1.40		
	9.4	182	139.99	1.65		
	11	159	121.87	1.90		
	12	149	114.17	2.0		
	13	131	100.86	2.3		
	14	122	93.68	2.5		
	16	111	84.90	2.7		
	17	99	76.23	3.0		
	7.0	245	123.66	0.80	MR37 MRF37	6P
	8.3	210	105.28	0.95		
	9.6	179	90.77	1.10		
	10	167	84.61	1.20		
	9.8	176	134.82	1.15	MR37 MRF37	4P
	11	161	123.66	1.25		
	13	137	105.28	1.45		
	15	118	90.77	1.70		
	16	110	84.61	1.80		
	18	96	73.96	2.1		
	19	90	69.33	2.2		
	22	80	61.18	2.5		
	24	73	55.76	2.8		
	27	63	48.08	3.2		

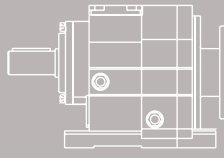
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.25	4.5	530	195.24	1.55	MR77 MRF77	6P
	5.3	450	166.59	1.80		
	6.0	395	145.67	2.1		
	6.7	360	195.24	2.3		
	7.8	305	166.59	2.7	MR77 MRF77	4P
	8.9	270	145.67	3.1		
	9.4	255	138.39	3.2		
	11	225	121.42	3.7		
	4.4	540	199.81	1.10	MR67 MRF67	6P
	4.8	500	184.07	1.20		
	5.6	430	158.14	1.40		
	6.4	375	137.67	1.60		
	6.8	350	128.97	1.70	MR67 MRF67	4P
	7.7	310	113.94	1.95		
	8.3	285	105.83	2.1		
	6.5	365	199.81	1.65		
	7.1	340	184.07	1.80	MR67 MRF67	4P
	8.2	290	158.14	2.1		
	9.4	255	137.67	2.4		
	10	235	128.97	2.5		
	11	210	113.94	2.9	MR47 MRF47	4P
	12	194	105.83	3.1		
	14	176	95.91	3.4		
	15	158	86.11	3.8		
	7.3	325	176.88	0.90	MR47 MRF47	4P
	8.0	300	162.94	1.00		
	9.3	255	139.99	1.15		
	11	225	121.87	1.35		
	11	210	114.17	1.45	MR37 MRF37	4P
	13	185	100.86	1.60		
	14	172	93.68	1.75		
	15	156	84.90	1.90		
	17	140	76.23	2.1	MR37 MRF37	4P
	19	126	68.54	2.4		
	20	118	64.21	2.5		
	23	104	56.73	2.9		
	25	97	52.69	3.1	MR37 MRF37	4P
	27	88	47.75	3.4		
	9.6	250	134.82	0.8		
	11	225	123.66	0.9		
	12	193	105.28	1.05	MR37 MRF37	4P
	14	167	90.77	1.2		
	15	155	84.61	1.3		

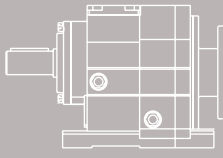
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.25	18	136	73.96	1.45	MR37 MRF37	4P
	19	127	69.33	1.55		
	21	112	61.18	1.8		
	23	102	55.76	1.95		
	27	88	48.08	2.3		
	29	82	44.81	2.4		
	33	72	39.17	2.8		
	35	67	36.72	3		
	40	60	32.4	3.4		
	3.1	1140	289.74	2.6	MR97 MRF97	6P
0.37	3.5	1000	255.71	3		
	3.7	950	241.25	3.2		
	4.2	850	216.28	3.5	MR87 MRF87	6P
	3.7	970	246.54	1.6		
	4.2	850	216.54	1.8		
	4.4	810	205.71	1.9		
	4.9	715	181.77	2.2	MR77 MRF77	6P
	5.8	610	155.34	2.5		
	5.4	655	166.59	1.25		
	6.2	570	145.67	1.45	MR77 MRF77	4P
	6.5	545	138.39	1.5		
	7.1	500	195.24	1.65		
	8.3	425	166.59	1.9		
	9.5	375	145.67	2.2	MR67 MRF67	6P
	10	355	138.39	2.3		
	11	310	121.42	2.6		
	13	265	102.99	3.1		
	15	240	92.97	3.5	MR67 MRF67	4P
	5.7	620	158.14	0.95		
	6.5	540	137.67	1.1		
	7	505	128.97	1.2		
	7.9	445	113.94	1.35	MR67 MRF67	4P
	6.9	510	199.81	1.15		
	7.5	470	184.07	1.25		
	8.7	405	158.14	1.5		
	10	355	137.67	1.7	MR67 MRF67	4P
	11	330	128.97	1.8		
	12	290	113.94	2.1		
	13	270	105.83	2.2		
	14	245	95.91	2.4	MR67 MRF67	4P
	16	220	86.11	2.7		
	19	190	74.17	3.2		

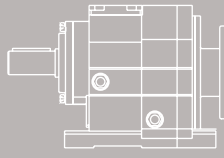
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.37	20	179	69.75	3.4	MR67 MRF67	4P
	23	157	61.26	3.8		
	24	146	56.89	4.1		
	9.9	360	139.99	0.85		
	11	310	121.87	0.95	MR47 MRF47	4P
	12	290	114.17	1.05		
	14	260	100.86	1.15		
	15	240	93.68	1.25		
	16	215	84.9	1.4		
	18	195	76.23	1.55		
	20	176	68.54	1.7		
	21	164	64.21	1.8		
	24	145	56.73	2.1		
	26	135	52.69	2.2		
	29	122	47.75	2.5		
	32	110	42.87	2.7		
	37	95	36.93	3.2		
	40	89	34.73	3.4		
	41	87	33.79	2.8		
	44	80	31.12	2.8		
	52	69	26.74	4.4	MR37 MRF37	4P
	59	60	13.28	5		
	63	56	21.81	5.4		
	15	230	90.77	0.85		
	16	215	84.61	0.9		
	19	189	73.96	1.05		
	20	178	69.33	1.15		
	23	157	61.18	1.3		
	25	143	55.76	1.4		
	29	123	48.08	1.6		
	31	115	44.81	1.75		
	35	100	39.17	2		
	38	94	36.72	2.1		
	43	83	32.4	2.4		
	48	74	28.73	2.7		
	57	63	24.42	3.2		
	49	73	28.32	2.8		
	53	67	26.03	2.8		
	62	57	22.27	3.5		
	71	49	19.31	4.1		
	76	46	18.05	4.3		
	88	40	15.6	5		
	104	34	13.15	5.6		
	117	30	11.83	6.0		

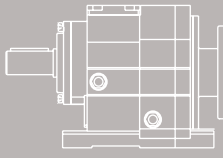
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.55	3.1	1690	289.74	1.75	MR97 MRF97	6P
	3.5	1490	255.71	2.0		
	3.7	1410	241.25	2.1		
	4.2	1260	216.28	2.4		
	4.7	1120	289.74	2.7	MR97 MRF97	4P
	5.3	990	255.71	3.0		
	5.6	930	241.25	3.2		
	6.3	840	216.28	3.6		
	3.7	1440	246.54	1.10	MR87 MRF87	6P
	4.2	1260	216.54	1.25		
	4.4	1200	205.71	1.30		
	4.9	1060	181.77	1.45		
	5.8	910	155.34	1.70	MR87 MRF87	4P
	5.5	950	246.54	1.65		
	6.3	840	216.54	1.85		
	6.6	795	205.71	1.95		
	7.5	700	181.77	2.2		
	8.8	600	155.34	2.6		
	9.6	550	142.41	2.8		
	11	485	124.97	3.2		
	11	455	118.43	3.4		
	13	400	103.65	3.9		
	8.2	645	166.59	1.25	MR77 MRF77	4P
	9.3	565	145.67	1.45		
	9.8	535	138.39	1.55		
	11	470	121.42	1.75		
	13	400	102.99	2.1		
	15	360	92.97	2.3		
	17	315	81.80	2.6		
	18	300	77.24	2.8		
	21	255	65.77	3.2	MR67 MRF67	4P
	8.6	610	158.14	1.00		
	9.9	530	137.67	1.15		
	11	500	128.97	1.20		
	12	440	113.94	1.35		
	13	410	105.83	1.45		
	14	370	95.91	1.60		
	16	335	86.11	1.80		
	18	285	74.17	2.1	MR67 MRF67	4P
	20	270	69.75	2.2		
	22	235	61.26	2.5		
	24	220	56.89	2.7		

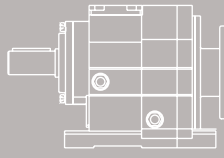
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.55	15	360	93.68	0.85	MR47 MRF47	4P
	16	330	84.90	0.90		
	18	295	76.23	1.00		
	20	265	68.54	1.15		
	21	250	64.21	1.20		
	24	220	56.73	1.35		
	26	205	52.69	1.45		
	28	184	47.75	1.65		
	32	166	42.87	1.80		
	37	143	36.93	2.1		
	39	134	34.73	2.2	MR47 MRF47	4P
	46	115	29.88	2.6		
	51	103	26.74	2.9		
	58	90	23.28	3.3		
	62	84	21.81	3.6		
	22	235	61.18	0.85	MR37 MRF37	4P
	24	215	55.76	0.95		
	28	186	48.08	1.10		
	30	173	44.81	1.15		
	35	151	39.17	1.30		
	37	142	36.72	1.40		
	42	125	32.40	1.60		
	47	111	28.73	1.80		
	56	94	24.42	2.1		
	61	86	22.27	2.3		
	70	75	19.31	2.7		
	75	70	18.05	2.9		
	87	60	15.60	3.3		
	103	51	13.25	3.7		
	115	46	11.83	4.0		
0.75	3.5	2030	255.71	1.45	MR97 MRF97	6P
	3.7	1920	241.25	1.55		
	4.2	1720	216.28	1.75		
	4.8	1500	289.74	2.0	MR97 MRF97	4P
	5.4	1330	255.71	2.3		
	5.7	1250	241.25	2.4		
	6.4	1120	216.28	2.7		
	7.4	970	186.30	3.1		
	8.1	880	170.02	3.4		
	4.2	1720	216.54	0.90	MR87 MRF87	6P
	4.4	1640	205.71	0.95		
	4.9	1450	181.77	1.05		
	5.8	1240	155.34	1.25		
	6.3	1130	142.41	1.35		

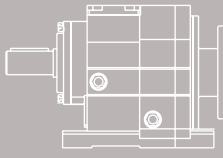
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.75	5.6	1280	246.54	1.20	MR87 MRF87	4P
	6.4	1120	216.54	1.40		
	6.7	1070	205.71	1.45		
	7.6	940	181.77	1.65		
	8.9	810	155.34	1.90		
	9.7	740	142.41	2.1		
	11	650	124.97	2.4		
	12	615	118.43	2.5		
	13	540	103.65	2.9		
	15	485	93.38	3.2	MR77 MRF77	4P
	8.3	860	166.59	0.95		
	9.5	755	145.67	1.10		
	10	720	138.39	1.15		
	11	630	121.42	1.30		
	13	535	102.99	1.55		
	15	485	92.97	1.70		
	17	425	81.80	1.95		
	18	400	77.24	2.0		
	21	340	65.77	2.4	MR67 MRF67	4P
	24	300	57.68	2.7		
	27	270	52.07	3.0		
	30	240	45.81	3.5		
	32	225	43.26	3.7		
	11	670	128.97	0.90		
	12	590	113.94	1.00		
	13	550	105.83	1.10		
	14	500	95.91	1.20		
	16	445	86.11	1.35	MR47 MRF47	4P
	19	385	74.17	1.55		
	20	360	69.75	1.65		
	23	320	61.26	1.90		
	24	295	56.89	2.0		
	27	270	51.56	2.2		
	30	240	46.29	2.5		
	20	355	68.54	0.85		
	21	335	64.21	0.90		
	24	295	56.73	1.00		
	26	275	52.69	1.10		
	29	250	47.75	1.20		
	32	225	42.87	1.35		
	37	192	36.93	1.55		
	40	180	34.73	1.65		

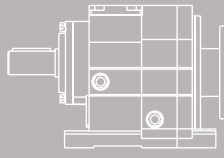
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.75	46	155	29.88	1.95	MR67 MRF67	4P
	52	139	26.70	2.2		
	58	122	23.59	2.5		
	52	139	26.74	2.2		
	59	121	23.28	2.5		
	63	113	21.81	2.7		
	72	100	19.27	3.0		
	77	93	17.89	3.1		
	85	84	16.22	3.3		
	29	250	48.08	0.80	MR37 MRF37	4P
	31	235	44.81	0.85		
	35	205	39.17	1.00		
	38	191	36.72	1.05		
	43	168	32.40	1.20		
	48	149	28.73	1.35		
	57	127	24.42	1.60		
	62	116	22.27	1.75		
	71	100	19.31	2.0		
	76	94	18.05	2.1		
	88	81	15.60	2.5		
	104	69	13.25	2.8		
	117	61	11.83	3.0		
	137	53	10.11	3.2		
	146	49	9.47	3.4		
1.1	3.6	2920	255.71	1.05	MR97 MRF97	6P
	3.8	2750	241.25	1.10		
	4.2	2470	216.28	1.20		
	4.9	2130	186.30	1.40		
	5.5	1920	255.71	1.55	MR97 MRF97	4P
	5.8	1810	241.25	1.65		
	6.5	1620	216.28	1.85		
	7.5	1400	186.30	2.2		
	8.2	1280	170.02	2.3		
	9.3	1130	150.78	2.7		
	11	950	126.75	3.2		
	12	870	116.48	3.4		
	6.5	1620	216.54	0.95	MR87 MRF87	4P
	6.8	150	205.71	1.00		
	7.7	1360	181.77	1.15		
	9.0	1170	155.34	1.35		
	9.8	1070	142.41	1.45		
	11	940	124.97	1.65		
	12	890	118.43	1.75		
	14	450	103.65	2.0		

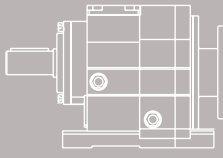
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
1.1	15	700	93.38	2.2	MR87 MRF87	4P
	17	615	81.92	2.5		
	19	545	72.57	2.8		
	22	480	63.68	3.2		
	23	455	60.35	3.4		
	27	395	52.82	3.9		
	12	910	121.42	0.90	MR77 MRF77	4P
	14	775	102.99	1.05		
	15	700	92.97	1.20		
	17	615	81.80	1.35		
	18	580	77.24	1.40		
	21	495	65.77	1.65		
	24	435	57.68	1.90		
	27	390	52.07	2.1		
	31	345	45.81	2.4		
	32	325	43.26	2.5		
	38	275	36.83	3.0		
	42	250	33.47	3.3	MR67 MRF67	4P
	16	645	86.11	0.95		
	19	555	74.17	1.10		
	20	525	69.75	1.15		
	23	460	61.26	1.30		
	25	425	56.89	1.40		
	27	385	51.89	1.55		
	30	345	46.29	1.75		
	35	300	39.88	1.95		
	37	280	37.50	2.0		
	43	240	32.27	2.2	MR47 MRF47	4P
	49	215	28.83	2.4		
	50	210	28.13	2.6		
	52	200	26.72	2.7		
	60	176	23.44	3.2		
	70	149	19.89	4.0	MR47 MRF47	4P
	29	360	47.75	0.85		
	33	320	42.87	0.95		
	38	275	36.93	1.10		
	40	260	34.73	1.15		
	47	225	29.88	1.35		
	52	200	26.7	1.5		
	59	177	23.59	1.70		
	60	175	23.28	1.70		
	64	164	21.81	1.85		

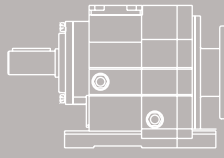
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
1.1	73	145	19.27	2.0	MR47 MRF47	4P
	78	134	17.89	2.2		
	86	122	16.22	2.3		
	96	109	14.56	2.4		
	112	94	12.54	2.7		
	119	89	11.79	2.8		
	138	76	10.15	3.0		
	154	68	9.07	3.2		
	43	245	32.4	0.8	MR37 MRF37	4P
	49	215	28.73	0.95		
	57	183	24.42	1.1		
	73	145	19.31	1.4		
	78	135	18.05	1.50		
	90	117	15.60	1.70		
	106	99	13.25	1.90		
	118	89	11.83	2.1		
	139	76	10.11	2.2		
	148	71	9.47	2.3		
1.5	176	60	7.97	2.6	MR97 MRF97	4P
	210	50	6.67	2.9		
	247	43	5.67	3.3		
	277	38	5.06	3.5		
	5.5	2600	255.71	1.15		
	5.8	2450	241.25	1.2		
	6.5	2200	216.28	1.35		
	7.6	1890	186.30	1.60		
	8.3	1730	170.02	1.75	MR87 MRF87	4P
	9.4	1530	150.78	1.95		
	11	1290	126.75	2.3		
	12	1180	116.48	2.5		
	14	1050	403.44	2.8		
	15	940	92.48	3.2		
	7.8	1850	181.77	0.85		
	9.1	1580	155.34	1		
	9.9	1450	142.41	1.05		
	11	1270	124.97	1.20		
	12	1200	118.43	1.30		
	14	1050	103.65	1.45		
	15	950	93.38	1.65		
	17	830	81.92	1.85		
	19	735	72.57	2.1		
	22	645	63.68	2.4		
	23	615	60.35	2.5		
	27	535	52.82	2.9		

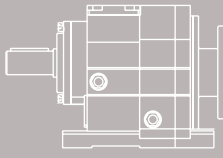
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
1.5	30	485	47.58	3.2	MR87 MRF87	4P
	34	425	41.74	3.7		
	38	375	36.84	4.1		
	15	940	92.97	0.85	MR77 MRF77	4P
	17	830	81.80	1.00		
	18	785	77.24	1.05		
	21	670	65.77	1.25		
	24	585	57.68	1.40		
	27	530	52.07	1.55		
	31	465	45.81	1.75		
	33	440	43.26	1.85		
	38	375	36.83	2.2	MR77 MRF77	4P
	42	340	33.47	2.4		
	49	295	29	2.8		
	56	255	25.23	3		
	60	240	23.37	3.5		
	66	220	21.43	3.8	MR67 MRF67	4P
	75	191	18.80	4.1		
	23	620	61.26	0.95		
	25	580	56.89	1.05		
	27	525	51.56	1.15		
	30	470	46.29	1.3		
	35	405	39.88	1.45		
	38	380	37.50	1.50		
	44	330	32.37	1.65	MR47 MRF47	4P
	49	295	28.83	1.80		
	50	285	28.13	1.90		
	53	270	26.72	2		
	60	240	23.44	2.3		
	71	200	19.89	3		
	79	182	17.95	3.2		
	38	375	36.93	0.80		
	41	355	34.73	0.85		
	47	305	29.88	1.00		
	53	270	26.77	1.10		
	60	240	23.59	1.25		
	61	235	23.28	1.25		
	65	220	21.81	1.35		
	73	196	19.27	1.50		
	79	182	17.89	1.60		
	87	165	16.22	1.65		
	97	148	14.56	1.80		

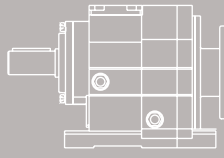
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
1.5	112	127	12.54	1.95	MR47 MRF47	4P
	120	120	11.79	2.0		
	139	103	10.15	2.2		
	155	92	9.07	2.4		
	176	81	8.01	2.5		
	182	79	7.76	2.1		
	203	71	6.96	2.2		
	235	61	6.00	2.6		
	250	57	5.64	2.7		
	291	49	4.85	3.0		
	325	44	4.34	3.3		
	368	39	3.83	3.7		
	73	196	19.31	1.00	MR37 MRF37	4P
	78	183	18.05	1.10		
	90	159	15.60	1.25		
	106	135	13.25	1.4		
	119	120	11.83	1.5		
	140	103	10.11	1.65		
	149	96	9.47	1.75		
	177	81	7.97	1.95		
	211	68	6.67	2.1		
	249	58	5.67	2.5		
	279	51	5.06	2.6		
	326	44	4.32	2.9		
	348	41	4.05	3.0		
	414	35	3.41	3.2		
	204	70	13.25	2.7	MR37 MRF37	2P
	228	63	11.83	2.9		
	267	54	10.11	3.2		
	285	50	9.47	3.3		
	339	42	7.97	3.7		
2.2	6.5	3220	216.28	0.95	MR97 MRF97	4P
	7.6	2780	186.3	1.1		
	8.3	2530	170.02	1.2		
	9.4	2250	150.78	1.35		
	11	1890	126.75	1.6		
	12	1740	116.48	1.75		
	14	1540	103.44	1.95		
	15	1380	92.48	2.2		
	17	1240	83.15	2.4		
	20	1080	72.17	2.8		
	22	970	65.21	3.1		
	24	890	59.92	3.4		
	27	795	53.21	3.8		
	30	710	47.58	4.2		

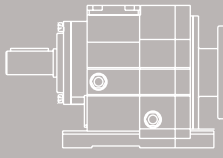
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
2.2	11	1860	124.97	0.85	MR87 MRF87	4P
	12	1760	118.43	0.9		
	14	1540	103.65	1		
	15	1390	93.38	1.1		
	17	1220	81.92	1.25		
	19	1080	72.57	1.45		
	22	950	63.68	1.65		
	23	900	60.35	1.7		
	27	785	52.82	1.95		
	30	710	47.58	2.2		
	34	620	41.74	2.5		
	38	550	36.84	2.8		
	43	485	32.66	3.2		
	41	515	34.4	2.9		
	45	470	31.4	3.3		
	51	415	27.84	3.7		
	60	350	23.4	4.4		
	66	320	21.51	4.7		
	21	980	65.77	0.85	MR77 MRF77	4P
	24	860	57.68	0.95		
	27	775	52.07	1.05		
	31	685	45.81	1.2		
	33	645	43.26	1.25		
	38	550	36.83	1.5		
	42	500	33.47	1.65		
	49	430	29	1.9		
	56	375	25.23	2.1		
	60	350	23.37	2.3		
	66	320	21.43	2.6		
	75	280	18.8	2.8	MR67 MRF67	4P
	79	265	17.82	2.9		
	90	230	15.6	3.2		
	100	210	14.05	3.4		
	35	595	39.88	1		
	38	560	37.5	1		
	44	480	32.27	1.1		
	49	430	28.83	1.2		
	60	350	23.44	1.6		
	71	295	19.89	2		
	79	270	17.95	2.2		
	89	235	15.79	2.4		
	95	220	14.91	2.5		

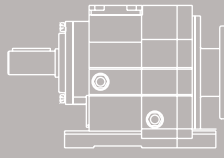
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
2.2	111	189	12.7	2.8	MR67 MRF67	4P
	122	172	11.54	2.9		
	141	149	10	3.2		
	162	130	8.7	3.4		
	181	116	7.79	3.3		
	73	285	19.27	1.05	MR47 MRF47	4P
	87	240	16.22	1.15		
	97	215	14.56	1.2		
	112	187	12.54	1.35		
	120	176	11.79	1.4		
	139	151	10.15	1.5		
	155	135	9.07	1.65		
	176	119	8.01	1.7		
	182	116	7.76	1.4		
	203	104	6.96	1.55		
	235	89	6	1.75		
	250	84	5.64	1.85		
	291	72	4.85	2.1		
	325	65	4.34	2.3		
	368	57	3.83	2.5		
	117	179	23.28	1.7	MR47 MRF47	2P
	125	168	21.81	1.8		
	142	148	19.27	2		
	153	138	17.89	2.1		
	168	125	16.22	2.2		
	187	112	14.56	2.4		
	218	97	12.54	2.6		
	231	91	11.79	2.7		
	269	78	10.15	2.9		
	301	70	9.07	3.2		
	341	62	8.01	3.3	MR37 MRF37	4P
	90	230	15.6	0.85		
	106	198	13.25	0.95		
	119	176	11.83	1.05		
	140	151	10.11	1.15		
	149	141	9.47	1.2		
	177	119	7.97	1.3		
	211	99	6.67	1.45		
	249	84	5.67	1.7		
	279	75	5.06	1.8		
	326	64	4.32	1.95		
	348	60	4.05	2		
	414	51	3.41	2.2		

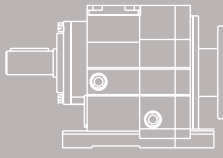
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
2.2	141	149	19.31	1.35	MR37 MRF37	2P
	151	139	18.05	1.45		
	175	120	15.6	1.65		
	206	102	13.25	1.85		
	231	91	11.83	2		
	270	78	10.11	2.2		
	288	73	9.47	2.3		
	342	61	7.97	2.5		
	409	51	6.67	2.8		
	482	44	5.67	3.3		
	540	39	5.06	3.5		
	632	33	4.32	3.8		
	675	31	4.05	3.9		
	801	26	3.41	4.3		
3	9.3	3090	150.78	0.95	MR97 MRF97	4P
	11	2590	126.75	1.15		
	12	2380	116.48	1.25		
	14	2120	103.44	1.40		
	15	1890	92.48	1.60		
	17	1700	83.15	1.75		
	19	1480	72.17	2.0		
	21	1330	65.21	2.2		
	23	1230	59.92	2.5		
	26	1090	53.21	2.8		
	29	970	47.58	3.1		
	33	880	42.78	3.4		
	38	760	37.13	4		
	42	680	33.25	4.2		
	15	1910	93.38	0.8	MR87 MRF87	4P
	17	1680	81.92	0.9		
	19	1490	72.57	1.05		
	22	1300	63.68	1.20		
	23	1230	60.35	1.25		
	27	1080	52.82	1.45		
	29	970	47.58	1.60		
	34	850	41.74	1.80		
	38	755	36.84	2.1		
	43	670	32.66	2.3		
	50	570	27.88	2.6		
	41	705	34.40	2.1		
	45	640	31.40	2.4		
	50	570	27.84	2.7		

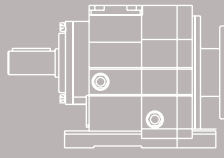
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
3	60	480	23.4	3.2	MR97 MRF97	4P
	65	440	21.51	3.4		
	73	390	19.10	3.7		
	82	350	17.08	4.0		
	91	315	15.35	4.3		
	31	940	45.81	0.85	MR77 MRF77	4P
	32	890	43.26	0.95		
	38	755	36.83	1.10		
	42	685	33.47	1.20		
	48	595	29.00	1.40		
	55	515	25.23	1.50		
	60	480	23.37	1.70		
	65	440	21.43	1.85		
	74	385	18.80	2.0		
	79	365	17.82	2.1		
	90	320	15.60	2.3		
	100	290	14.05	2.5		
	114	250	12.33	2.7		
	129	225	10.88	3.0		
	145	197	9.64	3.2		
	163	176	8.59	3.6		
	181	158	7.74	3.8		
	206	139	6.79	4.2		
	60	480	23.44	1.15	MR67 MRF67	4P
	70	405	19.89	1.45		
	78	365	17.95	1.60		
	89	325	15.79	1.75		
	94	305	14.91	1.80		
	110	260	12.70	2.0		
	121	235	11.54	2.1	MR47 MRF47	4P
	140	205	10	2.3		
	86	330	16.22	0.85		
	96	300	14.56	0.90		
	112	255	12.54	0.95		
	119	240	11.79	1.00		
	138	210	10.15	1.10		
	154	186	9.07	1.20		
	175	164	8.01	1.25		
	181	159	7.76	1.05		
	201	143	6.96	1.1		
	233	123	6	1.25		
	248	115	5.64	1.35		
	288	99	4.85	1.5		

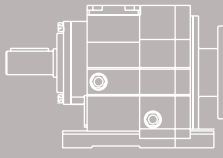
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
3	323	89	4.34	1.65	MR47 MRF47	4P
	365	78	3.83	1.85		
	237	121	11.79	2	MR47 MRF47	2P
	276	104	10.15	2.2		
	309	93	9.07	2.4		
	349	82	8.01	2.5		
	361	79	7.76	2.1		
	402	71	6.96	2.2		
	467	61	6.00	2.5		
	496	58	5.64	2.7		
	577	50	4.85	3.0		
	646	44	4.34	3.3		
	731	39	3.83	3.7	MR37 MRF37	4P
	139	205	10.11	0.8		
	148	194	9.47	0.85		
	176	163	7.97	0.95		
	210	137	6.67	1.05		
	247	116	5.67	1.25		
	277	104	5.06	1.30		
	324	88	4.32	1.45		
	346	83	4.05	1.45		
	411	70	3.41	1.6		
	277	103	10.11	1.65	MR37 MRF37	2P
	296	97	9.47	1.7		
	351	82	7.97	1.90		
	420	68	6.67	2.1		
	494	58	5.67	2.5		
	553	52	5.06	2.6		
	648	44	4.32	2.8		
	692	41	4.05	3		
4	821	35	3.41	3.2	MR97 MRF97	4P
	12	3130	116.48	0.95		
	14	2780	103.44	1.1		
	15	2490	92.48	1.2		
	17	2240	83.15	1.35		
	20	1940	72.17	1.55		
	22	1750	65.21	1.70		
	24	1610	59.92	1.85		
	27	1430	53.21	2.1		
	30	1280	47.58	2.3		
	33	1150	42.78	2.6		
	38	1000	37.13	3.0		

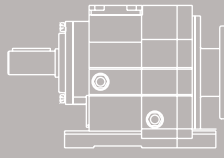
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
4	43	890	33.25	3.2	MR97 MRF97	4P
	44	860	32.05	3.0		
	52	730	27.19	3.5		
	57	675	25.03	4.2		
	63	600	22.37	4.5		
	71	540	20.14	4.8		
	22	1710	63.68	0.9	MR87 MRF87	4P
	24	1620	60.35	0.95		
	27	1420	52.82	1.1		
	30	1280	47.58	1.2		
	34	1120	41.74	1.4		
	39	990	36.84	1.55		
	43	880	32.66	1.75		
	51	750	27.88	2		
	41	930	34.4	1.6		
	45	840	31.4	1.85		
	51	750	27.84	2.1		
	61	630	23.4	2.5		
	66	580	21.51	2.6		
	74	515	19.1	2.8		
	83	460	17.08	3		
	92	415	15.35	3.2		
	107	360	13.33	3.6		
	119	320	11.93	3.8		
	39	990	36.83	0.85	MR77 MRF77	4P
	42	900	33.47	0.9		
	49	780	29	1.05		
	56	680	25.23	1.15		
	61	630	23.37	1.3		
	66	575	21.43	1.4		
	76	505	18.8	1.55		
	80	480	17.82	1.65		
	91	420	15.6	1.75		
	101	380	14.05	1.9		
	115	330	12.33	2.1		
	131	295	10.88	2.3		
	147	260	9.64	2.4		
	165	230	8.59	2.7		
	183	210	7.74	2.9		
	209	183	6.79	3.2		
	237	161	5.99	3.3		
	267	143	5.31	3.6		

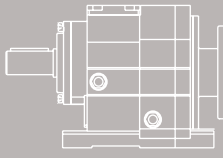
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
4	71	535	19.89	1.1	MR67 MRF67	4P
	79	485	17.95	1.2		
	90	425	15.79	1.3		
	95	400	14.91	1.35		
	112	340	12.7	1.5		
	123	310	11.54	1.6		
	142	270	10	1.75		
	163	235	8.7	1.9		
	182	210	7.79	1.8		
	193	198	7.36	1.85		
	227	169	6.27	1.95		
	249	153	5.7	2		
	288	133	4.93	2.2		
	331	116	4.29	2.3		
	140	275	10.15	0.85	MR47 MRF47	4P
	157	245	9.07	0.9		
	177	215	8.01	0.95		
	204	187	6.96	0.85		
	237	161	6	0.95		
	252	152	5.64	1		
	293	131	4.85	1.15		
	327	117	4.34	1.25		
	371	103	3.83	1.4		
	176	215	16.22	1.25	MR47 MRF47	2P
	196	195	14.56	1.35		
	228	168	12.54	1.5		
	242	158	11.79	1.55		
	282	136	10.15	1.7		
	315	121	9.07	1.8	MR47 MRF47	2P
	357	107	8.01	1.9		
	369	104	7.76	1.55		
	411	93	6.96	1.7		
	477	80	6	1.95		
	507	75	5.64	2.1		
	589	65	4.85	2.3		
	660	58	4.34	2.5		
	746	51	3.83	2.8		
5.5	17	3050	83.15	1	MR97 MRF97	4P
	20	2650	72.17	1.15		
	22	2390	65.21	1.25		
	24	2200	59.92	1.35		
	27	1950	53.21	1.55		

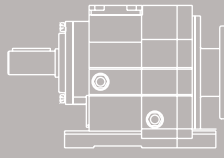
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
5.5	30	1750	47.58	1.7	MR97 MRF97	4P
	33	1570	42.78	1.9		
	39	1360	37.13	2.2		
	43	1220	33.25	2.4		
	52	1010	27.58	2.6		
	45	1180	32.05	2.2		
	53	1000	27.19	2.6		
	57	920	25.03	3.1		
	64	820	22.37	3.3		
	71	740	20.14	3.5		
	78	670	18.24	3.7		
	88	595	16.17	4		
	30	1750	47.58	0.9	MR87 MRF87	4P
	34	1530	41.74	1		
	39	1350	36.84	1.15		
	44	1200	32.66	1.3		
	51	1020	27.88	1.45		
	51	1020	27.84	1.5		
	61	860	23.4	1.8		
	66	790	21.51	1.9		
	75	700	19.1	2		
	84	625	17.08	2.2		
	93	565	15.35	2.4		
	107	490	13.33	2.6		
	120	440	11.93	2.8		
	144	365	9.9	3.2		
	156	335	9.14	3.6		
	174	300	8.22	3.8		
	200	260	7.13	4.1		
	76	690	18.8	1.15	MR77 MRF77	4P
	80	655	17.82	1.2		
	92	575	15.6	1.3		
	102	515	14.05	1.4		
	116	455	12.33	1.5		
	131	400	10.88	1.65		
	148	355	9.64	1.8		
	166	315	8.59	2		
	185	285	7.74	2.2		
	211	250	6.79	2.3		
	239	220	5.99	2.5		
	269	195	5.31	2.6		
	91	580	15.79	0.95	MR67 MRF67	4P
	96	550	14.91	1		

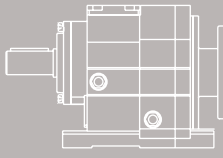
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
5.5	113	465	12.7	1.1	MR67 MRF67	4P
	124	425	11.54	1.2		
	143	365	10	1.3		
	164	320	8.7	1.4		
	183	285	7.79	1.35		
	194	270	7.36	1.35	MR67 MRF67	4P
	228	230	6.27	1.45		
	251	210	5.70	1.50		
	290	181	4.93	1.60		
	333	158	4.29	1.7		
	331	159	8.7	2.8	MR67 MRF67	6P
	369	142	7.79	2.7		
	391	134	7.36	2.8		
	460	114	6.27	2.9		
	506	104	5.7	3		
	584	90	4.93	3.2	MR47 MRF47	4P
	671	78	4.29	3.5		
	295	178	4.85	0.85		
	330	159	4.34	0.90		
	373	141	3.83	1.00		
	230	230	12.54	1.1	MR47 MRF47	2P
	244	215	11.79	1.15		
	284	185	10.15	1.25		
	318	165	9.07	1.35		
	359	146	8.01	1.40		
	480	109	6.00	1.45		
	511	103	5.64	1.5		
	593	89	4.85	1.70		
	664	79	4.34	1.85		
	752	70	3.83	2.1		
7.5	24	3000	59.92	1	MR97 MRF97	4P
	27	2670	53.21	1.15		
	30	2380	47.58	1.25		
	33	2140	42.78	1.40		
	39	1860	37.13	1.60		
	43	1670	33.25	1.75		
	52	1380	27.58	1.95		
	45	1610	32.05	1.6		
	53	1360	27.19	1.9		
	57	1250	25.03	2.3		
	64	1120	22.37	2.4		
	71	1010	20.14	2.6		
	78	910	18.24	2.7		

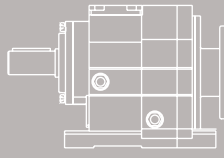
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
7.5	39	1840	36.84	0.85	MR87 MRF87	4P
	44	1640	32.66	0.95		
	51	1400	27.88	1.05		
	51	1390	27.84	1.10		
	61	1170	23.40	1.30		
	66	1080	21.51			
	75	960	19.10	1.50		
	84	860	17.08	1.65		
	93	770	15.35	1.75		
	107	670	13.33	1.90		
	120	600	11.93	2.1		
	144	495	9.90	2.4		
	156	460	9.14	2.6		
	174	410	8.22	2.8		
	200	355	7.13	3.0		
	224	320	6.39	3.2	MR77 MRF77	4P
	270	265	5.3	3.4		
	76	940	18.8	0.85		
	80	890	17.82	0.85		
	92	780	15.60	0.95		
	102	705	14.05	1.00		
	116	615	12.33	1.10		
	131	545	10.88	1.20		
	148	485	9.64	1.30	MR67 MRF67	4P
	166	430	8.59	1.45		
	185	390	7.74	1.55		
	211	340	6.79	1.70		
	239	300	5.99	1.8		
	269	265	5.31	1.9		
	113	635	12.70	0.80		
	124	580	11.54	0.85		
	143	500	10.00	0.95		
	164	435	8.70	1.00		
11	183	390	7.79	0.95	MR97 MRF97	4P
	194	370	7.36	1.00		
	228	315	6.27	1.05		
	251	285	5.70	1.10		
	290	245	4.93	1.15		
	333	215	4.29	1.25		
	34	3120	42.78	0.95	MR97 MRF97	4P
	39	2710	37.13	1.10		
	43	2430	33.25	1.20		
	52	2010	27.58	1.35		

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
11	58	1830	25.03	1.55	MR97 MRF97	4P
	64	1630	22.37	1.65		
	71	1470	20.14	1.8		
	79	1330	18.24	1.90		
	89	1180	16.17	2.0		
	98	1070	14.62	2.2		
	116	900	12.39	2.4		
	133	790	10.83	2.7		
	155	675	9.29	3		
	172	610	8.39	3.3		
	202	520	7.12	3.8		
	232	455	6.21	4.2	MR87 MRF87	4P
	67	1570	21.51	0.95		
	75	1390	19.10	1.05		
	84	1250	17.08	1.10		
	94	1120	15.35	1.2		
	108	970	13.33	1.3		
	121	870	11.93	1.40		
	145	720	9.90	1.65		
	158	665	9.14	1.80		
	175	600	8.22	1.95		
15	202	520	7.13	2.1	MR77 MRF77	4P
	225	465	6.39	2.2		
	272	385	5.3	2.3		
	132	795	10.88	0.85		
	149	705	9.64	0.9		
	186	565	7.74	1.10		
	212	495	6.79	1.15		
	240	435	5.99	1.25	MR97 MRF97	4P
	271	390	5.31	1.3		
	53	2710	27.58	1		
	58	2460	25.03	1.15		
	65	2200	22.37	1.25		
	72	1980	20.14	1.30		
	80	1790	18.24	1.40		
	90	1590	16.17	1.50		
	100	1430	14.62	1.60		
	118	1220	12.39	1.8		
	135	1060	10.83	1.95		
	157	910	9.29	2.2		
	174	820	8.39	2.5		
	205	700	7.12	2.9		

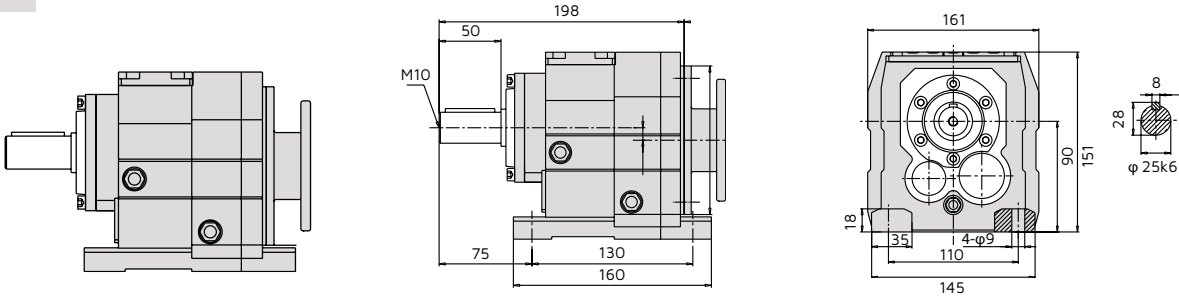
1.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
15	85	1680	17.08	0.85	MR87 MRF87	4P
	95	1510	15.35	0.9		
	110	1310	13.33	1.00		
	122	1170	11.93	1.05		
	147	970	9.90	1.20		
	160	900	9.14	1.35		
	178	810	8.22	1.45		
	205	700	7.13	1.55		
	229	625	6.39	1.65		
	275	520	5.3	1.75		
18.5	73	2430	20.14	1.05	MR97 MRF97	4P
	80	2200	18.24	1.15		
	91	1950	16.17	1.25		
	100	1760	14.62	1.30		
	118	1490	12.39	1.45		
	135	1310	10.83	1.6		
	158	1120	9.29	1.8		
	175	1010	8.39	2		
	206	860	7.12	2.3		
	236	750	6.21	2.5		
	282	625	5.2	2.8		
	326	545	4.5	3	MR87 MRF87	4P
	110	1610	13.33	0.8		
	123	1440	11.93	0.85		
	148	1190	9.9	1		
	160	1100	9.14	1.1		
	178	990	8.22	1.15		
	205	860	7.13	1.25		
	229	770	6.39	1.3		
	276	640	5.3	1.4		

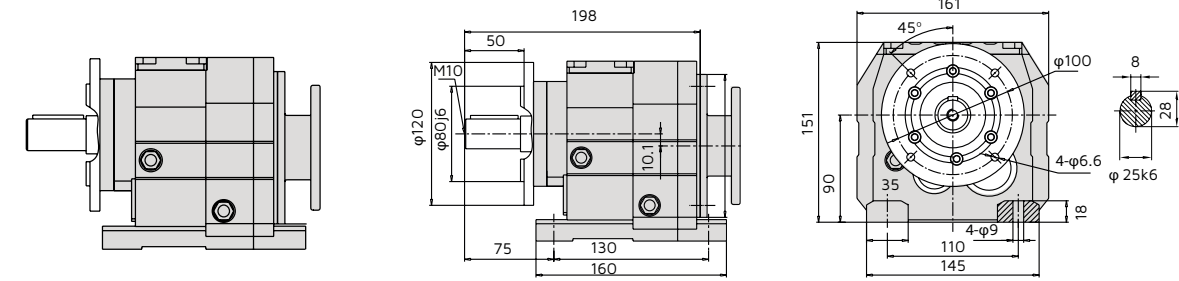
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
22	73	2890	20.14	0.9	MR97 MRF97	4P
	80	2620	18.24	0.95		
	91	2320	16.17	1.05		
	100	2100	14.62	1.1		
	118	1780	12.39	1.25		
	135	1550	10.83	1.35		
	158	1330	9.29	1.5		
	175	1200	8.39	1.7		
	206	1020	7.12	1.95		
	236	890	6.21	2.1		
	282	745	5.2	2.4		
	326	645	4.5	2.5	MR87 MRF87	4P
	148	1420	9.9	0.85		
	160	1310	9.14	0.90		
	178	1180	8.22	1.00		
	205	1020	7.13	1.05		
30	229	920	6.39	1.10	MR97 MRF97	4P
	276	760	5.30	1.20		
	101	2850	14.62	0.80		
	119	2420	12.39	0.90		
	136	2110	10.83	1.00		
	158	1810	9.29	1.10		
	175	1640	8.39	1.25		
	207	1390	7.12	1.45		
	237	1210	6.21	1.55		
	283	1010	5.20	1.75		
	327	880	4.50	1.85		

1.6. DIMENSIONES MR + MRF

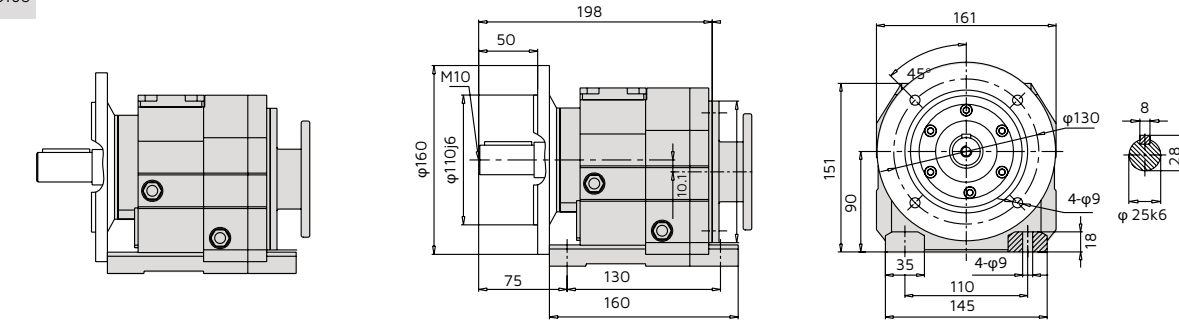
MR37



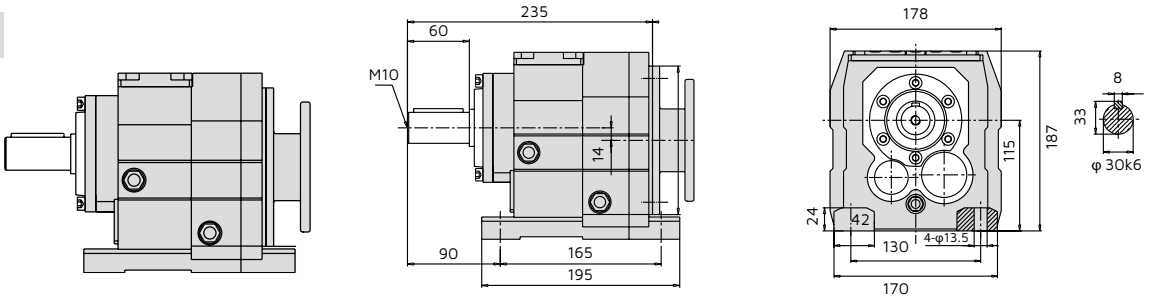
MRF37 $\varnothing 120$



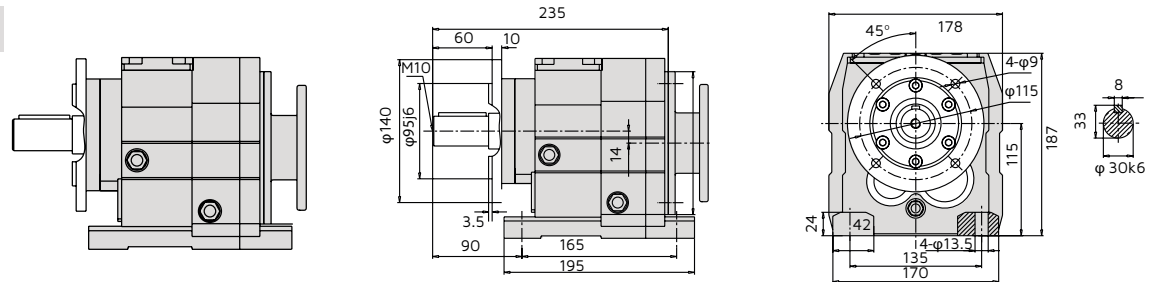
MRF37 $\varnothing 160$



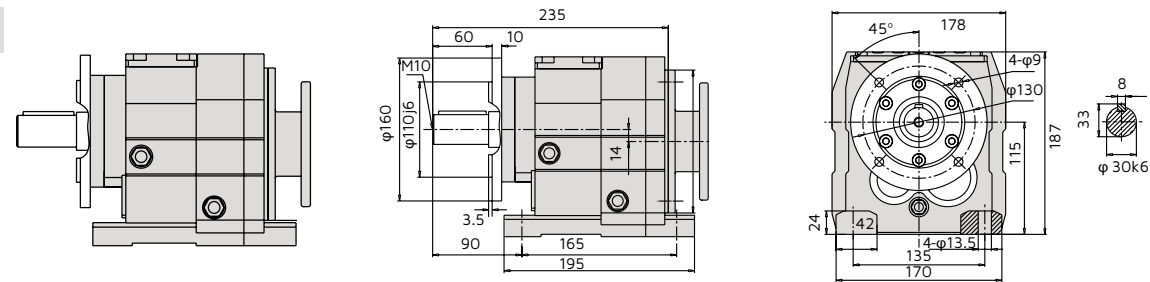
MR47



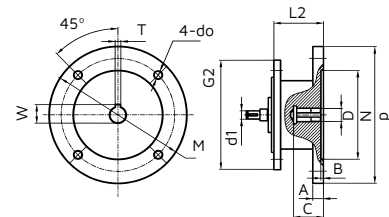
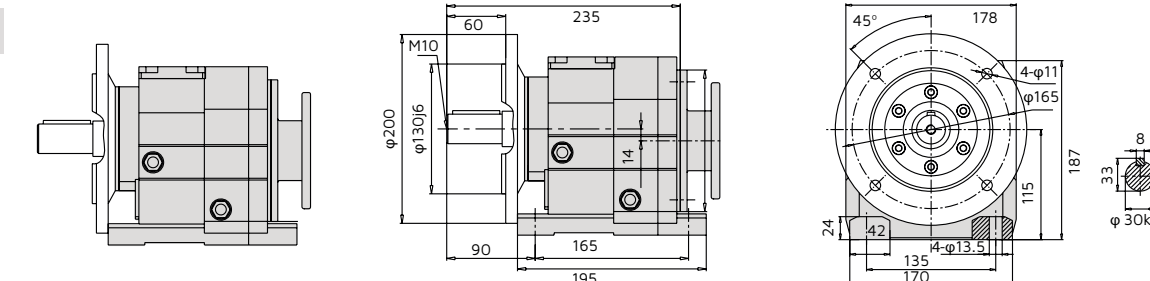
MRF47 $\varnothing 140$



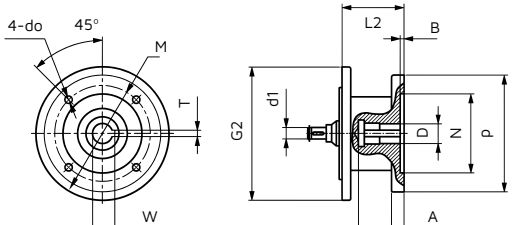
MRF47 $\varnothing 160$



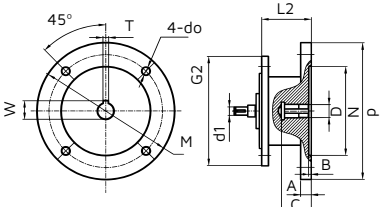
MRF47 $\varnothing 200$



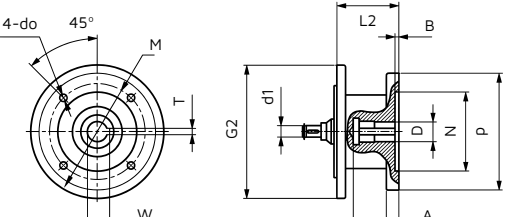
63B5-200B5



63B14-132B14



63B5-200B5



63B14-132B14

PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B5	61.5	95	115	140	10	14	4	≥24	11	4	12.8
71B5	61.5	110	130	160	10	11	4	≥31	14	5	16.3
80B5	80	130	160	200	12	12	4	≥41	19	6	21.9
90B5	80	130	160	200	12	12	4	≥51	24	8	27.3
100B5	98	180	215	250	14	17	4.5	≥61	28	8	31.3

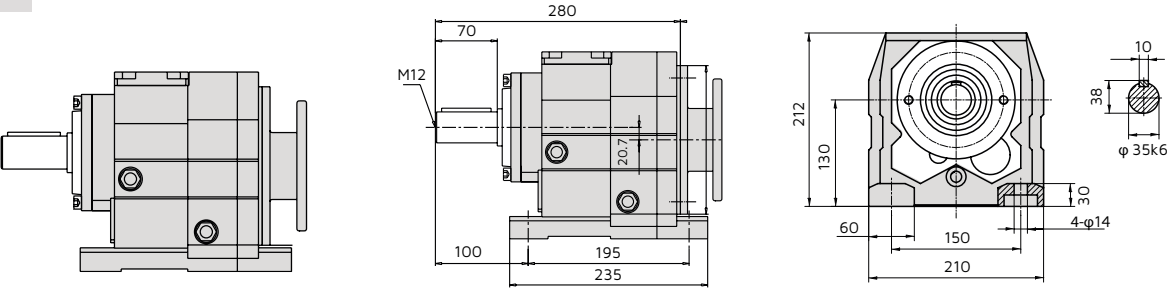
PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B14	50	60	75	90	4- $\varnothing 6$	9	3.5	30.5	11	4	12.8
71B14	54	70	85	105	4- $\varnothing 7$	10	3.5	33.5	14	5	16.3
80B14	69	80	100	120	4- $\varnothing 7$	12	4.5	44.5	19	6	21.9
90B14	69	95	115	140	4- $\varnothing 9$	12	4.5	54.5	24	8	27.3
100B14	81	110	130	160	4- $\varnothing 9$	15	6	66	28	8	31.3

PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B5	56	95	115	140	10	14	4	≥24	11	4	12.8
71B5	56	110	130	160	10	13	4	≥31	14	5	16.3
80B5	74.5	130	160	200	12	15	4	≥41	19	6	21.9
90B5	74.5	130	160	200	12	15	4	≥51	24	8	27.3
100B5	90.5	180	215	250	14	17	4.5	≥61	28	8	31.3
112B5	90.5	180	215	250	14	17	4.5	≥81	28	8	31.3
132B5	123	230	265	300	14	18	6	≥111	38	10	41.3

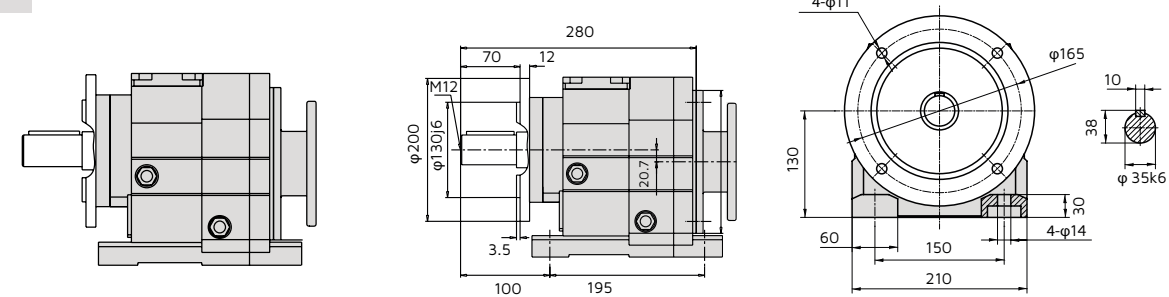
PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B14	50	60	75	90	4- $\varnothing 6$	9	3.5	30.5	11	4	12.8
71B14	54	70	85	105	4- $\varnothing 7$	10	3.5	33.5	14	5	16.3
80B14	69	80	100	120	4- $\varnothing 7$	12	4.5	44.5	19	6	21.9
90B14	69	95	115	140	4- $\varnothing 9$	12	4.5	58.5	24	8	27.3
100B14	81	110	130	160	4- $\varnothing 9$	15	6	66	28	8	31.3
112B14	81	110	130	160	4- $\varnothing 9$	15	6	66	28	8	31.3
132B14	93	130	165	200	4- $\varnothing 11$	16	5	85	38	10	41.3

1.6. DIMENSIONES MR + MRF

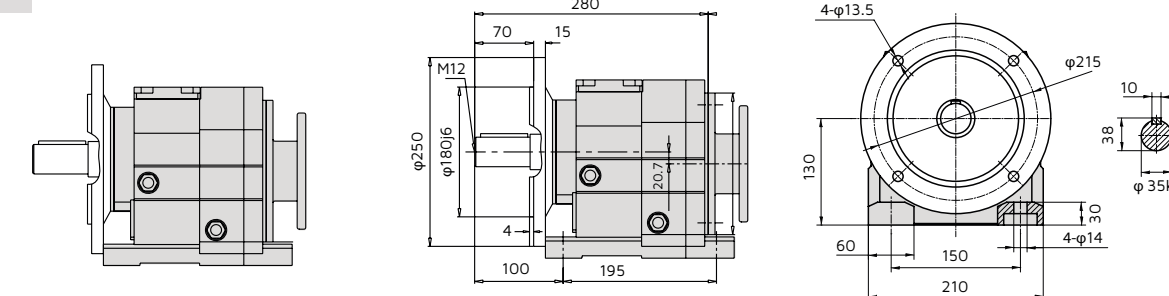
MR67



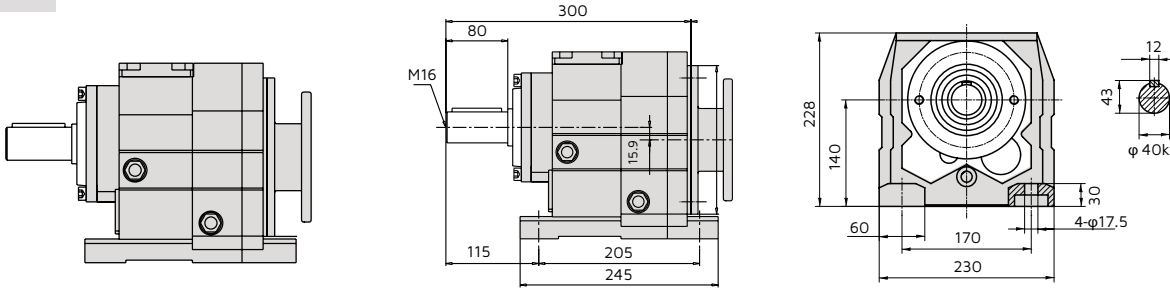
MRF67 φ200



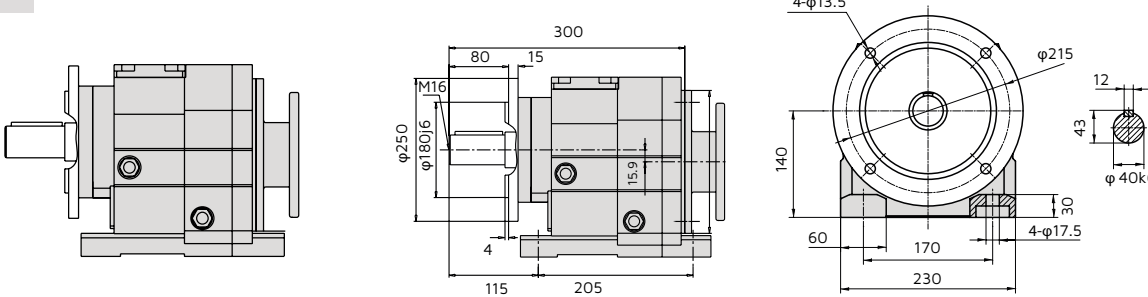
MRF67 φ250



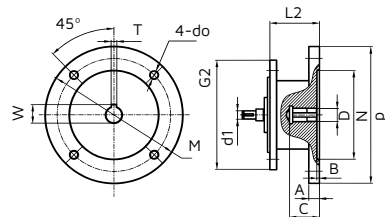
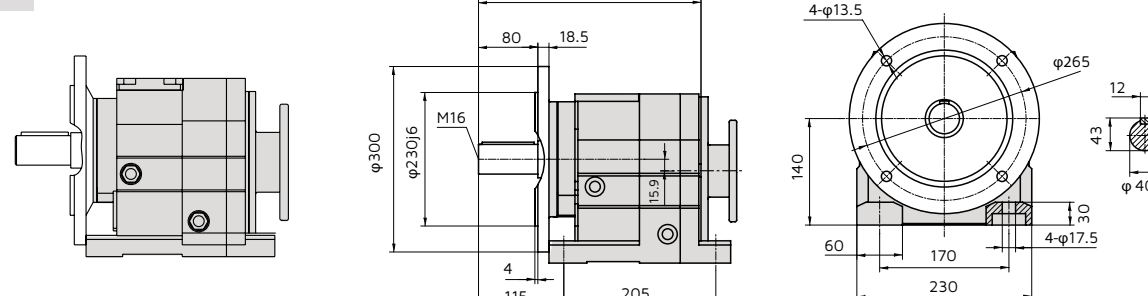
MR77



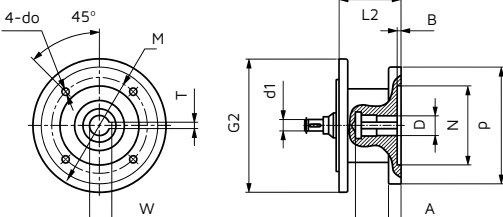
MRF77 φ250



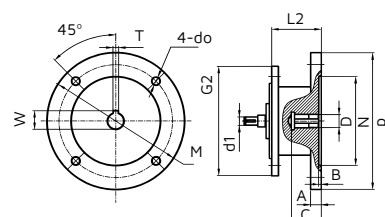
MRF77 φ300



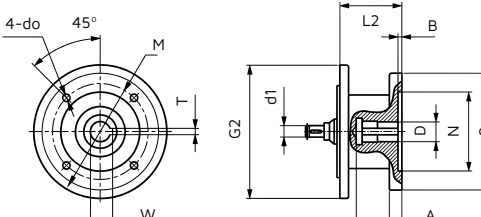
63B5-200B5



63B14-132B14



63B5-200B5



63B14-132B14

PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B5	56	95	115	140	10	14	4	≥24	11	4	12.8
71B5	56	110	130	160	10	13	4	≥31	14	5	16.3
80B5	74.5	130	160	200	12	15	4	≥41	19	6	21.9
90B5	74.5	130	160	200	12	15	4	≥51	24	8	27.3
100B5	90.5	180	215	250	14	17	4.5	≥61	28	8	31.3
112B5	90.5	180	215	250	14	17	4.5	≥81	28	8	31.3
132B5	123	230	265	300	14	18	6	≥111	38	10	41.3

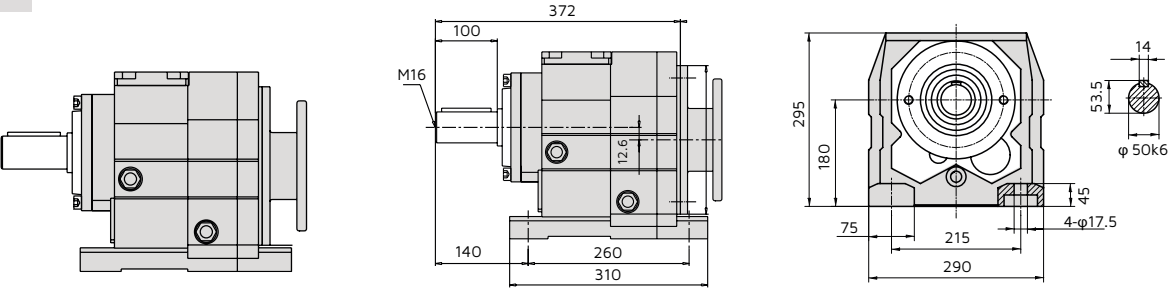
PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B14	50	60	75	90	4-φ6	9	3.5	30.5	11	4	12.8
71B14	54	70	85	105	4-φ7	10	3.5	33.5	14	5	16.3
80B14	69	80	100	120	4-φ7	12	4.5	44.5	19	6	21.9
90B14	69	95	115	140	4-φ9	12	4.5	58.5	24	8	27.3
100B14	81	110	130	160	4-φ9	15	6	66	28	8	31.3
112B14	81	110	130	160	4-φ9	15	6	66	28	8	31.3
132B14	93	130	165	200	4-φ11	16	5	85	38	10	41.3

PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B5	50	95	115	140	10	14	4	≥24	11	4	12.8
71B5	50	110	130	160	10	10	4	≥31	14	5	16.3
80B5	68.5	130	160	200	12	16	4	≥41	19	6	21.9
90B5	68.5	130	160	200	12	16	4	≥51	24	8	27.3
100B5	82.5	180	215	250	15	17	4.5	≥61	28	8	31.3
112B5	82.5	180	215	250	15	17	4.5	≥81	28	8	31.3
132B5	111	230	265	300	15	17	6	≥111	38	10	41.3
160B5	152.5	250	300	350	19	24	6	≥111	42	12	45.3

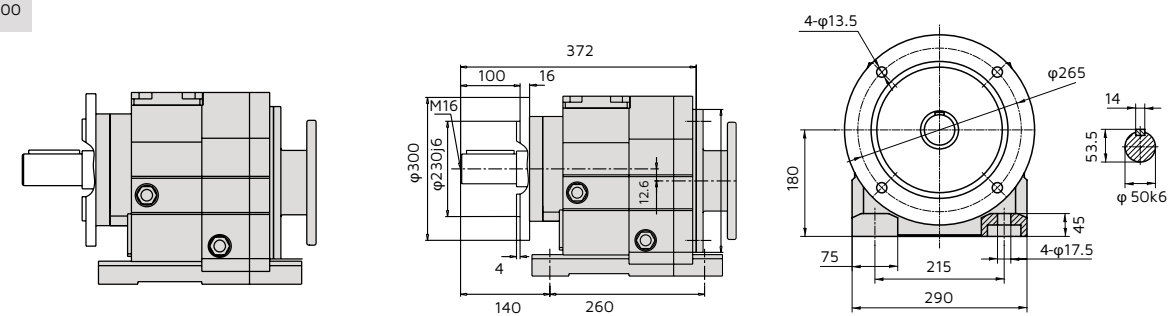
PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B14	54	60	75	90	4-φ6	9	3.5	34	11	4	12.8
71B14	54	70	85	105	4-φ7	10	3.5	33.5	14	5	16.3
80B14	69	80	100	120	4-φ7	12	4.5	59.5	19	6	21.9
90B14	69	95	115	140	4-φ9	12	4.5	58.5	24	8	27.3
100B14	81	110	130	160	4-φ9	15	5	66	28	8	31.3
112B14	81	110	130	160	4-φ9	15	5	66	28	8	31.3
132B14	93	130	165	200	4-φ11	16	5	85	38	10	41.3

1.6. DIMENSIONES MR + MRF

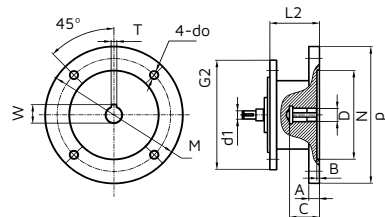
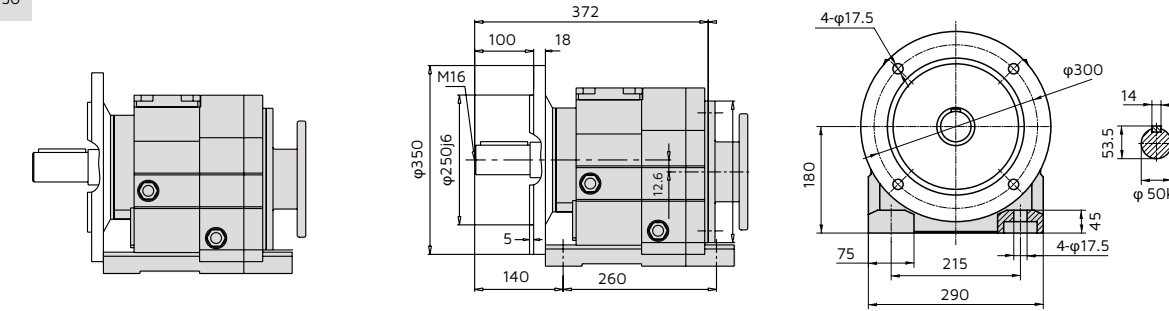
MR87



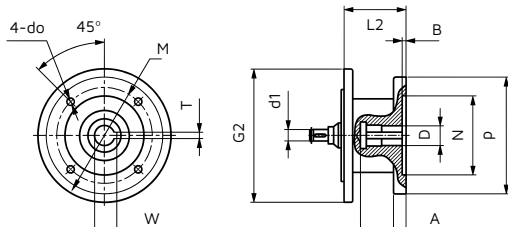
MRF87 φ300



MRF87 φ350



63B5-200B5

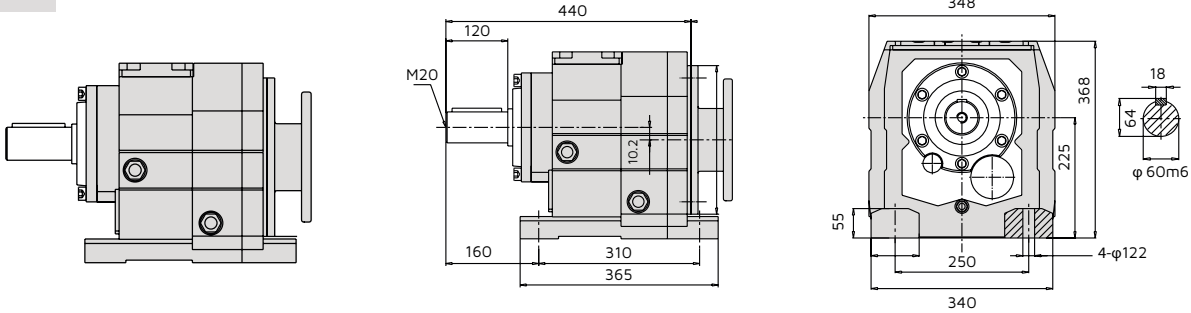


63B14-132B14

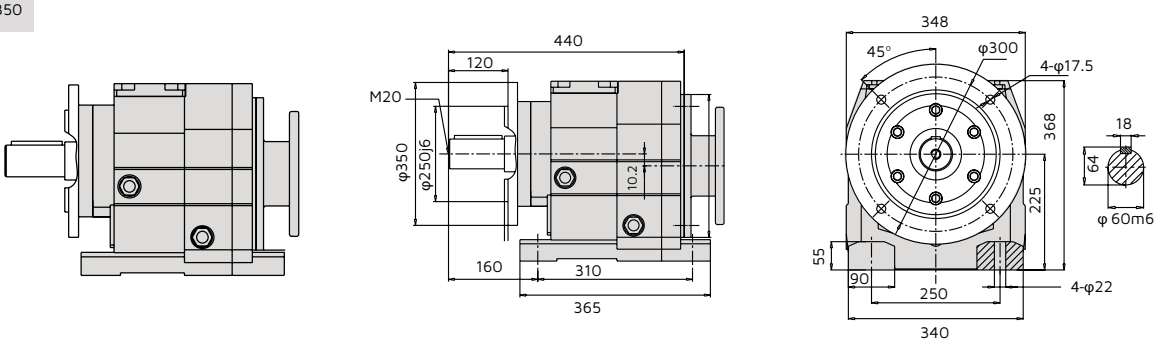
PAM	L2	N	M	P	do	A	N	<C	D	T	W
80B5	63.5	130	160	200	12	16	4	≥41	19	6	21.9
90B5	63.5	130	160	200	12	18	4	≥51	24	8	27.3
100B5	78.5	180	215	250	15	18	4.5	≥61	28	8	31.3
112B5	106	180	215	250	15	18	4.5	≥81	28	8	31.3
132B5	106	230	265	300	15	20	6	≥111	38	10	41.3
160B5	147.5	250	300	350	19	23	6	≥111	42	12	45.3
180B5	147.5	250	300	350	19	23	6	≥111	48	14	51.8

PAM	L2	N	M	P	do	A	N	<C	D	T	W
80B14	69	80	100	120	4-φ7	12	4.5	44.5	19	6	21.9
90B14	69	95	115	140	4-φ9	12	4.5	58.5	24	8	27.3
100B14	81	110	130	160	4-φ9	15	6	66	28	8	31.3
112B14	81	110	130	160	4-φ9	15	6	66	28	8	31.3
132B14	92	130	165	200	4-φ11	16	5	86	38	10	41.3

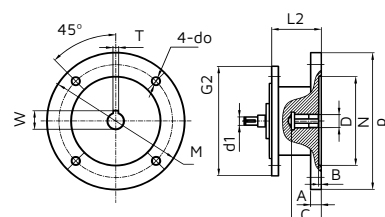
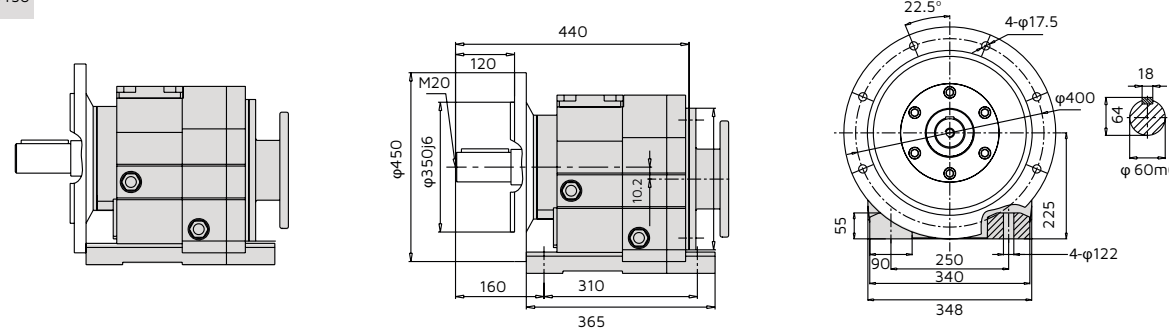
MR97



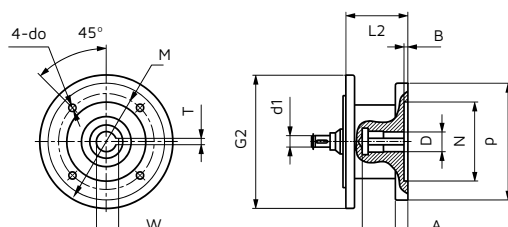
MRF97 φ350



MRF97 φ450



63B5-200B5



63B14-132B14

PAM	L2	N	M	P	do	A	N	<C	D	T	W
80B5	54.5	130	160	200	12	13	4	≥41	19	6	21.9
90B5	54.5	130	160	200	12	13	4	≥51	24	8	27.3
100B5	72.5	180	215	250	15	14	4.5	≥61	28	8	31.3
112B5	72.5	180	215	250	15	14	4.5	≥81	28	8	31.3
132B5	101	230	265	300	15	18	6	≥111	38	10	41.3
160B5	142.5	250	300	350	19	23	6	≥111	42	12	45.3
180B5	142.5	250	300	350	19	23	6	≥111	48	14	51.8
200B5	174.5	300	350	400	19	26	6	≥111	55	16	59.3

PAM	L2	N	M	P	do	A	N	<C	D	T	W
80B14	69	80	100	120	4-φ7	12	4.5	45	19	6	21.9
90B14	69	95	115	140	4-φ9	12	4.5	53.5	24	8	27.3
100B14	81	110	130	160	4-φ9	15	5	66	28	8	31.3
112B14	81	110	130	160	4-φ9	15	5	66	28	8	31.3
132B14	92	130	165	200	4-φ11	16	5	85	38	10	41.3

1.7. MR37-MR97 Posición de montaje

M1 M2
M3 M4

M6

M5

1.8. MRF37-MRF97 Posición de montaje

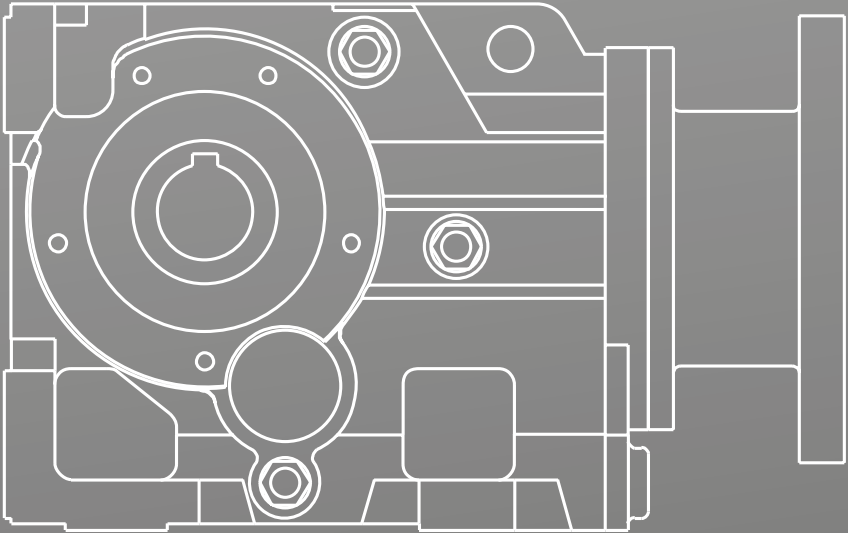
M1 M2
M3 M4

M6

M5

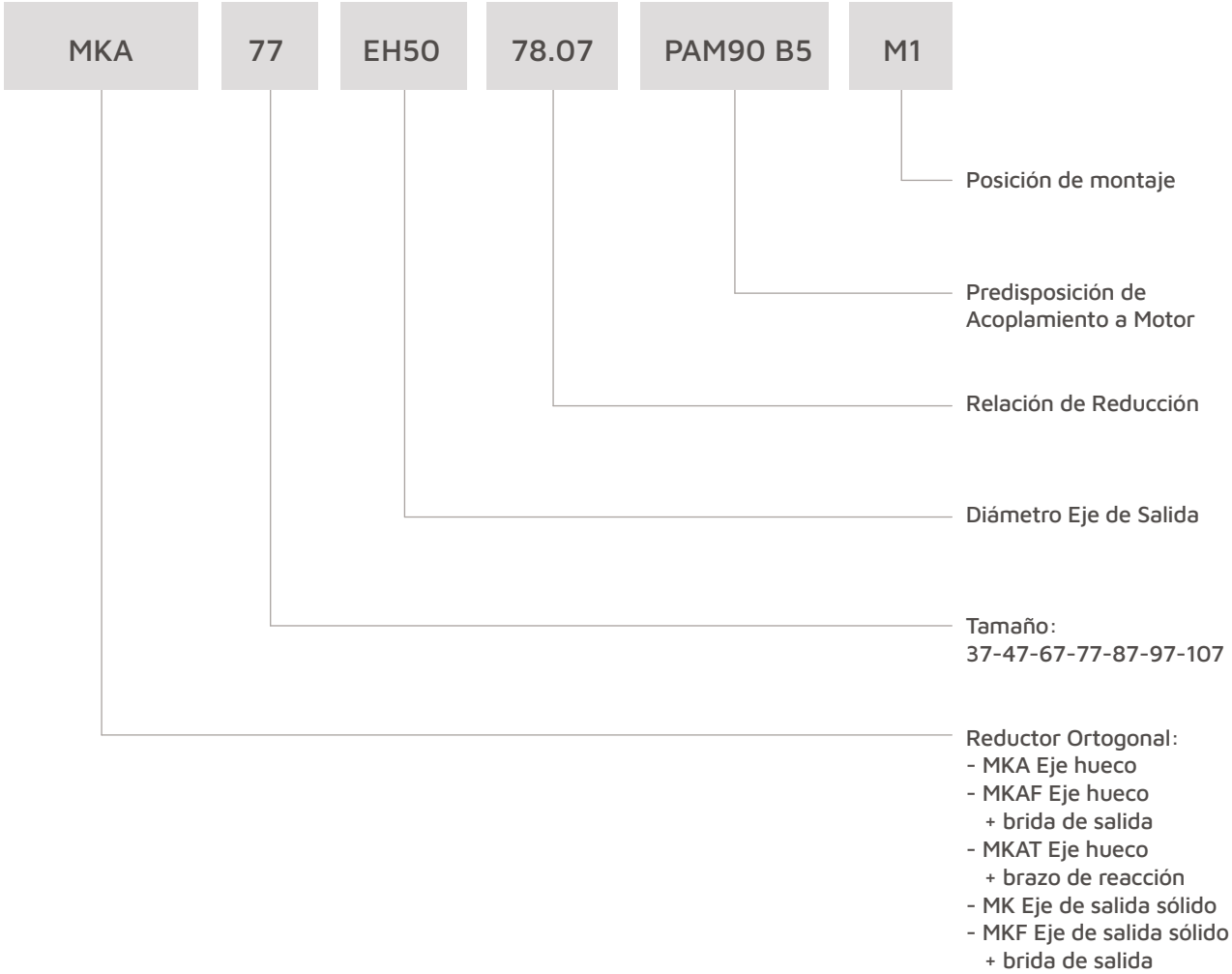
Tabla de capacidad de aceite de la serie MR (Unidad:L)						
Modelo	Posición de montaje					
	M1	M2	M3	M4	M5	M6
MR37	0.8	0.8	1.0	1.1	0.8	1.0
MR47	1.0	1.6	1.5	1.7	1.5	1.5
MR67	2.0	2.4	2.8	3.7	2.2	2.2
MR77	2.2	3.8	3.6	4.1	3.4	3.4
MR87	5.6	7.8	7.2	8.3	7.5	7.5
MR97	4.5	10.9	10.7	12.5	10.3	10.6

02

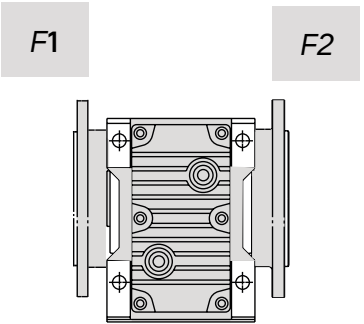


MKA SERIES

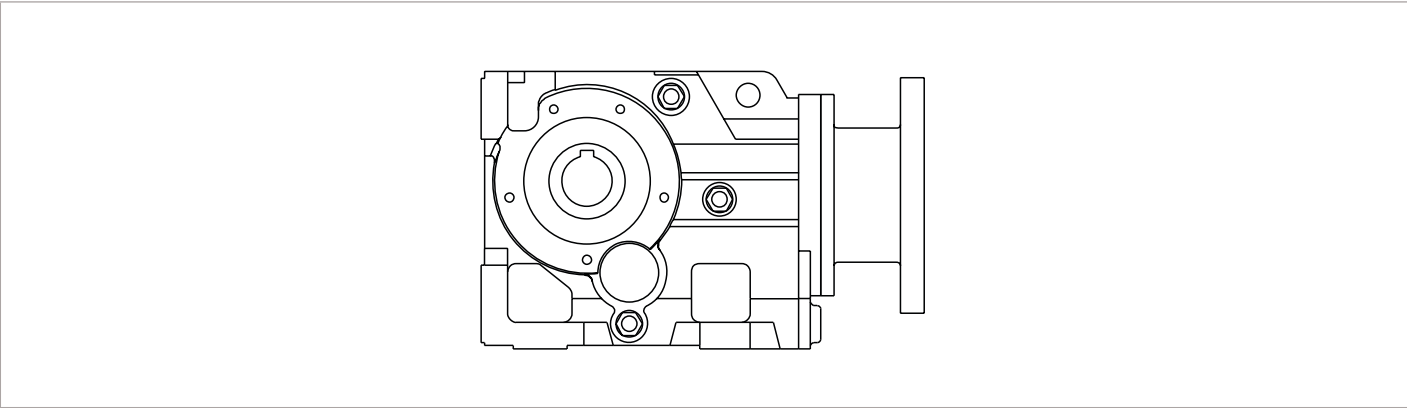
2.1. NOMENCLATURA



POSICIÓN BRIDA DE SALIDA:



2.2. REDUCTOR ORTOGONAL



Reductores con carcasa de fundición y fijación universal (patas y brida de salida). Su mayor particularidad es la baja rumorosidad, compactabilidad, alto rendimiento y fiabilidad.

Gear reducers with a cast housing and universal mounting (feet and output flange). Their main features are low noise levels, compact design, high efficiency, and reliability.

CARACTERÍSTICAS:

- **Carcasa modular de hierro fundido, rígida y precisa.** *Modular cast iron housing, rigid and precise*
- **Alta eficiencia de hasta el 96%.** *High efficiency of up to 96%.*
- **Amplia gama de tamaños.** *Wide range of sizes.*
- **Resistencia y fiabilidad para aplicaciones pesadas.** *Strength and reliability for heavy-duty applications.*

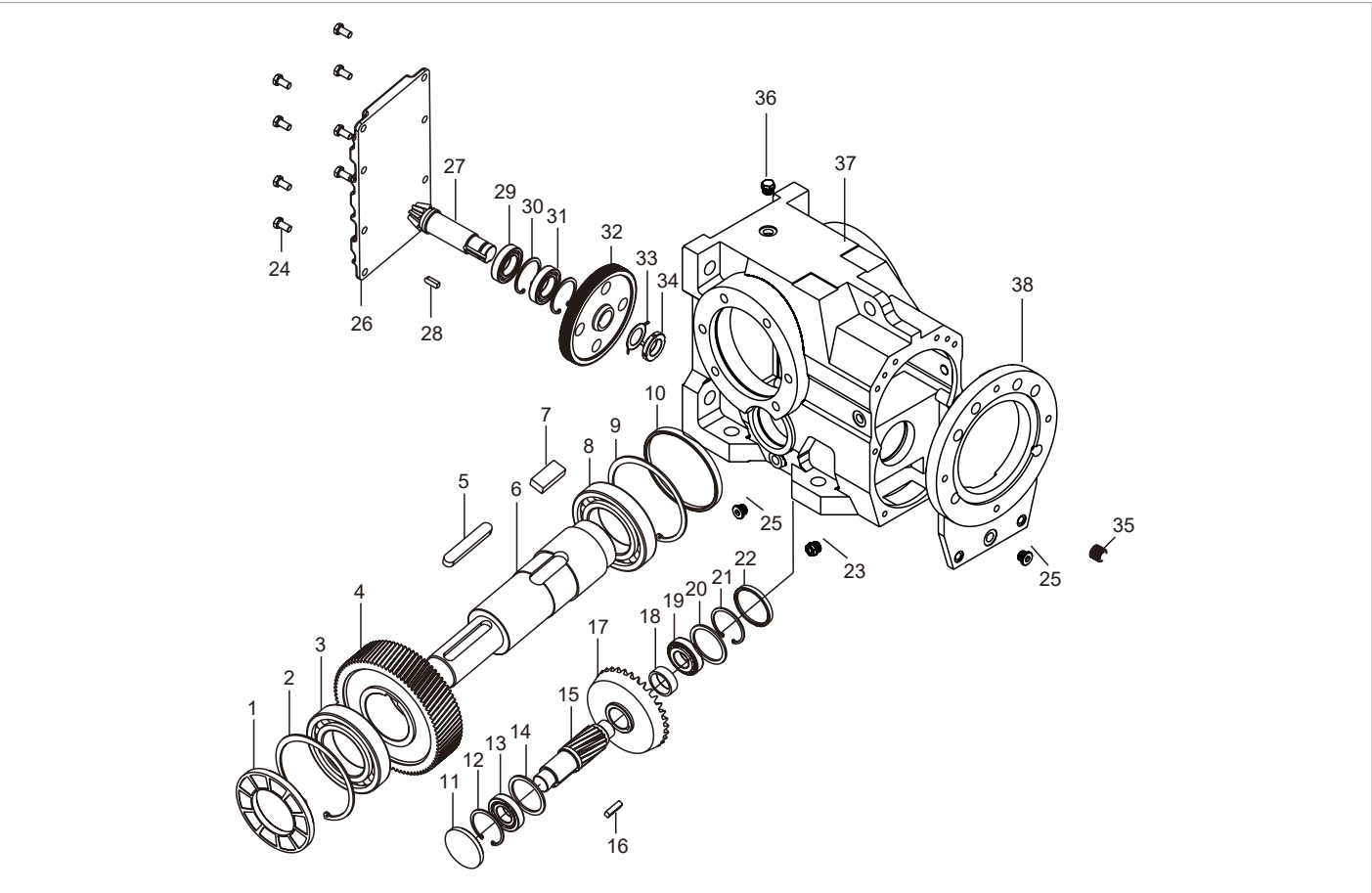
2.3. ESTRUCTURA DEL PRODUCTO

MK Series 	MKAT Series 	
MKA Series 	MKF Series 	MKAF Series

ENTORNO DE TRABAJO:

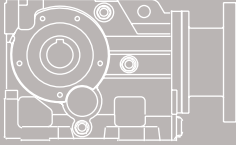
- **Sin limitación industrial.** *Without industry limitation.*
- **Adecuado para rotación normal e inversa.** *Suitable for normal-reverse rotation.*
- **El lugar de funcionamiento debe estar por debajo de los 1.000 metros sobre el nivel del mar.** *The working place should be lower than 1,000 meters above sea-level.*
- **Por favor, consulte con nuestro departamento de soporte técnico para otras condiciones.** *Please consult our technical supporting department for other circumstances.*
- **Temperatura de trabajo: -40 -50 (la lubricación debe calentarse por encima de 0 si la temperatura es inferior a 0).** *Working temperature: -40 -50 The lubrication should be heated until above 0 if temperature below 0 .*
La velocidad de entrada debe ser inferior a 3.000 r/min y la velocidad periférica del engranaje no debe superar los 20 m/s. *The input speed should be less than 3,000 r/m,the circumferential speed of the gear should not exceed 20m/s.*

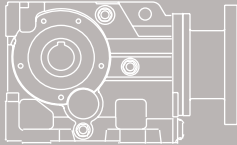
2.4. GRÁFICO DE DESMONTAJE



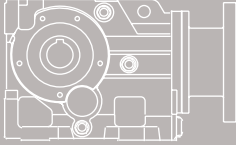
- | | | |
|---|---|---|
| 1. Sello de aceite | 14. Anillo de ajuste | 27. Eje del engranaje de la segunda etapa |
| 2. Anillo elástico para orificio | 15. Eje del engranaje de la tercera etapa | 28. Chaveta |
| 3. Rodamiento | 16. Chaveta | 29. Rodamiento |
| 4. Engranaje grande de la tercera etapa | 17. Engranaje grande de la segunda etapa | 30. Anillo elástico para orificio |
| 5. Chaveta | 18. Manguito del eje | 31. Rodamiento |
| 6. Eje de salida | 19. Rodamiento | 32. Engranaje grande de la primera etapa |
| 7. Chaveta | 20. Anillo de ajuste | 33. Arandela de seguridad |
| 8. Rodamiento | 21. Anillo elástico para orificio | 34. Tuerca redonda |
| 9. Anillo elástico para orificio | 22. Tapa del sello | 35. Engranaje pequeño de la primera etapa |
| 10. Tapa del sello | 23. Visor de aceite | 36. Tapón respiradero |
| 11. Tapa del sello | 24. Tornillo | 37. Carcasa |
| 12. Anillo elástico para orificio | 25. Tapón | 38. Tapa frontal |
| 13. Rodamiento | 26. Tapa de la carcasa | |

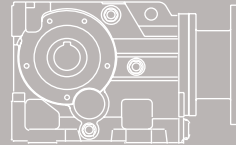
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.12	6.2	184	144.79	4.4	MKA67 MKAF67	6P
	6.8	168	131.87	2.4	MKA47 MKAF47	6P
	7.4	155	121.48	2.6		
	8.6	133	104.37	3		
	10	110	131.87	3.7	MKA47 MKAF47	4P
	11	101	121.48	4		
	8.5	136	106.38	1.5	MKA37 MKAF37	6P
	9.2	125	97.81	1.6		
	11	107	83.69	1.9		
	12	92	72.54	2.2		
	13	88	106.38	2.3	MKA37 MKAF37	4P
	14	81	97.81	2.5		
	16	70	83.69	2.9		
	19	60	72.54	3.3		
	20	56	67.8	3.5		
	24	49	58.6	4.1		
	28	41	49.79	4.8		
	31	37	44.46	5.4		
	36	32	37.97	6.3		
	39	30	35.57	6.8		
	46	25	29.96	8		
	48	24	28.83	8.4		
	55	21	24.99	9.6		
	59	19	23.36	10		
	68	17	20.19	11		
	80	14	17.15	13		
	90	13	15.32	14		
	105	11	13.08	15		
	114	10	12.14	16		
0.18	6.0	285	144.79	2.9	MKA67 MKAF67	6P
	7.0	145	123.54	3.4		
	8.1	215	108.03	3.8		
	8.5	205	102.62	4.0		
	9.1	189	144.79	4.3	MKA67 MKAF67	4P
	11	161	123.54	5.1		
	12	141	108.03	5.8		
	6.6	260	131.87	1.55	MKA47 MKAF47	6P
	7.2	240	121.48	1.65		
	8.3	205	104.37	1.95		
	9.6	180	90.86	2.2		
	10	168	85.12	2.4		

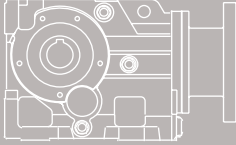
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.18	10	172	131.87	2.3	MKA47 MKAF47	4P
	11	158	121.48	2.5		
	13	136	104.37	2.9		
	15	118	90.86	3.4		
	16	111	85.12	3.6		
	8.2	210	106.38	0.95	MKA37 MKAF37	6P
	8.9	193	97.81	1.05		
	10	165	83.69	1.20		
	12	143	72.54	1.40		
	12	139	106.38	1.45	MKA37 MKAF37	4P
	14	127	97.81	1.55		
	16	109	83.69	1.85		
	18	95	72.54	2.1		
	19	88	67.80	2.3		
	23	76	58.60	2.6		
	27	65	49.79	3.1		
	30	58	44.46	3.5		
	35	49	37.97	4.1		
	37	46	35.57	4.3		
	44	39	29.96	5.1		
	46	38	28.83	5.3		
	53	33	24.99	6.2		
	57	30	23.36	6.4		
	65	26	20.19	7.0		
	77	22	17.15	8.1		
	86	20	15.31	8.8		
	101	17	13.08	9.7		
	109	16	12.14	10		
	126	14	10.49	12		
	148	12	8.91	14		
	166	10	7.96	15		
0.25	4.6	520	192.18	2.8	MKA77 MKAF77	6P
	4.9	485	179.37	3.0		
	5.7	420	154.02	3.7		
	6.5	365	135.28	4.2		
	6.1	395	144.79	2.1	MKA67 MKAF67	6P
	7.1	335	123.54	2.5		
	8.1	295	108.03	2.8		
	8.6	280	102.62	3.0		

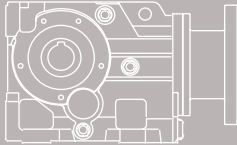
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.25	9.0	265	144.79	3.1	MKA67 MKAF67	4P
	11	225	123.54	3.6		
	12	198	108.03	4.1		
	13	189	102.62	4.3		
	6.7	360	131.87	1.10	MKA47 MKAF47	6P
	7.2	330	121.48	1.20		
	8.4	285	104.37	1.40		
	9.7	245	90.86	1.60		
	10	230	85.12	1.75	MKA47 MKAF47	4P
	9.9	240	131.87	1.65		
	11	225	121.48	1.80		
	12	192	104.37	2.1		
	14	167	90.86	2.4	MKA37 MKAF37	6P
	15	156	85.12	2.6		
	11	225	83.69	0.90		
	12	197	72.54	1.00		
	13	184	67.80	1.10	MKA37 MKAF37	4P
	15	159	58.60	1.25		
	18	135	49.79	1.50		
	12	195	106.38	1.00		
	13	180	97.81	1.10		
	16	154	83.69	1.30		
	18	133	72.54	1.50		
	19	125	67.80	1.60		
	22	108	58.60	1.85		
	26	91	49.79	2.2		
	29	82	44.46	2.5		
	34	70	37.97	2.9		
	37	65	35.57	3.1		
	43	55	29.96	3.6		
	45	53	28.83	3.8		
	52	46	24.99	4.4		
	56	43	23.36	4.6		
	64	37	20.19	5.0		
	76	32	17.15	5.7		
	85	28	15.32	6.2		
	99	24	13.08	6.9		
	107	22	12.14	7.2		
	124	19	10.49	8.3		
	146	16	8.91	9.8		
	163	15	7.96	11		
	191	13	6.80	12		
	204	12	6.37	12		

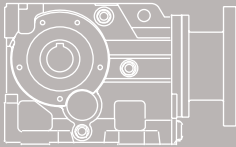
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.37	4.6	775	197.37	3.5	MKA87 MKAF87	6P
	5.2	685	174.19	4.0		
	5.8	605	154.02	2.6	MKA77 MKAF77	6P
	6.7	530	135.28	2.9		
	7	505	128.52	3.1		
	7.9	445	113.56	3.5	MKA77 MKAF77	4P
	7.2	490	192.18	3		
	7.7	460	179.37	3.2		
	9	395	154.02	3.9	MKA67 MKAF67	6P
	7.3	485	123.54	1.7		
	8.3	425	108.03	1.95		
	8.8	405	102.62	2		
	10	355	90.04	2.3	MKA67 MKAF67	4P
	9.5	370	144.79	2.2		
	11	315	123.54	2.6		
	13	275	108.03	3.0		
	15	230	90.04	3.6		
	18	196	76.37	4.2	MKA47 MKAF47	6P
	8.6	410	104.37	1.00		
	9.9	355	90.86	1.10		
	11	335	85.12	1.20		
	12	295	75.2	1.35	MKA47 MKAF47	4P
	10	340	131.87	1.2		
	11	310	121.48	1.30		
	13	265	104.37	1.50		
	15	235	90.86	1.70		
	16	220	85.12	1.85		
	18	193	75.20	2.1		
	20	179	69.84	2.2	MKA37 MKAF37	4P
	22	162	63.3	2.5		
	14	250	97.81	0.80		
	16	215	83.69	0.95		
	19	186	72.54	1.10		
	20	174	67.80	1.15		
	24	150	58.60	1.35		
	28	128	49.79	1.55		
	31	114	44.46	1.75		
	36	97	37.97	2.1		
	39	91	35.57	2.2		
	46	77	29.96	2.6		
	48	74	28.83	2.7		
	55	64	24.99	3.1		

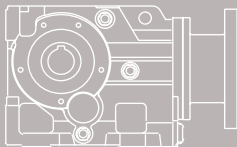
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.37	59	60	23.36	3.3	MKA37 MKAF37	4P
	68	52	20.19	3.6		
	80	44	17.15	4.1		
	90	39	15.32	4.5		
	105	34	13.08	4.9		
	114	31	12.14	5.1	MKAF37 MKF37	4P
	132	27	10.49	5.9		
	155	23	8.91	7.0		
	173	20	7.96	7.6		
	203	17	6.80	8.6		
	217	16	6.37	8.9		
	257	14	5.36	10		
0.55	4.6	1150	197.37	2.3	MKA87 MKAF87	6P
	5.2	1020	174.19	2.7		
	5.5	960	164.34	2.8		
	6.1	860	147.33	3.1		
	5.8	900	154.02	1.70	MKA77 MKAF77	6P
	6.7	790	135.28	1.95		
	7.0	750	128.52	2.1		
	7.9	665	113.56	2.3		
	8.8	595	154.02	2.6	MKA77 MKAF77	4P
	10	520	135.28	3.0		
	11	495	128.52	3.1		
	12	440	113.56	3.5		
	14	375	97.05	4.1	MKA67 MKAF67	6P
	7.3	720	123.54	1.15		
	8.3	630	108.03	1.3		
	8.8	600	102.62	1.35		
	10	525	90.04	1.55	MKA67 MKAF67	6P
	12	445	76.37	1.85		
	11	475	123.54	1.70		
	13	415	108.03	1.95		
	15	350	90.04	2.4	MKA47 MKAF47	6P
	18	295	76.37	2.8		
	13	405	104.37	1.00		
	15	350	90.86	1.15		
	16	330	85.12	1.20		
	18	290	75.20	1.40		
	19	270	69.84	1.50		
	21	245	63.30	1.65		
	24	220	56.83	1.80		
	28	189	48.95	2.1		
	30	178	46.04	2.2		

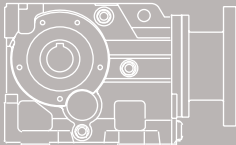
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.55	23	225	58.60	0.90	MKA37 MKAF37	4P
	27	192	49.79	1.05		
	31	172	44.46	1.15		
	36	147	37.97	1.35		
	38	137	35.57	1.45		
	45	116	29.96	1.75		
	47	111	28.83	1.80		
	54	97	24.99	2.1		
	58	90	23.36	2.2		
	67	78	20.19	2.4		
	79	66	17.15	2.7		
	89	59	15.32	3.0		
	104	51	13.08	3.3		
	112	47	12.14	3.4		
	130	41	10.49	4.0		
	153	34	8.91	4.7		
	171	31	7.96	5.1		
	200	26	6.80	5.7		
	214	25	6.37	5.9		
	254	21	5.36	6.8		
0.75	5.2	1390	174.19	1.95	MKA87 MKAF87	6P
	5.5	1310	164.34	2.1		
	6.1	1170	147.32	2.3		
	7.1	1010	126.91	2.7		
	7	1020	197.37	2.6	MKA87 MKAF87	4P
	7.9	900	174.19	3		
	8.4	850	164.34	3.2		
	9.4	765	147.32	3.5		
	6.7	1080	135.28	1.45	MKA77 MKAF77	6P
	7.0	1020	128.52	1.50		
	7.9	900	113.56	1.70		
	9.3	770	97.05	2.0		
	10	710	88.97	2.2	MKA77 MKAF77	4P
	9.0	800	154.02	1.95		
	10	700	135.28	2.2		
	11	665	128.52	2.3		
	12	590	113.56	2.6		
	14	505	97.05	3.1		

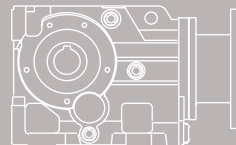
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
0.75	11	640	123.54	1.30	MKA67 MKAF67	4P
	13	560	108.03	1.45		
	15	465	90.04	1.75		
	18	395	76.37	2.1		
	20	360	68.95	2.3		
	23	315	60.66	2.6		
	24	295	57.28	2.8		
	18	390	75.20	1.00	MKA47 MKAF47	4P
	20	365	69.84	1.10		
	22	330	63.30	1.20		
	24	295	56.83	1.35		
	28	255	48.95	1.55		
	30	240	46.04	1.65		
	35	205	39.61	1.95		
	39	184	35.39	2.2		
	44	162	31.30	2.5		
	31	230	44.46	0.85	MKA37 MKAF37	4P
	36	197	37.97	1.00		
	39	185	35.57	1.10		
	46	156	29.96	1.30		
	48	150	28.83	1.35		
	55	130	24.99	1.55		
	59	121	23.36	1.60		
	68	105	20.19	1.75		
	80	89	17.15	2.0		
	90	80	15.32	2.2		
	105	68	13.08	2.4		
	114	63	12.14	2.5		
	132	54	10.49	2.9		
	155	46	8.91	3.5		
	173	41	7.96	3.8		
	203	35	6.80	4.2		
	217	33	6.37	4.4		
	257	28	5.36	5.0		
1.1	5.2	2010	176.05	2.1	MKA97 MKAF97	6P
	6.0	1750	153.21	2.5		
	6.6	1600	140.28	2.7		
	7.4	1420	123.93	3.0		
	7.9	1320	176.05	3.3	MKA97 MKAF97	4P
	9.1	1150	153.21	3.7		
	10	1050	140.28	4.1		

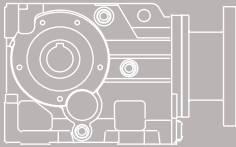
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
1.1	5.3	1990	174.19	1.35	MKA87 MKAF87	6P
	5.6	1880	164.34	1.45		
	6.2	1680	147.33	1.60		
	7.2	1450	126.91	1.85		
	8.0	1310	174.19	2.1	MKA87 MKAF87	4P
	8.5	1230	164.34	2.2		
	9.5	1110	147.32	2.4		
	11	950	126.91	2.8		
	12	870	115.82	3.1	MKA77 MKAF77	6P
	6.8	1540	135.28	1.00		
	7.2	1470	128.52	1.05		
	8.1	1300	113.56	1.20		
	9.5	1110	97.05	1.40	MKA77 MKAF77	4P
	10	1020	135.28	1.55		
	11	960	128.52	1.60		
	12	850	113.56	1.80		
	14	730	97.05	2.1		
	16	670	88.97	2.3		
	18	585	78.07	2.7	MKA67 MKAF67	4P
	19	555	73.99	2.8		
	13	810	108.03	1.00		
	14	770	102.62	1.05		
	16	675	90.04	1.20		
	18	575	76.37	1.45		
	20	515	68.95	1.60		
	23	455	60.66	1.80		
	24	430	57.28	1.90		
	29	365	48.77	2.2		
	32	335	44.32	2.5	MKA47 MKAF47	4P
	36	290	38.39	2.8		
	25	425	56.83	0.95		
	29	265	48.95	1.10		
	30	345	46.04	1.15		
	35	295	39.61	1.35		
	40	265	35.39	1.50		
	45	235	31.30	1.70		
	48	220	29.32	1.80		
	54	194	25.91	2.1		
	64	164	21.81	2.4		
	72	147	19.58	2.7		

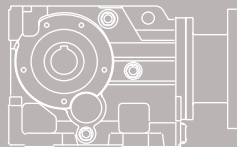
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
1.1	47	225	29.96	0.90	MKA37 MKAF37	4P
	56	188	24.99	1.05		
	60	175	23.36	1.10		
	69	152	20.19	1.20		
	82	129	17.15	1.40		
	91	115	15.32	1.50		
	107	98	13.08	1.70		
	115	91	12.14	1.75		
	133	79	10.49	2.0		
	157	67	8.91	2.4		
	176	60	7.96	2.6		
	206	51	6.80	2.9		
	220	48	6.37	3.0		
	261	40	5.36	3.5		
1.5	5.2	2740	176.05	1.55	MKA97 MKAF97	6P
	6.0	2390	153.21	1.80		
	6.6	2180	140.28	1.95		
	7.4	1930	123.93	2.2		
	8.0	1790	176.05	2.4	MKA97 MKAF97	4P
	9.2	1560	153.21	2.8		
	10	1430	140.28	3.0		
	11	1260	123.93	3.4		
	6.2	2290	147.33	1.20	MKA87 MKAF87	6P
	7.2	1980	126.91	1.35		
	7.9	1800	115.82	1.50		
	9.0	1600	102.71	1.70		
	8.1	1770	174.19	1.55	MKA87 MKAF87	4P
	8.6	1670	164.34	1.60		
	9.6	1500	147.32	1.80		
	11	1290	126.91	2.1		
	12	1180	115.82	2.3		
	14	1040	102.71	2.6		
	16	880	86.34	3.1	MKA77 MKAF77	6P
	8.1	1770	113.56	0.90		
	9.5	1510	97.05	1.05		
	10	1390	88.97	1.10		
	12	1220	78.07	1.30	MKA77 MKAF77	4P
	10	1370	135.28	1.15		
	11	1310	128.52	1.20		
	12	1150	113.56	1.35		
	15	990	97.05	1.55		
	16	900	88.97	1.70		
	18	795	78.07	1.95		

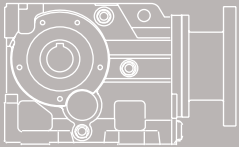
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
1.5	19	750	73.99	2.1	MKA77 MKAF77	4P
	22	660	64.76	2.4		
	24	595	58.34	2.6		
	28	520	51.18	3.0		
	31	460	45.16	3.4		
	35	405	40.04	3.8		
	16	910	90.04	0.90	MKA67 MKAF67	4P
	18	775	76.37	1.05		
	20	700	68.95	1.15		
	23	615	60.66	1.35		
	25	580	57.28	1.40		
	29	495	48.77	1.65		
	32	450	44.32	1.80		
	37	390	38.39	2.0		
	40	360	35.62	2.3		
	47	305	30.22	2.7		
	52	275	27.28	3.0	MKA47 MKAF47	4P
	59	245	24.00	3.3		
	36	400	39.61	1.00		
	40	360	35.39	1.10		
	45	320	31.30	1.25		
	48	300	29.32	1.35		
	54	265	25.91	1.50		
	65	220	21.81	1.80		
	72	199	19.58	2.0		
	84	171	16.86	2.2		
	89	161	15.86	2.4	MKA37 MKAF37	4P
	103	139	13.65	2.6		
	116	124	12.19	2.8		
	120	120	11.77	2.3		
	60	235	23.36	0.80		
	70	205	20.19	0.90		
	82	174	17.15	1.05		
	92	156	15.32	1.10		
	108	133	13.08	1.25		
	116	123	12.14	1.30		
	134	107	10.49	1.50		
	158	91	8.91	1.75		
	177	81	7.96	1.90		
	207	69	6.80	2.2		
	221	65	6.37	2.2		
	263	55	5.36	2.6		

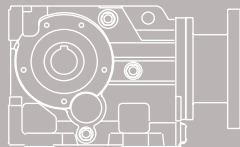
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
2.2	6.1	3420	153.21	1.25	MKA97 MKAF97	6P
	6.7	3140	140.28	1.35		
	7.6	2770	123.93	1.55		
	8.9	2350	105.13	1.85		
	8.0	2620	176.05	1.65	MKA97 MKAF97	4P
	9.2	2280	153.21	1.90		
	10	2090	140.28	2.1		
	11	1850	123.93	2.3		
	13	1570	105.13	2.8		
	15	1440	96.80	3.0	MKA87 MKAF87	4P
	9.6	2200	147.32	1.25		
	11	1890	126.91	1.45		
	12	1730	115.82	1.55		
	14	1530	102.71	1.75		
	16	1290	86.34	2.1		
	18	1180	79.34	2.3		
	20	1050	70.46	2.6		
	22	940	63.00	2.9		
	12	1690	113.56	0.90	MKA77 MKAF77	4P
	15	1450	97.05	1.05		
	16	1330	88.97	1.15		
	18	1160	78.07	1.35		
	19	1100	73.99	1.40		
	22	960	64.76	1.60		
	24	870	58.34	1.80		
	28	765	51.18	2.0		
	31	675	45.16	2.3		
	35	595	40.04	2.6		
	40	525	35.19	3.0		
	46	460	30.88	3.4		
	48	435	29.26	3.6		
	55	380	25.61	4.1		
	23	900	60.66	0.90	MKA67 MKAF67	4P
	25	850	57.28	0.95		
	29	725	48.77	1.15		
	32	660	44.32	1.25		
	37	570	38.39	1.40		
	40	530	35.61	1.55		
	47	450	30.21	1.80		
	52	405	27.27	2.0		
	59	360	23.99	2.2		
	62	340	22.66	2.3		
	73	285	19.29	2.6		

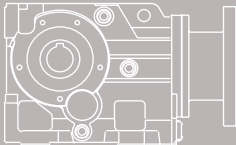
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
2.2	80	260	17.53	2.8	MKA67 MKAF67	4P
	93	225	15.19	3.1		
	107	197	13.22	3.4		
	113	186	12.48	2.8		
	133	158	10.63	3.2		
	146	144	9.66	3.3		
	169	125	8.37	3.5	MKA47 MKAF47	4P
	194	109	7.28	3.9		
	54	385	25.91	1.05		
	65	325	21.81	1.25		
	72	290	19.58	1.35		
	84	250	16.86	1.50		
	89	235	15.86	1.60		
	103	205	13.65	1.75		
	116	182	12.19	1.95	MKA47 MKAF47	4P
	120	175	11.77	1.60		
	133	157	10.56	1.80		
	155	136	9.10	2.1		
	108	195	13.08	0.85	MKA37 MKAF37	4P
	134	156	10.49	1.00		
	158	133	8.91	1.20		
	177	119	7.96	1.30		
	207	101	6.80	1.50		
	221	95	6.37	1.55		
	263	80	5.36	1.75		
3	6.6	4370	143.47	1.85	MKA107 MKAF107	6P
	7.7	3700	121.46	2.2		
	8.4	3430	112.41	2.3		
	9.3	3070	100.75	2.6		
	9.8	2940	143.47	2.7	MKA107 MKAF107	4P
	12	2490	121.46	3.2		
	7.6	3780	123.93	1.15	MKA97 MKAF97	6P
	8.9	3200	105.13	1.35		
	9.7	2950	96.80	1.45		
	11	2640	86.52	1.65		
	7.9	3600	176.05	1.20	MKA97 MKAF97	4P
	9.1	3140	153.21	1.35		
	10	2870	140.28	1.50		
	11	2540	123.93	1.70		
	13	2150	105.13	2.0		
	14	1980	96.80	2.2		
	16	1770	86.52	2.4		

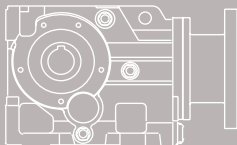
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
3	18	1590	77.89	2.7	MKA97 MKAF97	4P
	20	1440	70.54	3.0		
	22	1280	62.55	3.4		
	25	1160	56.55	3.7		
	9.5	3010	147.33	0.90	MKA87 MKAF87	4P
	11	2600	126.91	1.05		
	12	2370	115.82	1.15		
	14	2100	102.71	1.30		
	16	1770	86.34	1.55	MKA87 MKAF87	4P
	18	1620	79.34	1.65		
	20	1440	70.46	1.85		
	22	1290	63	2.1		
	25	1160	56.64	2.3		
	28	1010	49.16	2.7		
	32	900	44.02	2.9		
	38	745	36.52	3.3		
	16	1820	88.97	0.85	MKA77 MKAF77	4P
	18	1600	78.07	0.95		
	19	1510	73.99	1		
	22	1330	64.76	1.15		
	24	1190	58.34	1.3		
	27	1050	51.18	1.5		
	31	920	45.16	1.7		
	35	820	40.04	1.9		
	40	720	35.19	2.2	MKA67 MKAF67	4P
	45	630	30.88	2.5		
	32	910	44.32	0.9		
	36	785	38.39	1		
	39	730	35.61	1.15		
	46	620	30.21	1.35		
	51	560	27.27	1.45		
	58	490	23.99	1.65		
	62	465	22.66	1.7		
	73	395	19.29	1.95		
	80	360	17.53	2.1		
	92	310	15.19	2.2		
	106	270	13.22	2.5		
	112	255	12.48	2.1		
	132	220	10.63	2.3		
	145	198	9.66	2.4		

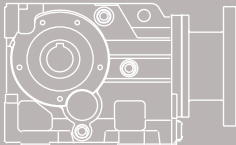
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
3	72	400	19.58	1	MKA47 MKAF47	4P
	83	345	16.86	1.1		
	88	325	15.86	1.15		
	103	280	13.65	1.3		
	115	250	12.19	1.4		
	119	240	11.77	1.15		
	133	215	10.56	1.3		
	154	186	9.1	1.5		
	164	175	8.56	1.55		
	190	151	7.36	1.65		
	213	135	6.58	1.8		
	241	119	5.81	1.95		
	157	182	8.91	0.9	MKA37 MKAF37	4P
	176	163	7.96	0.95		
	206	139	6.8	1.1		
	220	130	6.37	1.1		
	261	110	5.36	1.3		
4	6.7	5710	143.47	1.40	MKA107 MKAF107	6P
	7.9	4830	121.46	1.65		
	8.5	4470	100.75	1.80		
	9.5	4010	112.41	2.0		
	11	3620	90.96	2.2		
	9.9	3860	143.47	2.1	MKA107 MKAF107	4P
	12	3270	121.46	2.5		
	13	3020	112.41	2.7		
	14	2710	100.75	3.0		
	16	2450	90.96	3.3		
	17	2220	82.61	3.6		
	19	1970	73.30	4.1	MKA97 MKAF97	4P
	9.3	4120	153.21	1.05		
	10	3770	140.28	1.15		
	11	3330	123.93	1.30		
	14	2830	105.13	1.50		
	15	2600	96.80	1.65		
	16	2330	86.52	1.85		
	18	2100	77.89	2.0		
	20	1900	70.54	2.3	MKA87 MKAF87	4P
	12	3120	115.82	0.85		
	14	2760	102.71	1		
	16	2320	86.34	1.15		
	18	2130	79.34	1.25		
	20	1900	70.46	1.4		

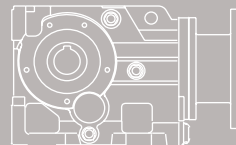
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
4	23	1690	63	1.6	MKA87 MKAF87	4P
	25	1520	56.64	1.75		
	29	1320	49.16	2		
	32	1180	44.02	2.2		
	39	980	36.52	2.5		
	22	1740	64.76	0.90	MKA77 MKAF77	4P
	24	1570	58.34	1.00		
	28	1380	51.18	1.15		
	31	1210	45.16	1.30		
	35	1080	40.04	1.45		
	37	1030	38.39	1.45		
	40	950	35.19	1.65		
	46	830	30.88	1.85		
	49	785	29.26	1.95		
	55	690	25.61	2.2		
	62	620	23.08	2.5	MKA67 MKAF67	4P
	70	545	20.24	2.8		
	47	810	30.21	1.00		
	52	735	27.27	1.10		
	59	645	23.99	1.25		
	63	610	22.66	1.30		
	74	520	19.29	1.45		
	81	470	17.53	1.55		
	94	410	15.19	1.70		
	107	355	13.22	1.90		
	114	335	12.48	1.60		
	134	285	10.63	1.75		
	147	260	9.66	1.85		
	170	225	8.37	1.95		
	195	196	7.28	2.1		
5.5	10	5270	143.47	1.5	MKA107 MKAF107	4P
	12	4460	121.46	1.8		
	13	4130	112.41	1.95		
	14	3700	100.75	2.2		
	16	3340	90.96	2.4		
	17	3030	82.61	2.6	MKA97 MKAF97	4P
	12	4550	123.93	0.95		
	14	3860	105.13	1.1		
	15	3560	93.8	1.2		
	17	3180	86.52	1.35		
	18	2860	77.89	1.5		
	20	2590	70.54	1.65		
	23	2300	62.55	1.85		
	25	2080	56.55	2.1		
	30	1760	47.93	2.4		

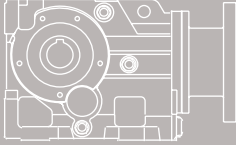
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
5.5	17	3170	86.34	0.85	MKA87 MKAF87	4P
	18	2910	79.34	0.95		
	20	2590	70.46	1.05		
	23	2310	63	1.15		
	25	2080	56.64	1.3		
	29	1810	49.16	1.5		
	32	1620	44.02	1.6		
	39	1340	36.52	1.85		
	46	1150	31.38	2.3		
	51	1020	27.87	2.5	MKA77 MKAF77	4P
	32	1660	45.16	0.95		
	36	1470	40.04	1.05		
	46	1130	30.88	1.35		
	49	1070	29.26	1.45		
	56	940	25.61	1.65		
	62	850	23.08	1.85		
	71	745	20.24	2		
	80	655	17.86	2.2		
	90	580	15.84	2.4		
	106	495	13.52	2.7		
	116	455	12.33	2.2		
	132	400	10.81	2.5		
	60	880	23.99	0.9	MKA67 MKAF67	4P
	63	830	22.66	0.95		
	74	710	19.29	1.05		
	82	645	17.53	1.15		
	94	560	15.19	1.25		
	108	485	13.22	1.4		
	115	460	12.48	1.15		
	135	390	10.63	1.3		
	148	355	9.66	1.35		
	171	305	8.37	1.45		
	196	265	7.28	1.55		
7.5	10	7190	143.47	1.1	MKA107 MKAF107	4P
	12	6080	121.46	1.3		
	13	5630	112.41	1.4		
	14	5050	100.75	1.6		
	16	4560	90.96	1.75		
	17	4140	82.61	1.95		
	20	3670	73.3	2.2		
	22	3330	66.52	2.4		
	25	2860	57.17	2.8		
	29	2500	49.9	3.1		
	34	2120	42.33	3.5		
	39	1850	37	3.9		

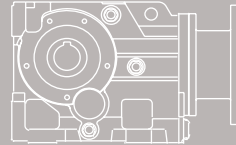
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
7.5	15	4850	96.8	0.9	MKA97 MKAF97	4P
	17	4330	86.52	1		
	18	3900	77.89	1.1		
	20	3530	70.54	1.2		
	23	3130	62.55	1.35		
	25	2830	56.55	1.5		
	30	2400	47.93	1.8		
	34	2100	41.87	2		
	37	1920	38.29	2.2		
	42	1710	34.22	2.5		
	23	3160	63	0.85	MKA87 MKAF87	4P
	25	2840	56.64	0.95		
	29	2460	49.16	1.1		
	32	2200	44.02	1.2		
	39	1830	36.52	1.35		
	46	1570	31.38	1.7		
	51	1400	27.87	1.85		
	57	1250	24.92	2		
	64	1120	22.4	2		
	74	970	19.45	2.4		
	82	870	17.41	2.5		
	89	800	16	2.2	MKA77 MKAF77	4P
	99	725	14.44	2.9		
	46	1550	30.88	1		
	49	1470	29.26	1.05		
	56	1280	25.61	1.2		
	62	1160	23.08	1.35		
	71	1010	20.24	1.5		
	80	890	17.86	1.6		
	90	795	15.84	1.75		
	106	675	13.52	2		
	116	620	12.33	1.6		
11	132	545	10.81	1.8	MKA107 MKAF107	4P
	150	480	9.54	1.95		
	169	425	8.46	2.13		
	198	365	7.22	2.3		
	13	8200	112.41	1		
	14	7350	100.75	1.1		
	16	6630	90.96	1.2		
	17	6030	82.61	1.35		
	20	5350	73.3	1.5		
	22	4850	66.52	1.65		

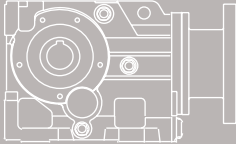
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
11	20	5150	70.54	0.85	MKA97 MKAF97	4P
	23	4560	62.55	0.95		
	25	4130	56.55	1.05		
	30	3500	47.93	1.25		
	34	3050	41.87	1.4		
	38	2790	38.29	1.55		
	42	2500	34.22	1.7		
	47	2250	30.81	1.9		
	52	2040	27.9	2.1		
	58	1800	24.74	2.4		
	64	1630	22.37	2.6	MKA87 MKAF87	4P
	33	3210	44.02	0.80		
	39	2660	36.52	0.95		
	46	2290	31.38	1.20		
	52	2030	27.87	1.30		
	58	1820	24.92	1.40		
	64	1630	22.40	1.40		
	74	1420	19.45	1.60		
	83	1270	17.41	1.75		
	90	1170	16.00	1.55		
	100	1050	14.44	2.0		
	115	920	12.56	2.2	MKA77 MKAF77	4P
	129	810	11.16	1.85		
	144	730	10.00	2.1		
	174	605	8.29	2.3		
	200	525	7.21	2.5		
	62	1680	23.08	0.90		
	71	1480	20.24	1.00		
	81	1300	17.86	1.10		
	91	1160	15.84	1.20		
	107	990	13.52	1.35		
	117	900	12.33	1.10	MKA107 MKAF107	4P
15	133	790	10.81	1.25		
	151	700	9.54	1.35		
	170	620	8.46	1.45		
	199	530	7.22	1.55		
	26	5610	57.17	1.45		
	29	4900	49.90	1.60		
	34	4150	42.33	1.75		
	39	3630	37.00	2.0		
	45	3210	32.68	2.2		
	47	3070	31.28	2.2		
	50	2840	29.00	2.5		

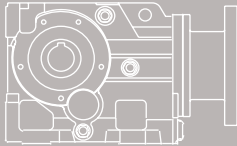
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
15	30	4700	47.93	0.90	MKA97 MKAF97	4P
	35	4110	41.87	1.05		
	38	3760	38.29	1.15		
	43	3360	34.22	1.30		
	47	3020	30.81	1.40		
	52	2740	27.90	1.55		
	59	2430	24.74	1.75		
	65	2190	22.37	1.95		
	77	1860	18.96	2.3		
	88	1620	16.56	2.7		
	47	3080	31.38	0.90	MKA87 MKAF87	4P
	52	2730	27.87	0.95		
	59	2440	24.92	1.00		
	65	2200	22.40	1.05		
	75	1910	19.45	1.20		
	84	1710	17.41	1.30		
	91	1570	16.00	1.15		
	101	1420	14.44	1.50		
	116	1230	12.56	1.60		
	131	1100	11.16	1.35		
18.5	146	980	10.00	1.55	MKA107 MKAF107	4P
	176	810	8.29	1.70		
	202	705	7.21	1.85		
	20	8840	73.30	0.90		
	22	8020	66.52	1.00		
	26	6890	57.17	1.15		
	29	6020	49.90	1.30		
	35	5100	42.33	1.45		
	40	4460	37.00	1.60		
	45	3940	32.68	1.85		
	47	3770	31.28	1.80	MKA97 MKAF97	4P
	51	3500	29.00	2.1		
	56	3170	26.32	2.3		
	65	2730	22.62	2.6		
	74	2380	19.74	3.0		
	88	2020	16.75	3.5		
	35	5050	41.87	0.85		
	48	3720	30.81	1.15		
	53	3360	27.90	1.30		
	59	2980	24.74	1.45		
	65	2700	22.37	1.60		
	77	2290	18.96	1.90		
	88	2000	16.56	2.2		
	106	1670	13.85	2.6		
	122	1450	11.99	2.7		

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
18.5	59	3000	24.92	0.85	MKA87 MKAF87	4P
	65	2700	22.40	0.85		
	75	2340	19.45	1.00		
	84	2100	17.41	1.05		
	101	1740	14.45	1.20		
	117	1510	12.56	1.30		
	131	1350	11.16	1.10		
	147	1210	10.00	1.25		
	177	1000	8.29	1.40		
	203	870	7.21	1.50		
22	26	8200	57.17	1.00	MKA107 MKAF107	4P
	29	7160	49.90	1.10		
	35	6070	42.33	1.20		
	40	5310	37.00	1.35		
	45	4690	32.69	1.55		
	47	4490	31.28	1.50		
	51	4160	29.00	1.75		
	56	3770	26.32	1.90		
	65	3240	22.62	2.2		
	74	2830	19.74	2.5		
	88	2400	16.75	2.9	MKA97 MKAF97	4P
	100	2100	14.63	3.3		
	109	1930	13.43	2.2		
	125	1680	11.73	2.6		
	147	1430	9.94	2.9		
	48	4420	30.82	0.95		
	53	4000	27.91	1.05		
	59	3550	24.75	1.20		
	65	3210	22.37	1.35		
	77	2720	18.96	1.60		
	88	2370	16.56	1.80		
	106	1990	13.85	2.2		
	122	1720	11.99	2.3		
	141	1490	10.41	1.90		
	168	1250	8.71	2.1		

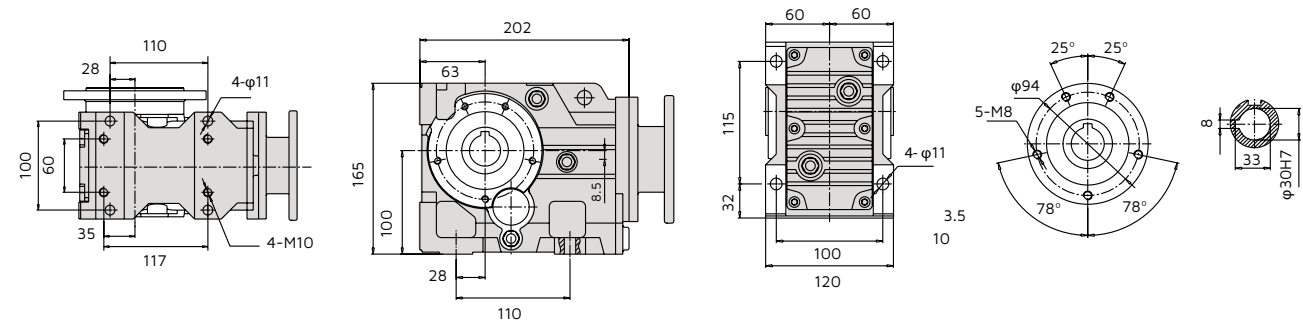
2.5. SELECCIÓN

P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
22	75	2790	19.45	0.8	MKA87 MKAF87	4P
	84	2500	17.41	0.90		
	101	2070	14.44	1.00		
	117	1800	12.56	1.10		
	131	1600	11.16	0.95		
	147	1430	10	1.05		
	177	1190	8.29	1.2		
	203	1030	7.21	1.25		
30	35	8250	42.33	0.9	MKA107 MKAF107	4P
	40	7210	37	1		
	47	6100	31.28	1.1		
	51	5650	29	1.25		
	56	5130	26.32	1.4		
	65	4410	22.62	1.65		
	74	3850	19.74	1.85		
	88	3260	16.75	2.2		
	100	2850	14.63	2.4		
	109	2620	13.43	1.65		
	125	2280	11.73	1.9		
	148	1940	9.94	2.2		
	169	1690	8.69	2.4		
	59	4820	24.75	0.9	MKA97 MKAF97	4P
	66	4360	22.37	1		
	78	3690	18.96	1.15		
	89	3230	16.56	1.35		
	106	2700	13.85	1.6		
	123	2340	11.99	1.65		
	141	2030	10.41	1.4		
	169	1700	8.71	1.55		

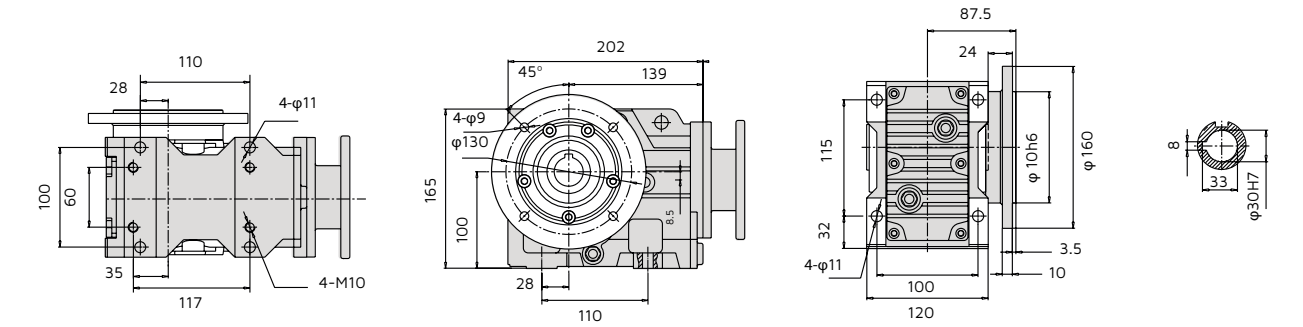
P1 (Kw)	n2 (1/min)	M2 (Nm)	i (**)	Factor de servicio		Motor Pole
37	40	8890	37	0.8	MKA107 MKAF107	4P
	47	7520	31.28	0.9		
	51	6970	29	1.05		
	56	6320	26.32	1.15		
	65	5440	22.62	1.3		
	74	4740	19.74	1.5		
	88	4020	16.75	1.75		
	100	3520	14.63	1.95		
	109	3230	13.43	1.35		
	125	2820	11.73	1.55		
45	148	2390	9.94	1.75	MKA107 MKAF107	4P
	169	2090	8.69	1.95		
	51	8480	29	0.85		
	56	7690	26.32	0.95		
	65	6610	22.62	1.1		
	74	5770	19.74	1.25		
	88	4890	16.75	1.45		
	100	4280	14.63	1.6		
	109	3930	13.43	1.1		
	125	3430	11.73	1.25		
	148	2910	9.94	1.45		
	169	2540	8.69	1.6		

2.6. DIMENSIONES MKA

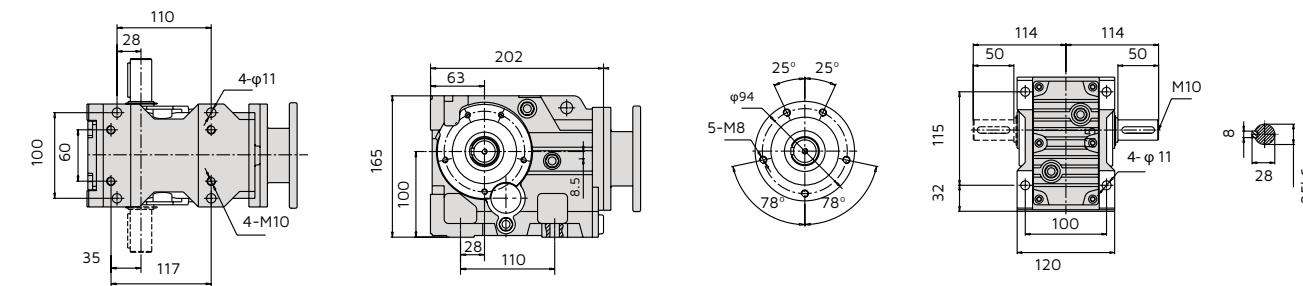
MKA 37



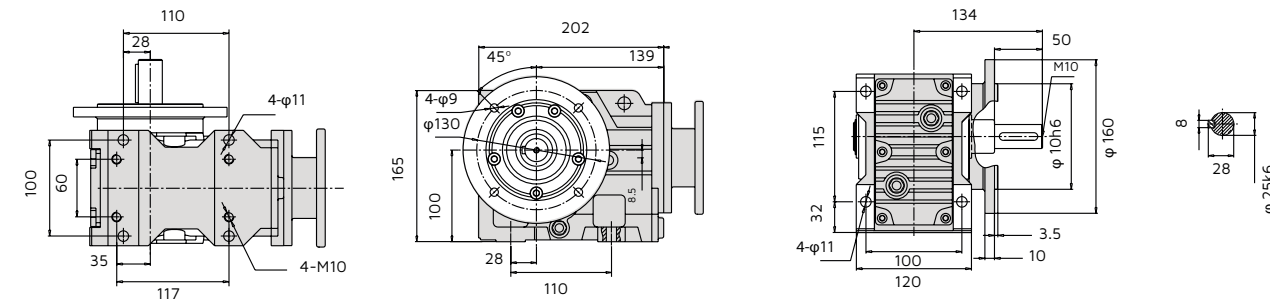
MKAF 37



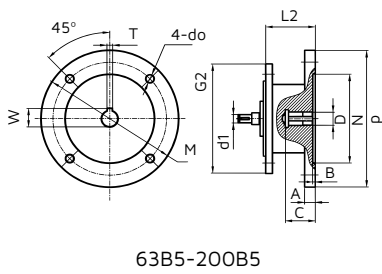
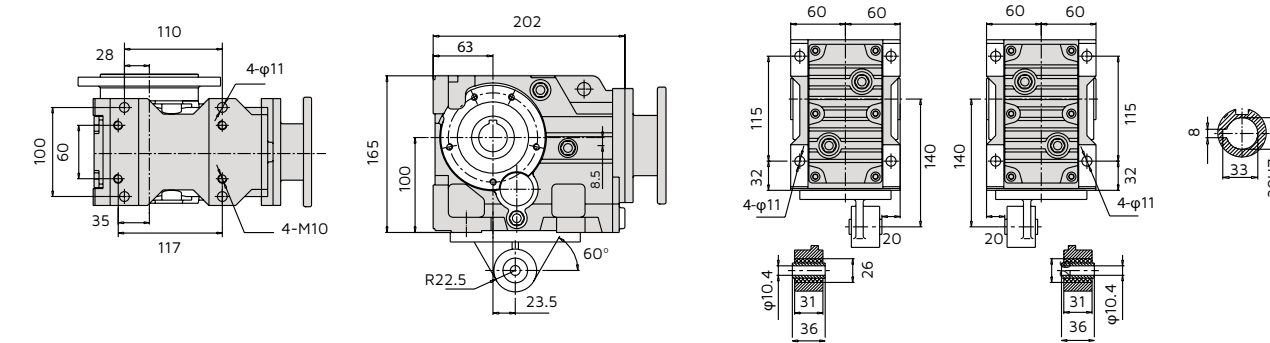
MK 37



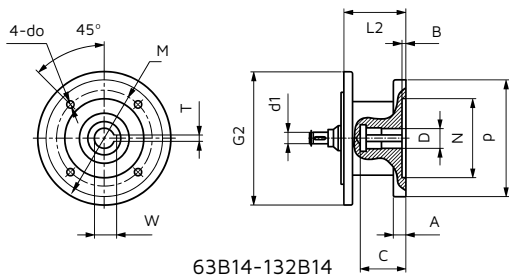
MKF 37



MKAT 37



63B5-200B5



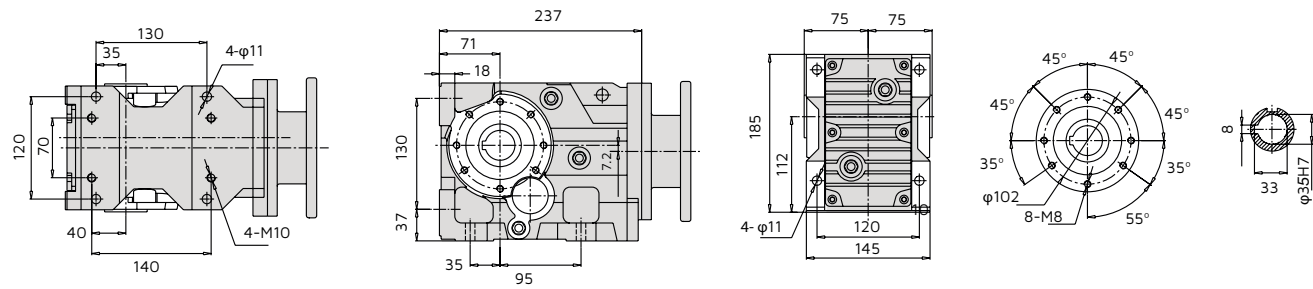
63B14-132B14

PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B5	61.5	95	115	140	10	14	4	≥24	11	4	12.8
71B5	61.5	110	130	160	10	11	4	≥31	14	5	16.3
80B5	80	130	160	200	12	12	4	≥41	19	6	21.9
90B5	80	130	160	200	12	12	4	≥51	24	8	27.3
100B5	98	180	215	250	14	17	4.5	≥61	28	8	31.3

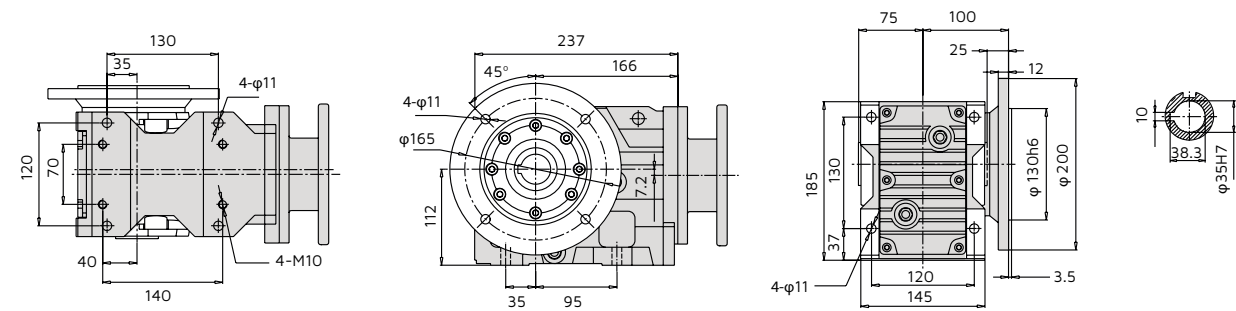
PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B14	50	60	75	90	4-φ6	9	3.5	30.5	11	4	12.8
71B14	54	70	85	105	4-φ7	10	3.5	33.5	14	5	16.3
80B14	69	80	100	120	4-φ7	12	4.5	44.5	19	6	21.9
90B14	69	95	115	140	4-φ9	12	4.5	54.5	24	8	27.3
100B14	81	110	130	160	4-φ9	15	6	66	28	8	31.3

2.6. DIMENSIONES MKA

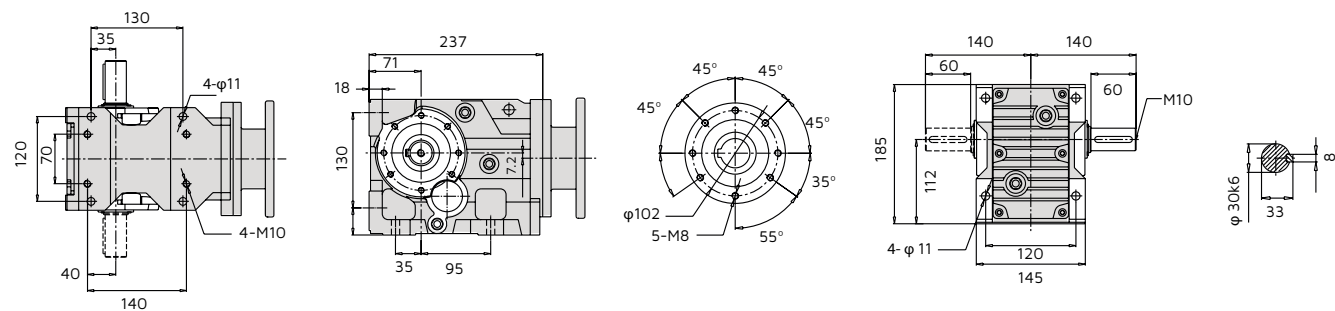
MKA 47



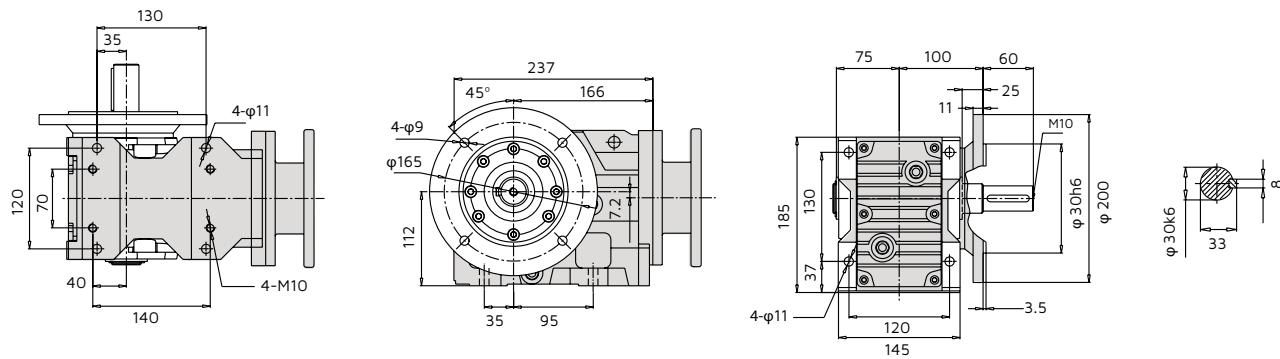
MKAF 47



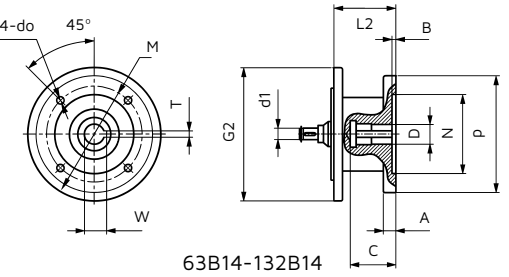
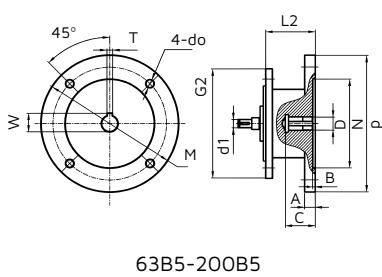
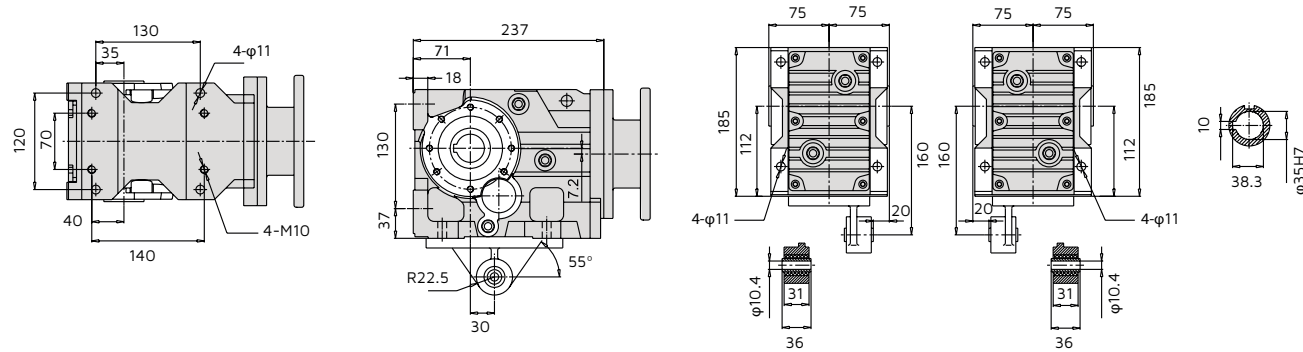
MK 47



MKF 47



MKAT 47

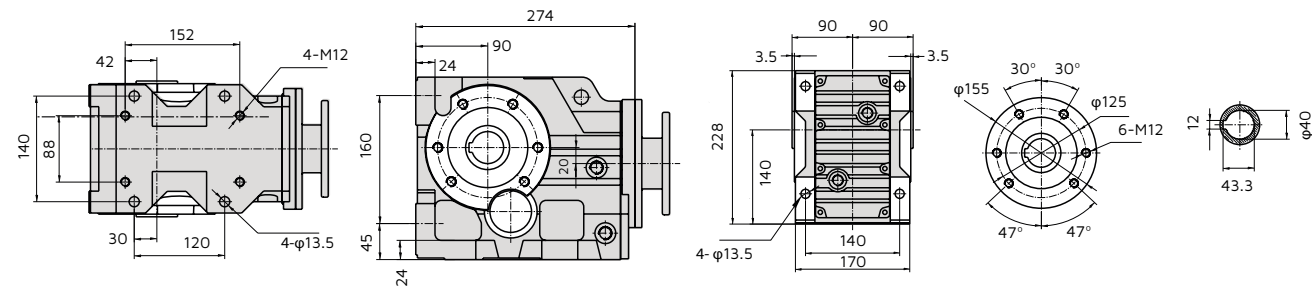


PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B5	56	95	115	140	10	14	4	≥24	11	4	12.8
71B5	56	110	130	160	10	13	4	≥31	14	5	16.3
80B5	74.5	130	160	200	12	15	4	≥41	19	6	21.9
90B5	74.5	130	160	200	12	15	4	≥51	24	8	27.3
100B5	90.5	180	215	250	14	17	4.5	≥61	28	8	31.3

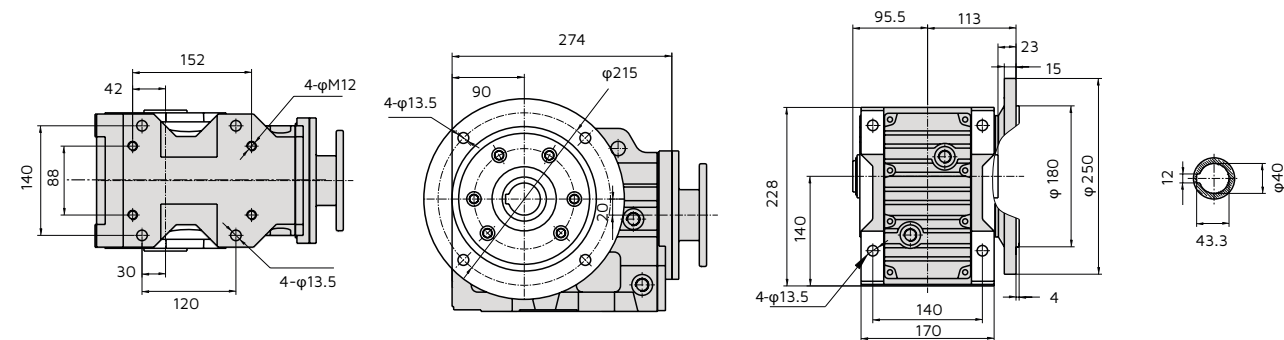
PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B14	50	60	75	90	4-φ6	9	3.5	30.5	11	4	12.8
71B14	54	70	85	105	4-φ7	10	3.5	33.5	14	5	16.3
80B14	69	80	100	120	4-φ7	12	4.5	44.5	19	6	21.9
90B14	69	95	115	140	4-φ9	12	4.5	58.5	24	8	27.3
100B14	81	110	130	160	4-φ9	15	6	66	28	8	31.3

2.6. DIMENSIONES MKA

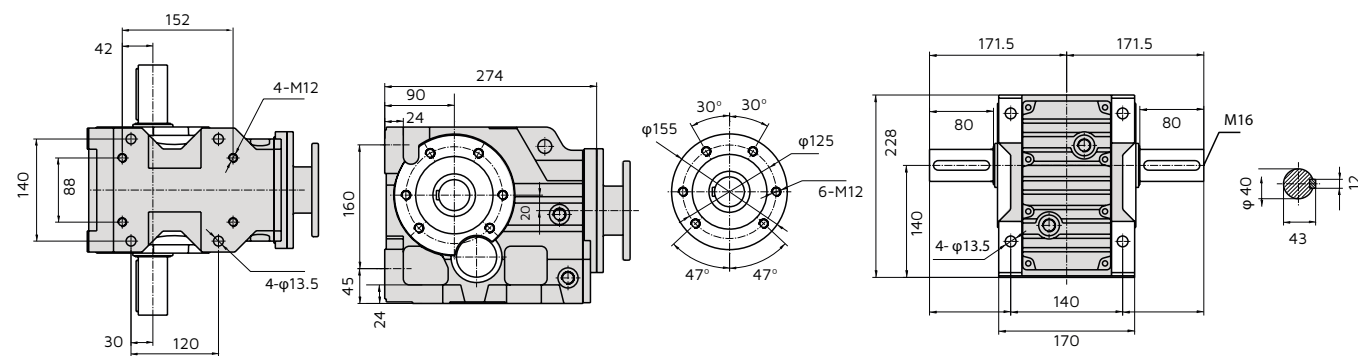
MKA 67



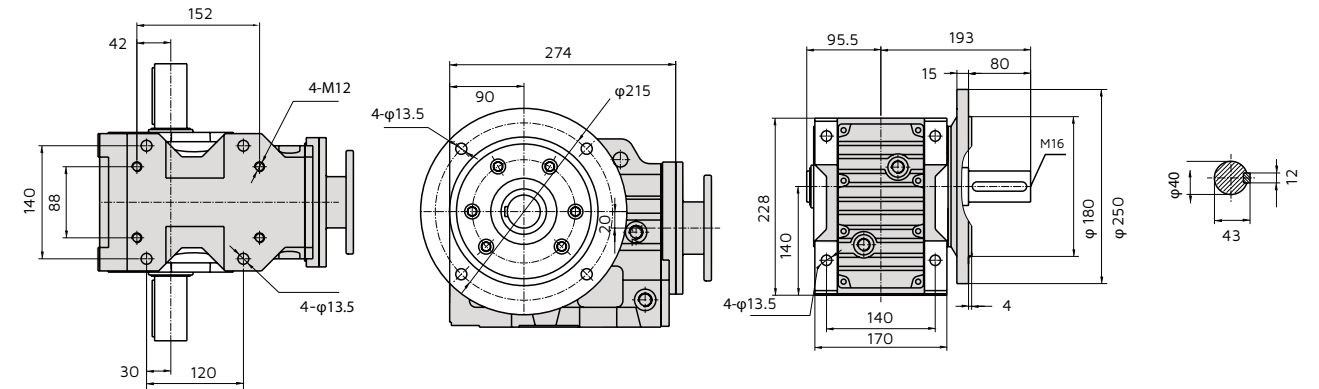
MKAF 67



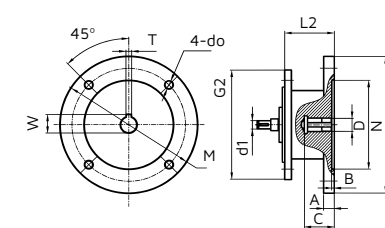
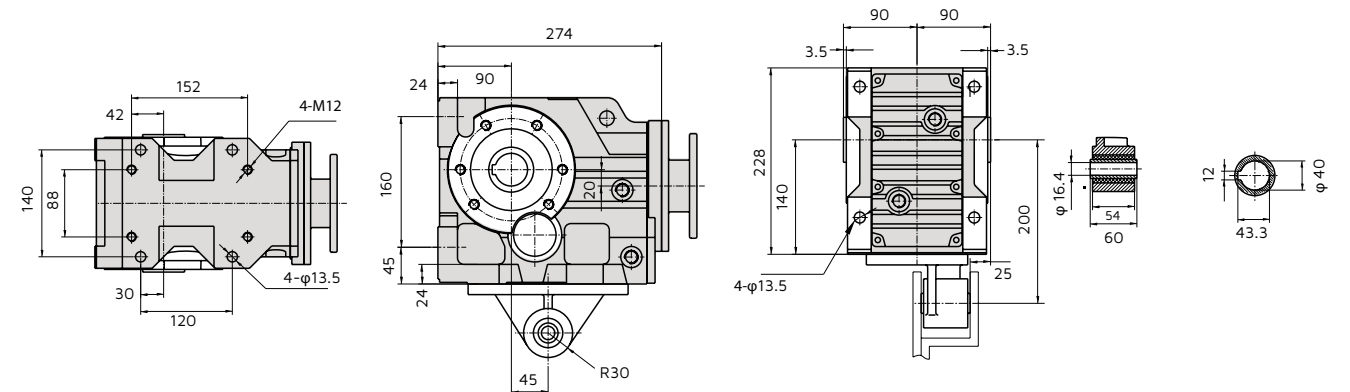
MK 67



MKF 67

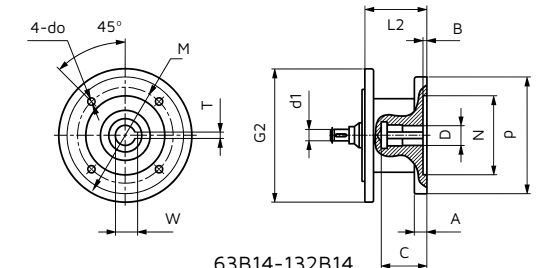


MKAT 67



63B5-200B5

PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B5	56	95	115	140	10	14	4	≥24	11	4	12.8
71B5	56	110	130	160	10	13	4	≥31	14	5	16.3
80B5	74.5	130	160	200	12	15	4	≥41	19	6	21.9
90B5	74.5	130	160	200	12	15	4	≥51	24	8	27.3
100B5	90.5	180	215	250	14	17	4.5	≥61	28	8	31.3
112B5	90.5	180	215	250	14	17	4.5	≥81	28	8	31.3
132B5	123	230	265	300	14	18	6	≥111	38	10	41.3

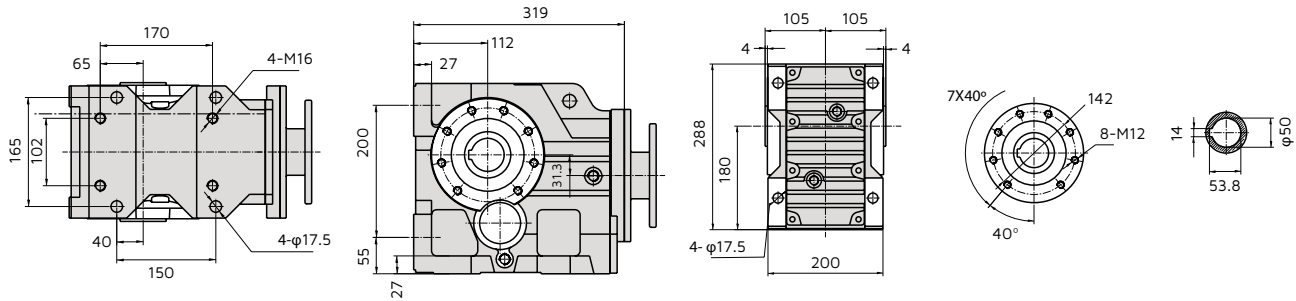


63B14-132B14

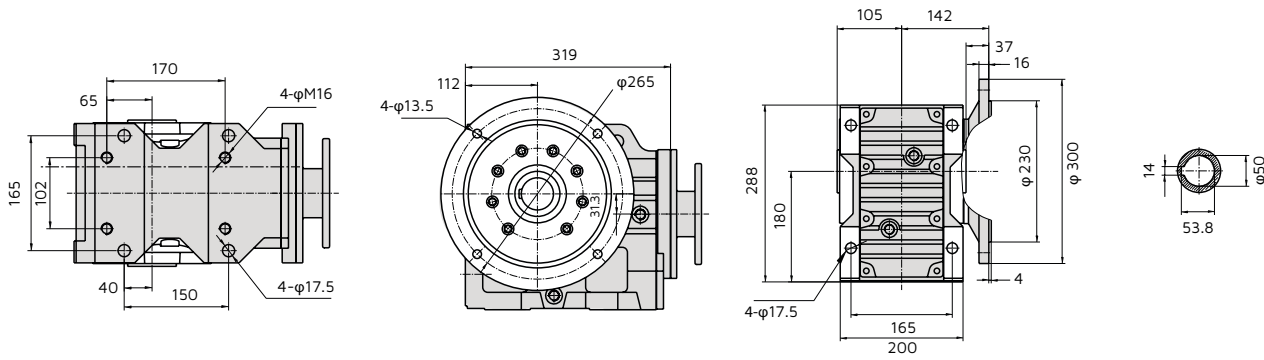
PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B14	50	60	75	90	4-06	9	3.5	30.5	11	4	12.8
71B14	54	70	85	105	4-07	10	3.5	33.5	14	5	16.3
80B14	69	80	100	120	4-07	12	4.5	44.5	19	6	21.9
90B14	69	95	115	140	4-09	12	4.5	58.5	24	8	27.3
100B14	81	110	130	160	4-09	15	6	66	28	8	31.3
112B14	81	110	130	160	4-09	15	6	66	28	8	31.3
132B14	93	130	165	200	4-011	16	5	85	38	10	41.3

2.6. DIMENSIONES MKA

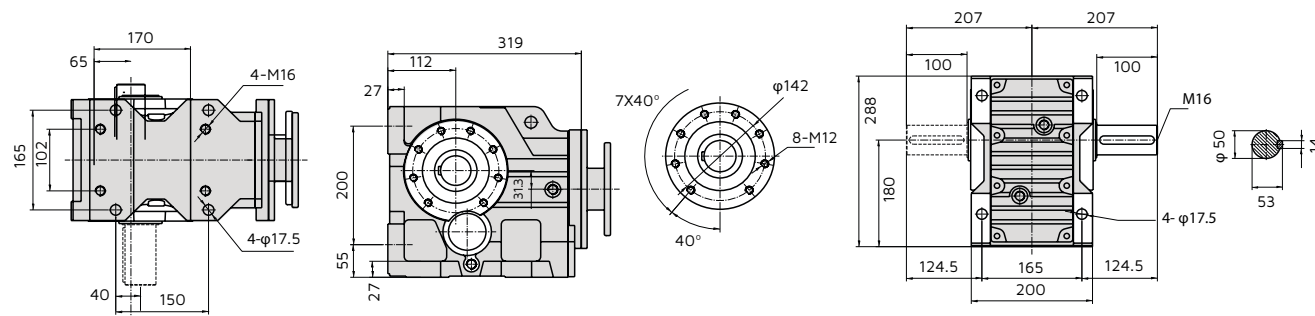
MKA 77



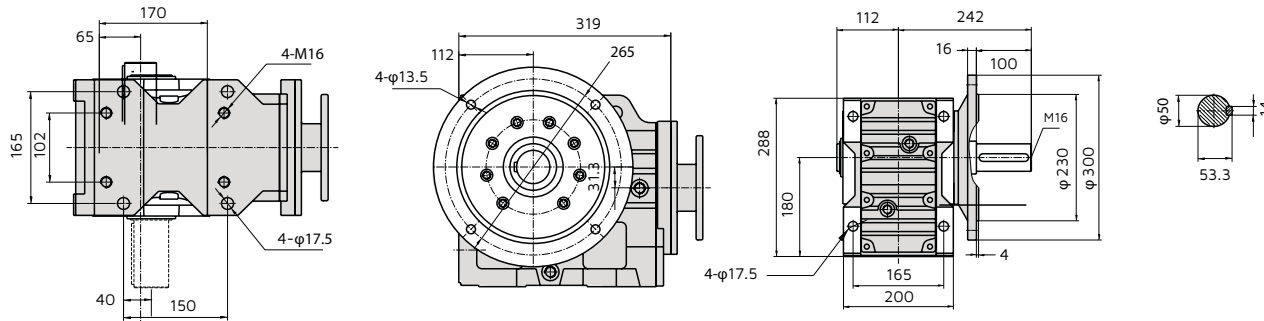
MKAF 77



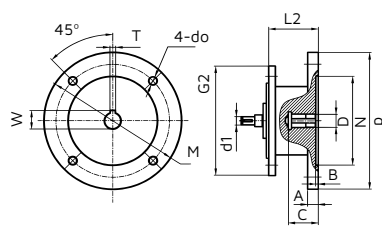
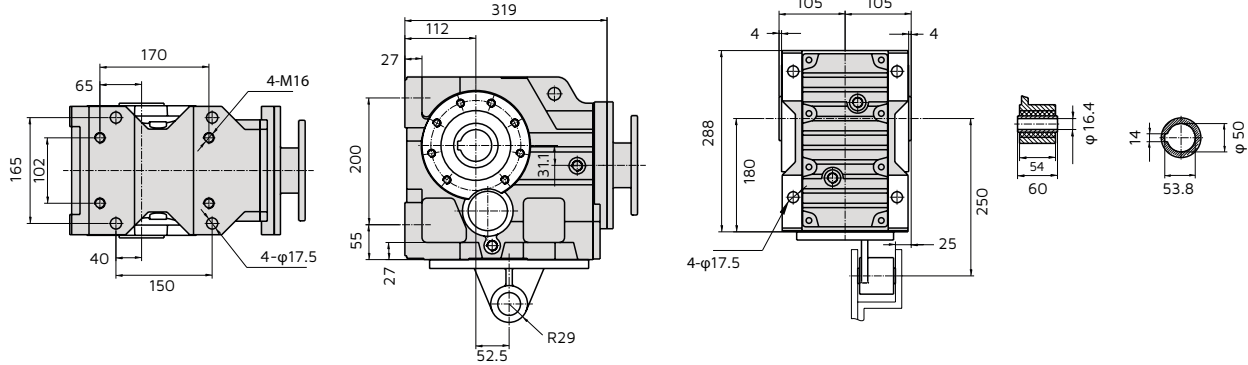
MK 77



MKF 77

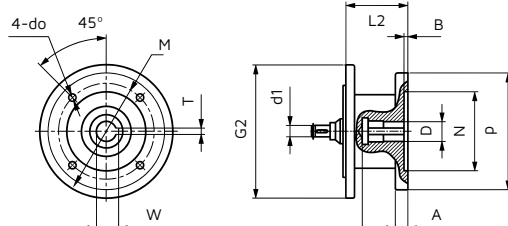


MKAT 77



63B5-200B5

PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B5	50	95	115	140	10	14	4	≥24	11	4	12.8
71B5	50	110	130	160	10	10	4	≥31	14	5	16.3
80B5	68.5	130	160	200	12	16	4	≥41	19	6	21.9
90B5	68.5	130	160	200	12	16	4	≥51	24	8	27.3
100B5	82.5	180	215	250	15	17	4.5	≥61	28	8	31.3
112B5	82.5	180	215	250	15	17	4.5	≥81	28	8	31.3
132B5	111	230	265	300	15	17	6	≥111	38	10	41.3
160B5	152.5	250	300	350	19	24	6	≥111	42	12	45.3

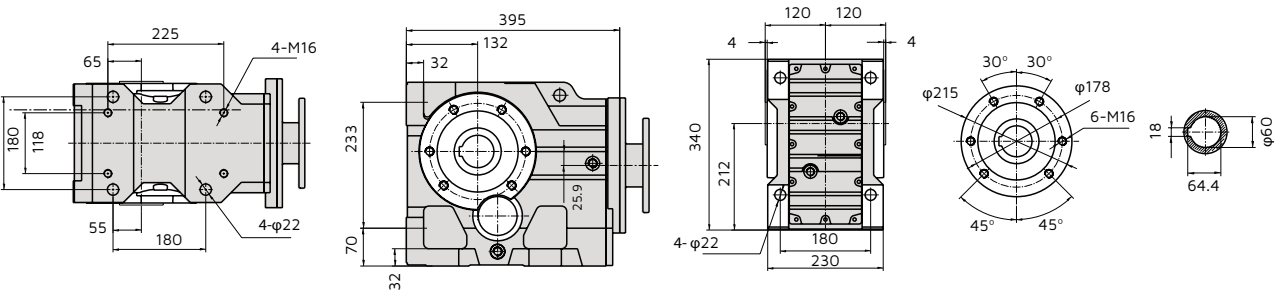


63B14-132B14

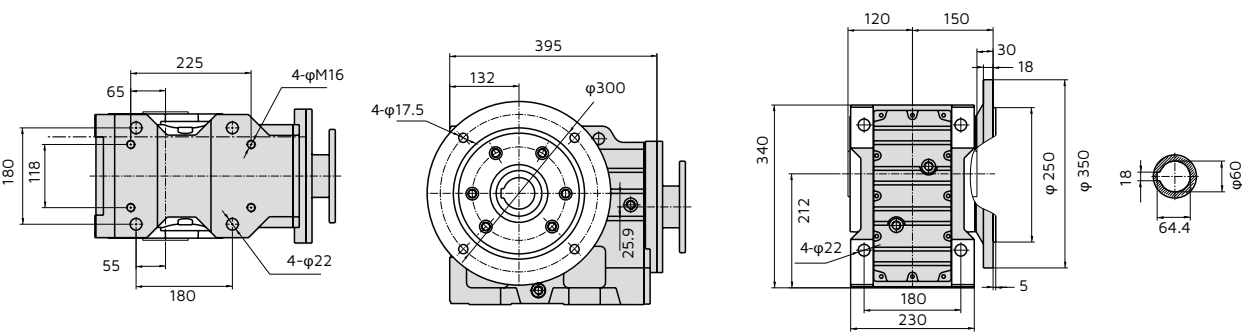
PAM	L2	N	M	P	do	A	N	<C	D	T	W
63B14	54	60	75	90	4-Ø6	9	3.5	34	11	4	12.8
71B14	54	70	85	105	4-Ø7	10	3.5	33.5	14	5	16.3
80B14	69	80	100	120	4-Ø7	12	4.5	59.5	19	6	21.9
90B14	69	95	115	140	4-Ø9	12	4.5	58.5	24	8	27.3
100B14	81	110	130	160	4-Ø9	15	5	66	28	8	31.3
112B14	81	110	130	160	4-Ø9	15	5	66	28	8	31.3
132B14	93	130	165	200	4-Ø11	16	5	85	38	10	41.3

2.6. DIMENSIONES MKA

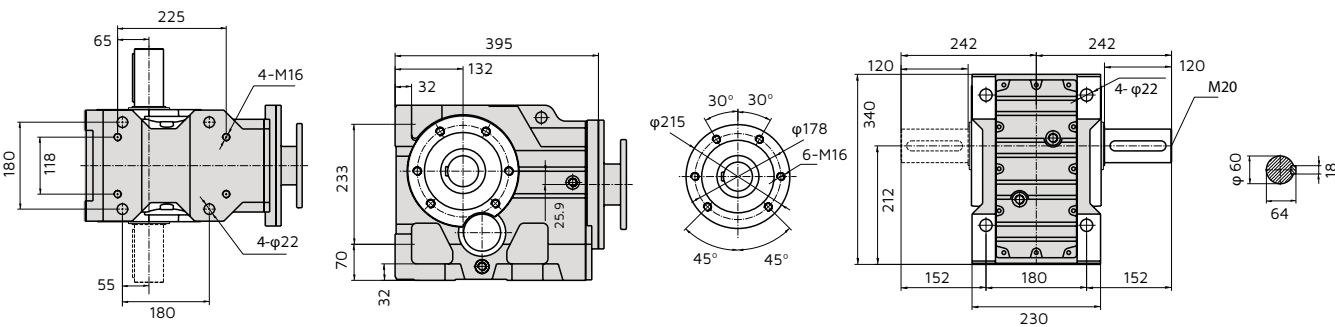
MKA 87



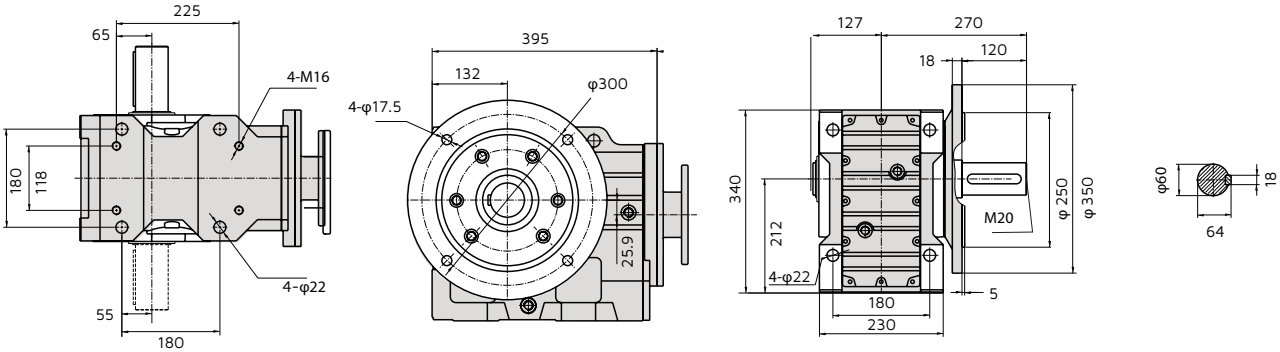
MKAF 87



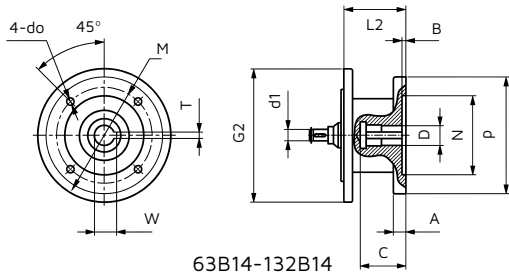
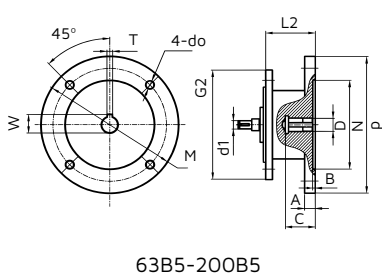
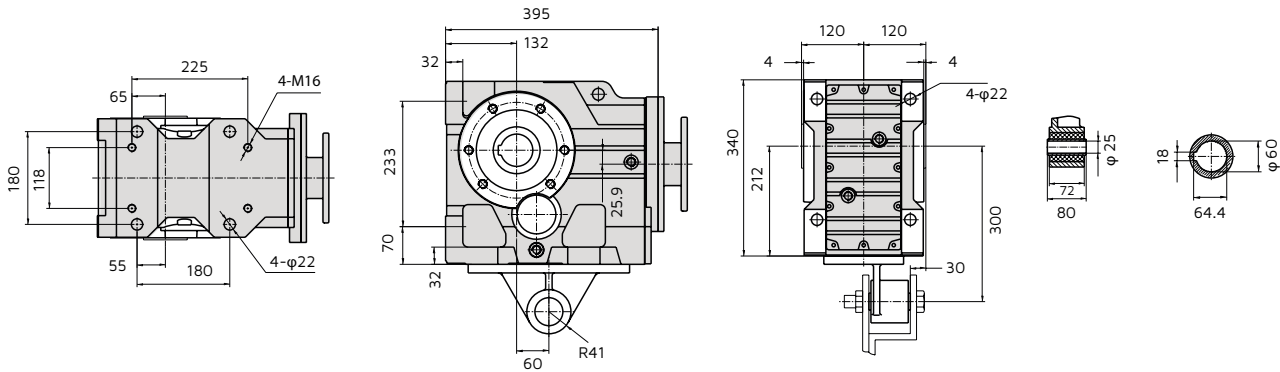
MK 87



MKF 87



MKAT 87

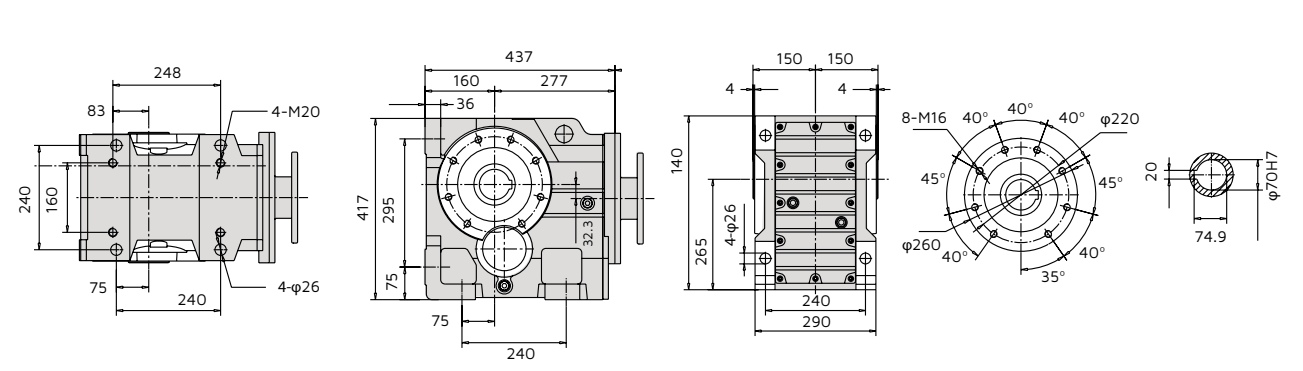


PAM	L2	N	M	P	dø	A	N	<C	D	T	W
80B5	63.5	130	160	200	12	16	4	≥41	19	6	21.9
90B5	63.5	130	160	200	12	18	4	≥51	24	8	27.3
100B5	78.5	180	215	250	15	18	4.5	≥61	28	8	31.3
112B5	106	180	215	250	15	18	4.5	≥81	28	8	31.3
132B5	106	230	265	300	15	20	6	≥111	38	10	41.3
160B5	147.5	250	300	350	19	23	6	≥111	42	12	45.3
180B5	147.5	250	300	350	19	23	6	≥111	48	14	51.8

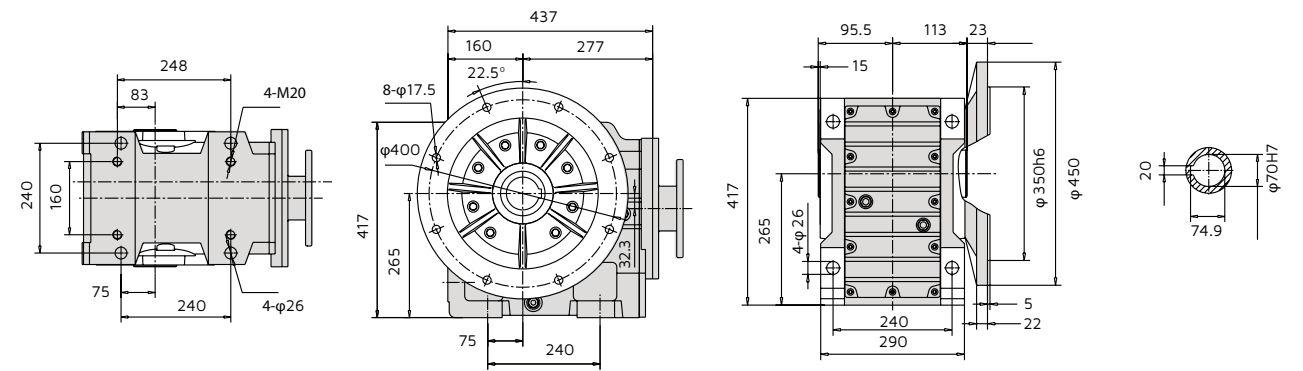
PAM	L2	N	M	P	dø	A	N	<C	D	T	W
80B14	69	80	100	120	4-Ø7	12	4.5	44.5	19	6	21.9
90B14	69	95	115	140	4-Ø9	12	4.5	58.5	24	8	27.3
100B14	81	110	130	160	4-Ø9	15	6	66	28	8	31.3
112B14	81	110	130	160	4-Ø9	15	6	66	28	8	31.3
132B14	92	130	165	200	4-Ø11	16	5	86	38	10	41.3

2.6. DIMENSIONES MKA

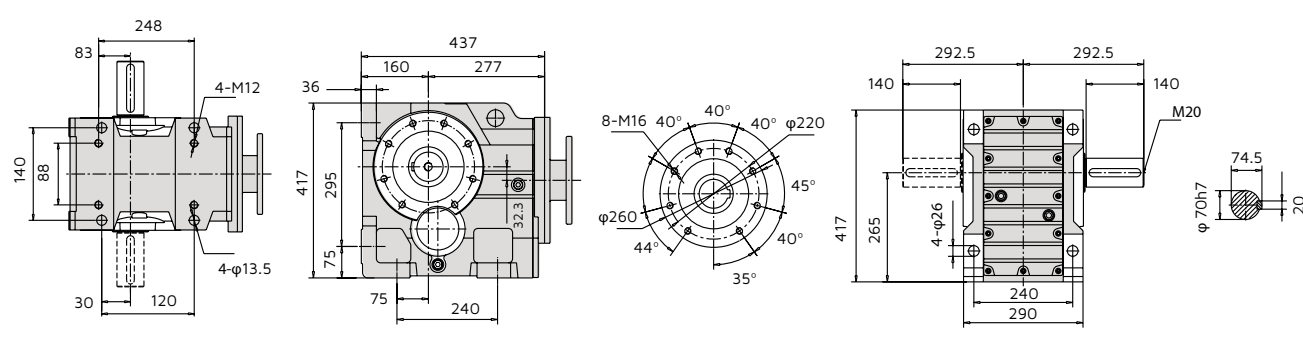
MKA 97



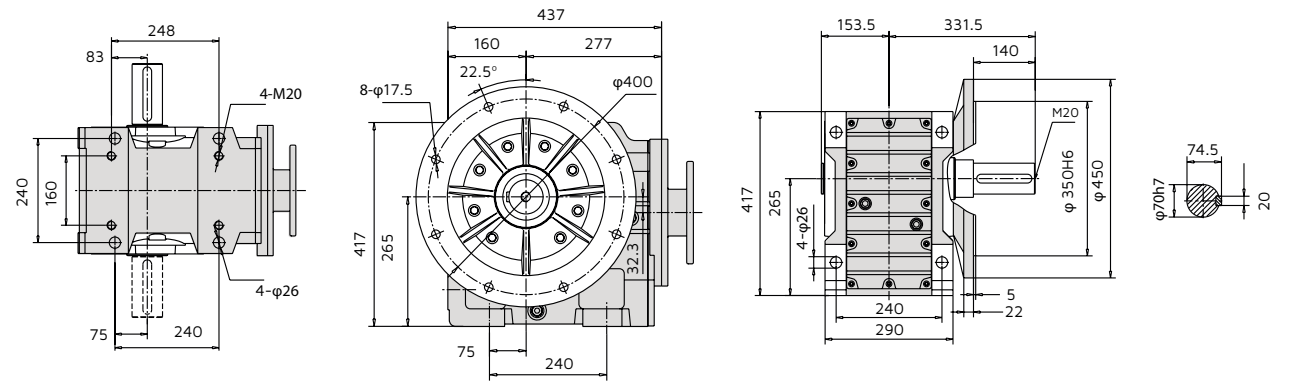
MKAF 97



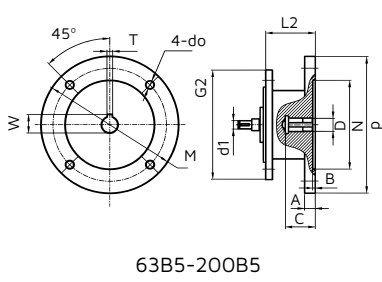
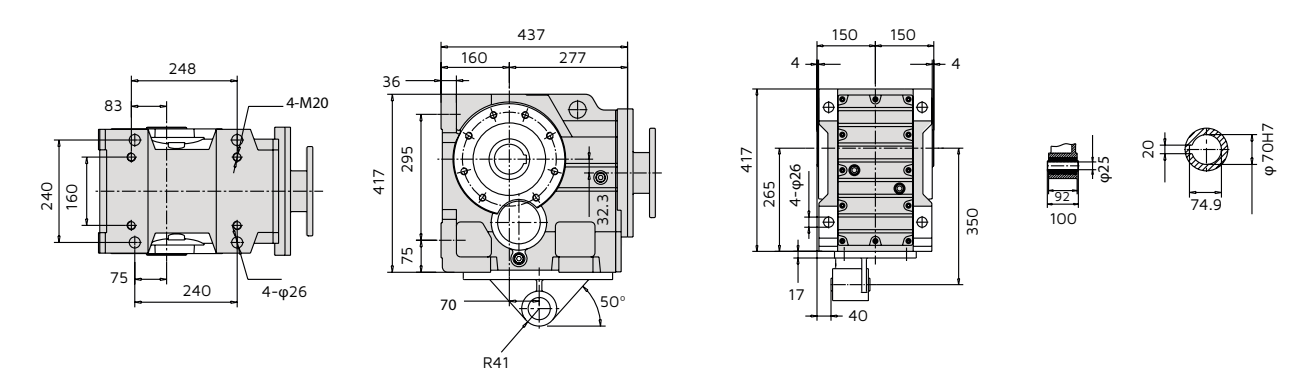
MK 97



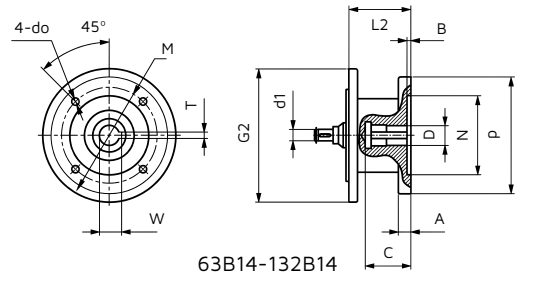
MKF 97



MKAT 97



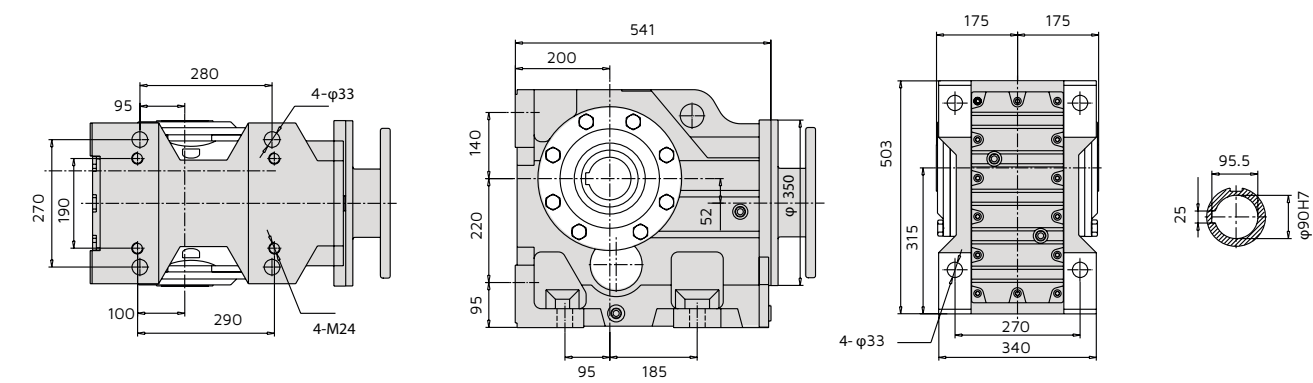
PAM	L2	N	M	P	do	A	N	<C	D	T	W
90B5	54.5	130	160	200	12	13	4	≥51	24	8	27.3
100B5	72.5	180	215	250	15	14	4.5	≥61	28	8	31.3
112B5	72.5	180	215	250	15	14	4.5	≥81	28	8	31.3
132B5	101	230	265	300	15	18	6	≥111	38	10	41.3
160B5	142.5	250	300	350	19	23	6	≥111	42	12	45.3
180B5	142.5	250	300	350	19	23	6	≥111	48	14	51.8
200B5	174.5	300	350	400	19	26	6	≥111	55	16	59.3



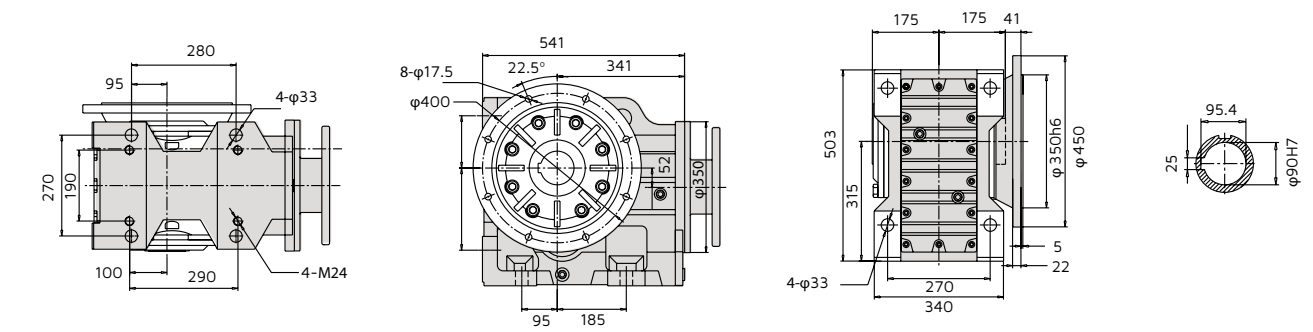
PAM	L2	N	M	P	do	A	N	<C	D	T	W
80B14	69	80	100	120	4-φ7	12	4.5	45	19	6	21.9
90B14	69	95	115	140	4-φ9	12	4.5	53.5	24	8	27.3
100B14	81	110	130	160	4-φ9	15	5	66	28	8	31.3
112B14	81	110	130	160	4-φ9	15	5	66	28	8	31.3
132B14	92	130	165	200	4-φ11	16	5	85	38	10	41.3

2.6. DIMENSIONES MKA

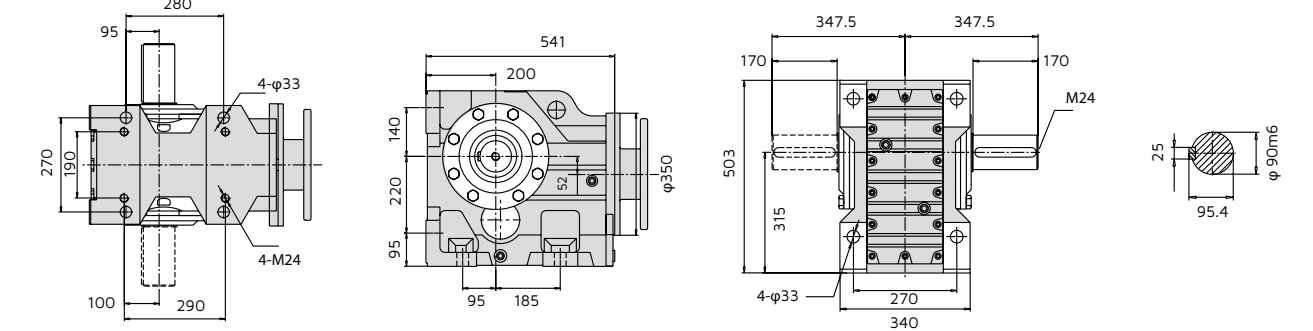
MKA 107



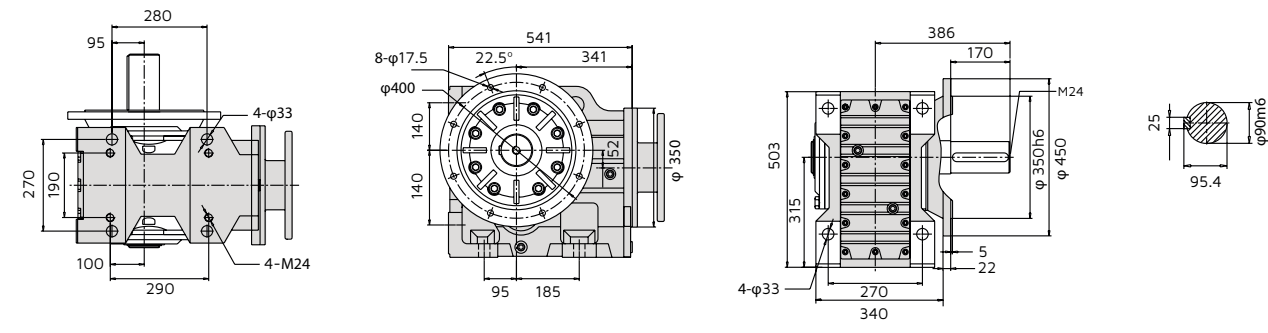
MKAF 107



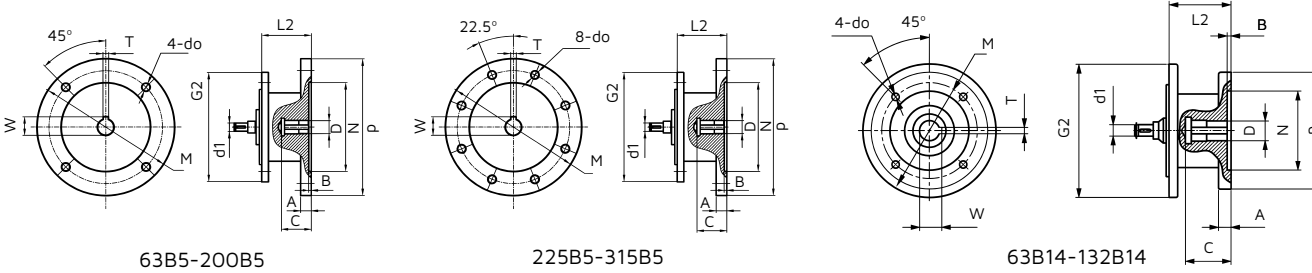
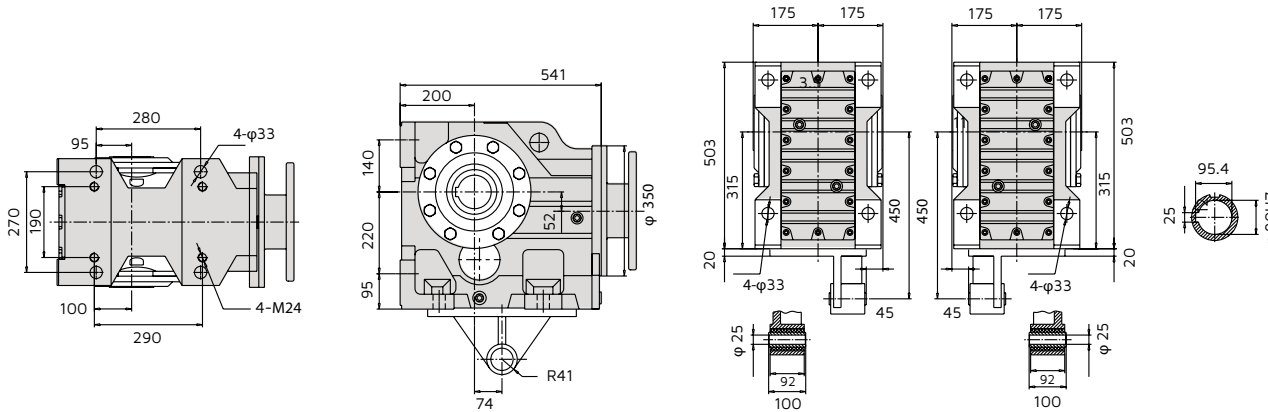
MK 107



MKF 107



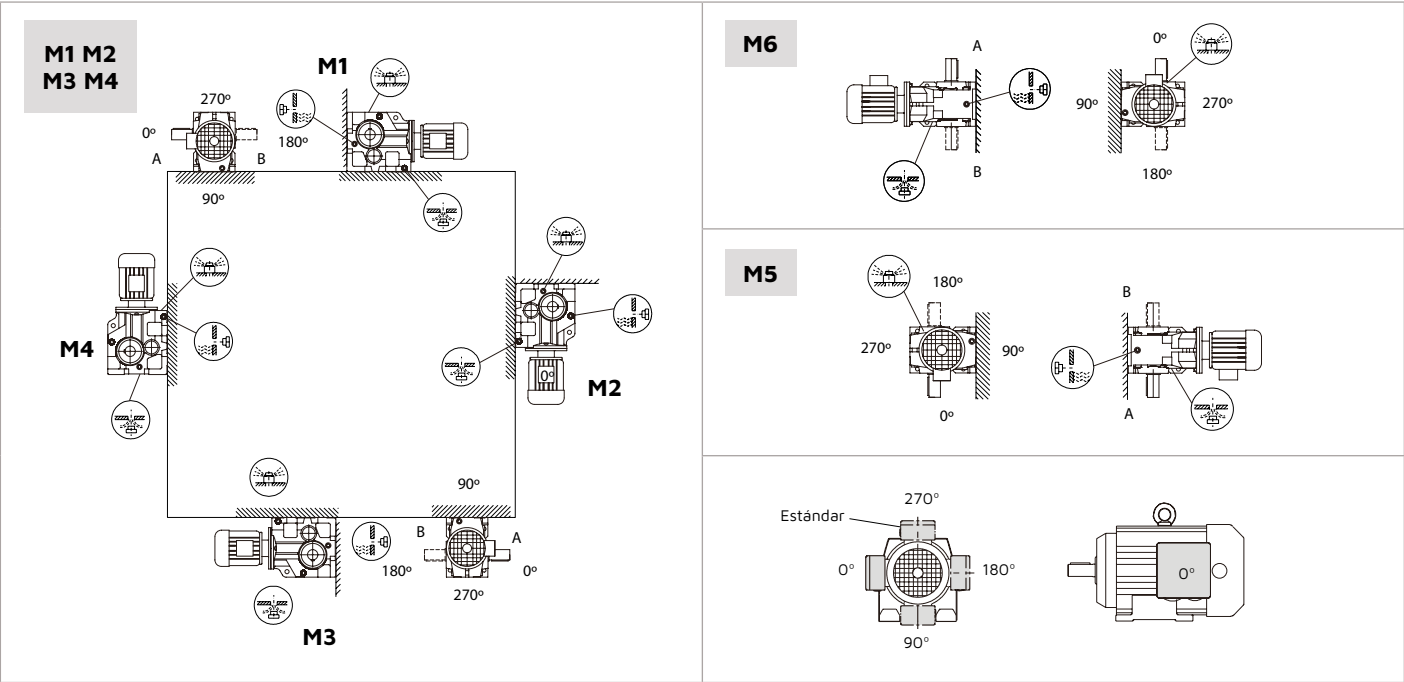
MKAT 107



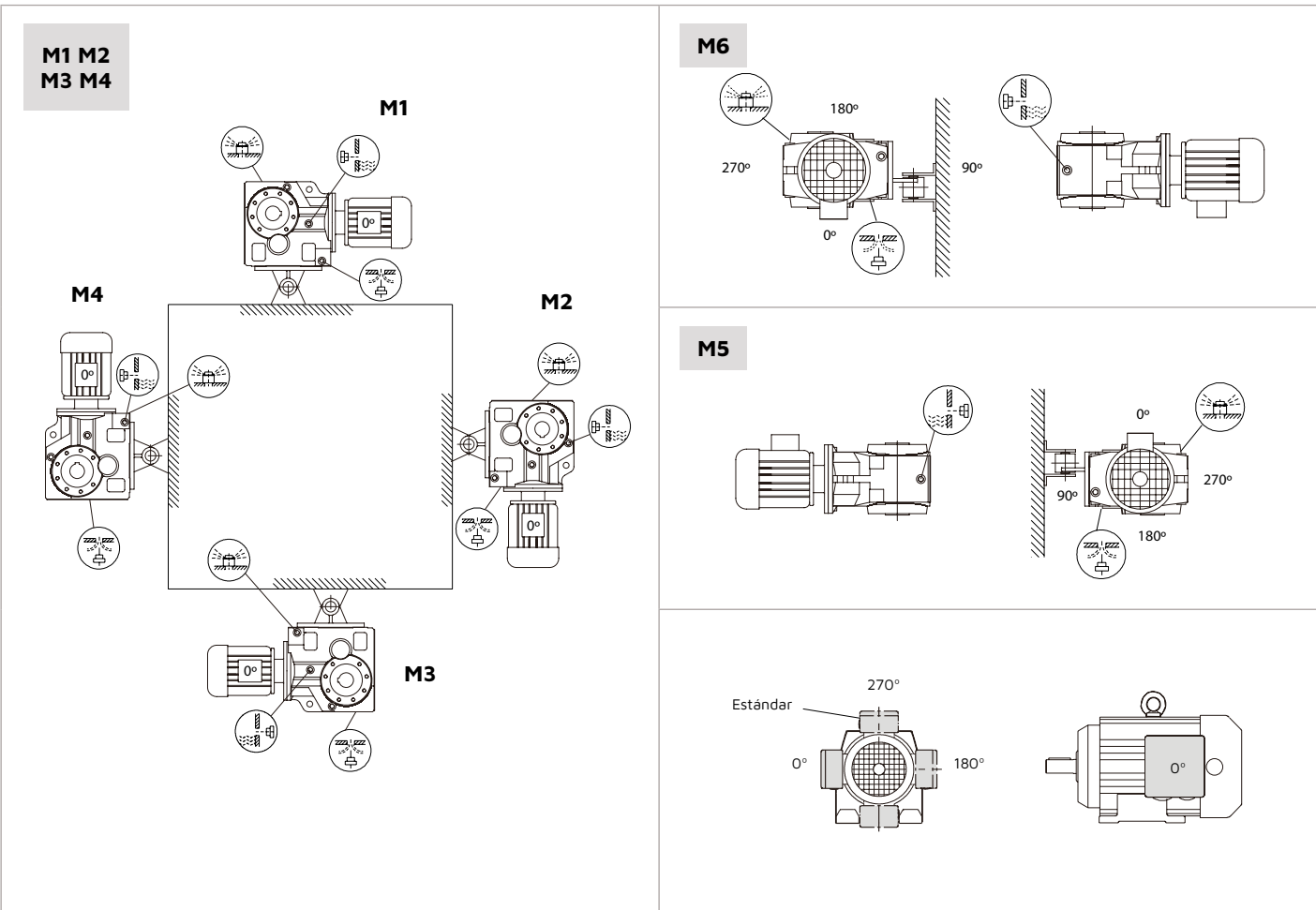
PAM	L2	N	M	P	do	A	N	<C	D	T	W
100B5	66.5	180	215	250	15	18	4.5	≥61	28	8	31.3
112B5	66.5	180	215	250	15	18	4.5	≥81	28	8	31.3
132B5	95	230	265	300	15	18	6	≥111	38	10	41.3
160B5	136.5	250	300	350	19	24	6	≥111	42	12	45.3
180B5	136.5	250	300	350	19	24	6	≥111	48	14	51.8
200B5	138.5	300	350	400	19	26	6	≥111	55	16	59.3
225B5	168.5	350	400	450	19	28	6	≥141	60	18	64.4

PAM	L2	N	M	P	do	A	N	<C	D	T	W
100B14	81	110	130	160	4-φ9	15	6	66	28	8	31.3
112B14	81	110	130	160	4-φ9	15	6	66	28	8	31.3
132B14	92	130	165	200	4-φ11	16	5	86	38	10	41.3

2.7. MK/MKA 37-107 Posición de montaje



2.8. MKAT37-107 Posición de montaje



2.9. MKF/MKAF37-107 Posición de montaje

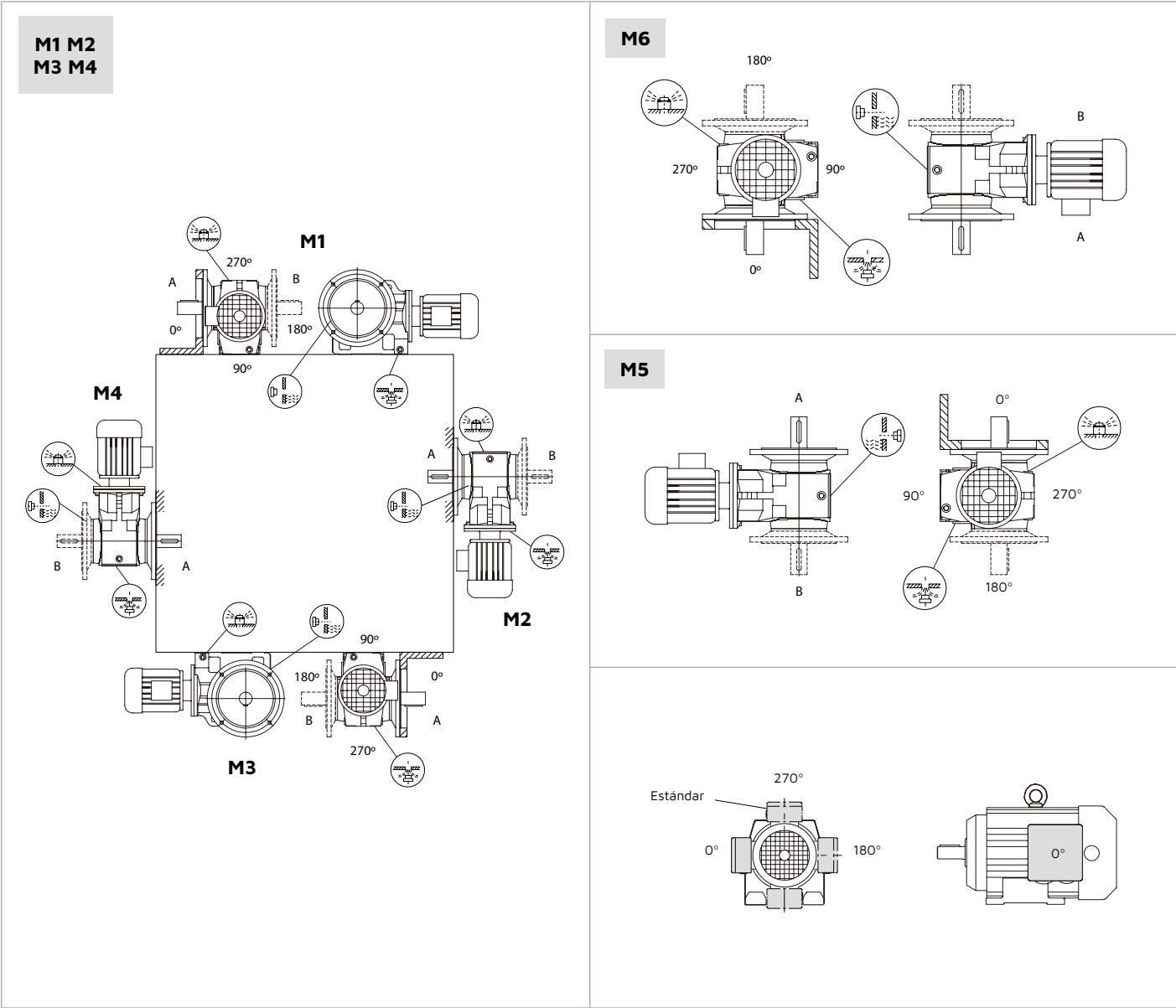
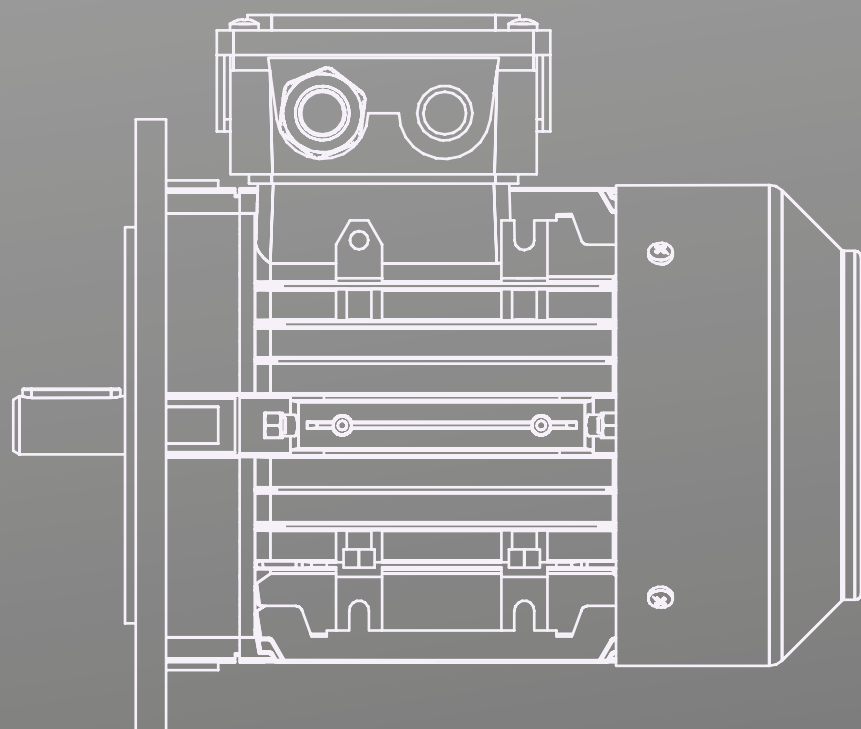


Tabla de capacidad de aceite de la serie MKA (Unidad :L)						
Modelo	Posición de montaje					
	M1	M2	M3	M4	M5	M6
MKA37	0.75	0.85	0.65	1.1	1	1
MKA47	0.9	1.4	1.4	1.9	1.8	1.8
MKA67	1.75	2.5	1.8	3	2.6	2.6
MKA77	3.5	3.7	2.9	5.8	4.5	4.5
MKA87	6.8	6.7	4.6	10	7.8	7.8
MKA97	12	13.5	8.9	19	16	16
MKA107	17	20	16	31	24	24

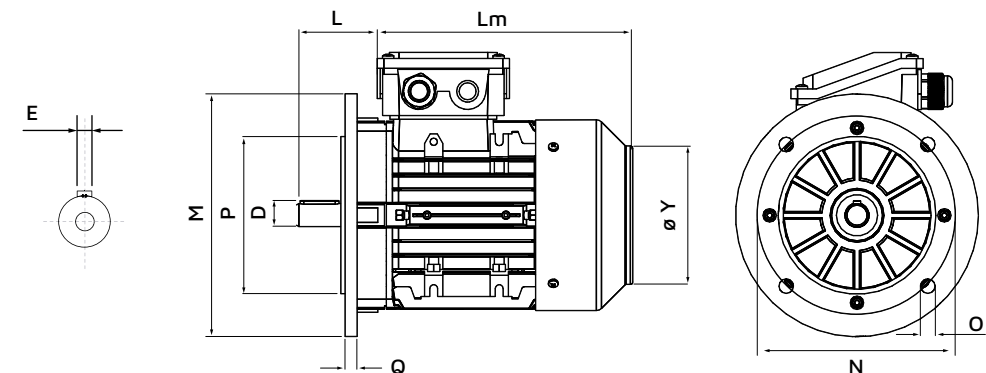


MOTORES ELÉCTRICOS

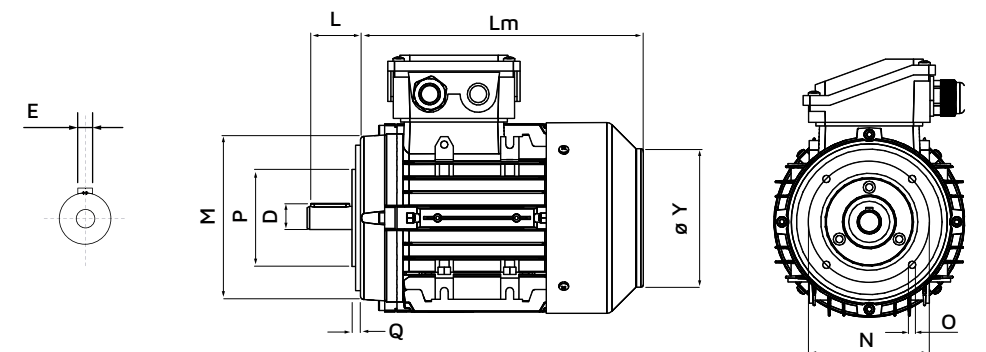
3.1. DIMENSIONES MOTORES ELÉCTRICOS

Dimensiones y datos técnicos / Dimensions and technical data

B5



B14



TIPO	2 Polos			4 Polos			6 Polos			B5-B14					B5					B14					Kg	
	kW	Nm	A	kW	Nm	A	kW	Nm	A	D	E	L	Lm	Y	P	N	M	O	Q	P	N	M	O	Q		
56 A	0.09	0.3	0.38	0.06	0.4	0.38	-	-	-	9	3	20	169	107	80	100	120	9	2.5	50	65	80	M5	2.5	2.7	
56 B	0.12	0.5	0.53	0.09	0.6	0.43	-	-	-																2.9	
63 A	0.18	0.6	0.58	0.12	1.0	0.57	0.09	1.0	0.54	11	4	23	191	123	95	115	140	9.5	3	60	75	90	M5	2.5	3.8	
63 B	0.25	0.9	0.90	0.18	1.4	0.65	0.12	1.4	0.67																4.2	
71 A	0.37	1.2	1.0	0.25	1.7	0.86	0.18	1.9	0.75	14	5	30	213	142	110	130	160	9.5	3.5	70	85	105	M6	3	5.9	
71 B	0.55	1.9	1.5	0.37	2.6	1.3	0.25	2.8	0.9																6.5	
80 A	0.75	2.5	1.8	0.55	3.9	1.6	0.37	4.0	1.4	19	6	40	237	160	130	165	200	11.5	3.5	80	100	120	M6	3	8.5	
80 B	1.1	3.8	2.5	0.75	5.2	2.2	0.55	5.8	2.0																10	
90 S	1.5	5.0	3.9	1.1	7.8	3.0	0.75	8.0	2.2	24	8	50	257	180	130	165	200	11.5	3.5	95	115	140	M8	3	12.5	
90 L	2.2	7.5	5.5	1.5	10	4.0	1.1	12	3.2				282												15	
90 LL	-	-	-	1.8	12	5.2	-	-	-				282												17	
100 LA	3	10	6.4	2.2	15	5.9	1.5	15	4.3	28	8	60	313	198	180	215	250	13	4	110	130	160	M8	3.5	20	
100 LB	-	-	-	3	20	7.5	1.8	19	5.0				313	198											22	
112 M	4	13.8	9.0	4	27	9.6	2.2	23	5.8	28	8	60	332	224	180	215	250	13	4	110	130	160	M8	3.5	35	
132 S	5.5	18	12.7	5.5	37	12.4	3	31	7.2	38	10	80	362	252	230	230	300	14	4	-	-	-	-	-	-	41
	7.5	25	17.0										402													51
132 M	9.2	30	18.5	7.5	50	16	4	42	10.8				402													51
132 L	-	-	-	9.2	62	19.5	5.5	56	14.0				402													61
160 M	11	37	24	11	74	25	7.5	74	17.0	42	12	110	491	316	250	300	350	18	5	-	-	-	-	-	-	102
	15	48	29										491													102
160 L	18.5	63	35	15	98	34	11	113	25				536													115
180 M	22	75	42	18.5	123	41	-	-	-	48	14	110	555	360	250	300	350	18	5	-	-	-	-	-	-	121
180 L	-	-	-	22	147	45	15	150	31				597													140
200 L	-	-	-	30	195	56	18.5	196	37	55	14	110	745	395	300	350	400	18	5	-	-	-	-	-	-	250
	-	-	-	-	-	-	22	233	43				745													250



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Parque Empresarial Cervelló
C/Macabeo. 10
08758 - Cervelló (Barcelona)
Tlf +34 936 630 740
comercial@brownadvance.com
www.brownadvance.com