HIGH EFFICIENCY HYPOID GEAR UNITS

BKM.. (MV)
Direct Motor Mount

BKM.. (IEC)
IEC Motor Mount

BKM.. (ST)
Servo Motor Mount

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DESIGN FEATURES

BKM series high efficiency hypoid gearboxes are a new generation of product.

Using very similar dimensional characteristics as the NMRV worm boxes, while offering an improved efficiency and performance, meeting the ongoing drive to reduce energy consumption.

Example comparison

Type	Ratio	Input Speed	Efficiency
BKM075	30.24	1400	90%
NMRV075	30	1400	60%

Housing made from high quality aluminium alloy frame 050-090, grey cast iron frame 110.

Gearing made from carbon steel, carbonization, and nitride heat treatment with ground finish.

- Painted in RAL7035 Grey or RAL5010 Blue
- Ratios from 7.5:1 – 300:1
- 0.09kW – 5.5kW motor input power.
- 2, 4, 6 pole motors
- Up to 750Nm Torque
- Solid shaft, Hollow shaft & Shrink disk output options.
- Foot, face, flange or torque arm mounting options.
- Gearbox only or Geared motor combinations.
- Servo motor / IEC motor input options

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TYPE CODE CONFIGURATION

Gearbox | Motor

BKM 063 2 / 20.25 / FA1 / SS1 / B3 / 71B5-0.37-4P / BMG / 1 / X

1 2 3 4 5 6 7 8 9 10 11

1. **Code for gearbox series – BKM**
2. **Gearbox size 050-110**
3. **No. of stages 2 / 3**
4. **Ratio**
5. **Output flange and position (blank if no flange)**
6. **Output shaft and position (blank is hollow shaft)**
7. **Mounting Position**
8. **Gearbox Input (motor type, connection)**
9. **Brake (blank if no brake)**
10. **Motor terminal box position**
11. **Gland position (X default)**

GEARBOX RATINGS

Gearbox Size	Torque Range (Nm)	Radial Load Range (N)
BKM050	80-130	1510-4100
BKM063	110-200	1710-4800
BKM075	200-350	2330-6500
BKM090	300-500	2950-8300
BKM110	520-750	3280-10000

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GEARBOX COMBINATION SELECTION TABLES

BKM050 geometrical combination (motor speed 1400rpm)

Gearbox Size	Ratio Nominal	Ratio Actual	Speed (r/min)	Nominal Torque (Nm)	Radial Force (N)	MV63	MV71	MV80	MV90
3 Stage									
BKM0503	300	291.79	4.8	130	4100				
BKM0503	250	244.29	5.7	130	4100				
BKM0503	200	200.44	7.0	130	4100				
BKM0503	150	146.67	9.5	130	4000				
BKM0503	125	120.34	11.6	130	3770				
BKM0503	100	101.04	13.9	100	3560				
BKM0503	75	74.62	18.8	80	3220				
BKM0503	60	62.36	22	130	3030				
BKM0503	50	52.36	27	100	2860				
2 Stage									
BKM0502	60	58.36	24	130	2960				
BKM0502	50	48.86	29	130	2790				
BKM0502	40	40.09	35	130	2610				
BKM0502	30	29.33	48	130	2350				
BKM0502	25	24.07	58	130	2200				
BKM0502	20	20.21	69	100	2080				
BKM0502	15	14.92	94	80	1880				
BKM0502	12.5	12.47	112	130	1770				
BKM0502	10	10.47	134	100	1670				
BKM0502	7.5	7.73	181	80	1510				

BKM063 geometrical combination (motor speed 1400rpm)

Gearbox Size	Ratio Nominal	Ratio Actual	Speed (r/min)	Nominal Torque (Nm)	Radial Force (N)	MV63	MV71	MV80	MV90
3 Stage									
BKM0633	300	302.50	4.6	200	4800				
BKM0633	250	243.57	5.7	200	4800				
BKM0633	200	196.43	7.1	180	4800				
BKM0633	150	151.56	9.2	200	4650				
BKM0633	125	122.22	11.5	180	4330				
BKM0633	100	101.27	13.8	150	4070				
BKM0633	75	73.33	19.1	110	3650				
BKM0633	60	63.33	22	180	3480				
BKM0633	50	52.48	27	150	3270				
2 Stage									
BKM0632	60	60.50	23	200	3430				
BKM0632	50	48.71	29	200	3190				
BKM0632	40	39.29	36	180	2970				
BKM0632	30	30.31	46	200	2720				
BKM0632	25	24.44	57	180	2530				
BKM0632	20	20.25	69	150	2380				
BKM0632	15	14.67	95	110	2130				
BKM0632	12.5	12.67	110	180	2030				
BKM0632	10	10.50	133	150	1910				
BKM0632	7.5	7.60	184	110	1710				

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GEARBOX COMBINATION SELECTION TABLES

BKM075 geometrical combination (motor speed 1400rpm)

Gearbox Size	Ratio Nominal	Ratio Actual	Speed (r/min)	Nominal Torque (Nm)	Radial Force (N)	MV63	MV71	MV80	MV90	MV100	MV112
3 Stage											
BKM0753	300	297.21	4.7	350	6500						
BKM0753	250	240.89	5.8	350	6500						
BKM0753	200	200.66	7.0	300	6500						
BKM0753	150	151.20	9.3	350	6500						
BKM0753	125	125.95	11.1	300	5980						
BKM0753	100	99.22	14.1	240	5520						
BKM0753	75	75.45	18.6	200	5040						
BKM0753	60	62.43	22	300	4730						
BKM0753	50	49.18	28	240	4370						
2 Stage											
BKM0752	60	59.44	24	350	4660						
BKM0752	50	48.18	29	350	4340						
BKM0752	40	40.13	35	300	4080						
BKM0752	30	30.24	46	350	3720						
BKM0752	25	25.19	56	300	3500						
BKM0752	20	19.84	71	240	3230						
BKM0752	15	15.09	94	200	2950						
BKM0752	12.5	12.49	112	300	2770						
BKM0752	10	9.84	142	240	2550						
BKM0752	7.5	7.48	187	200	2330						

BKM090 geometrical combination (motor speed 1400rpm)

Gearbox Size	Ratio Nominal	Ratio Actual	Speed (r/min)	Nominal Torque (Nm)	Radial Force (N)	MV63	MV71	MV80	MV90	MV100	MV112
3 Stage											
BKM0903	300	295.18	4.7	500	8300						
BKM0903	250	240.89	5.8	500	8300						
BKM0903	200	200.66	7.0	480	8300						
BKM0903	150	151.20	9.3	500	8050						
BKM0903	125	125.95	11.1	480	7580						
BKM0903	100	99.22	14.1	380	7000						
BKM0903	75	75.45	18.6	300	6390						
BKM0903	60	62.43	22	480	6000						
BKM0903	50	49.18	28	380	5540						
2 Stage											
BKM0902	60	59.04	24	500	5890						
BKM0902	50	48.18	29	500	5500						
BKM0902	40	40.13	35	480	5170						
BKM0902	30	30.24	46	500	4710						
BKM0902	25	25.19	56	480	4430						
BKM0902	20	19.84	71	380	4090						
BKM0902	15	15.09	94	300	3730						
BKM0902	12.5	12.49	112	480	3510						
BKM0902	10	9.84	142	380	3240						
BKM0902	7.5	7.48	187	300	2950						

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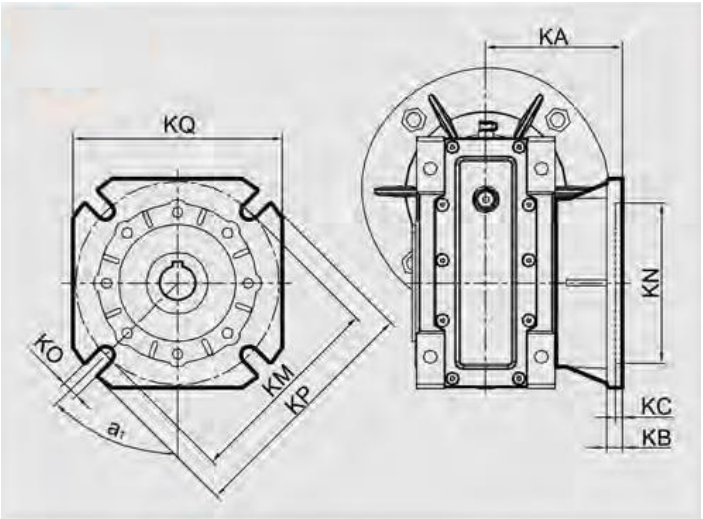
GEARBOX COMBINATION SELECTION TABLES

BKM110 geometrical combination (motor speed 1400rpm)

Gearbox Size	Ratio Nominal	Ratio Actual	Speed (r/min)	Nominal Torque (Nm)	Radial Force (N)	MV71	MV80	MV90	MV100	MV112	MV132
3 Stage											
BKM1103	300	296.10	4.7	750	8300						
BKM1103	250	244.29	5.7	750	8300						
BKM1103	200	206.29	6.8	750	8300						
BKM1103	150	153.33	9.1	750	8050						
BKM1103	125	129.48	10.8	750	7580						
BKM1103	100	103.64	13.5	650	7000						
BKM1103	75	75.55	18.5	520	6390						
BKM1103	60	64.18	22	750	6000						
BKM1103	50	51.37	27	650	5540						
2 Stage											
BKM1102	60	59.22	24	750	5890						
BKM1102	50	48.86	29	750	5500						
BKM1102	40	41.26	34	750	5170						
BKM1102	30	30.67	46	750	4710						
BKM1102	25	25.90	54	750	4430						
BKM1102	20	20.73	68	650	4090						
BKM1102	15	15.11	93	520	3730						
BKM1102	12.5	12.84	109	750	3510						
BKM1102	10	10.27	136	650	3240						
BKM1102	7.5	7.49	187	520	2950						

OUTLINE DIMENSIONS

BKM	FA								
	a1	KA	KB	KC	KM	KN_{H8}	KO	KP	KQ
050	45°	90	9	5	85	70	11	125	110
063	45°	82	10	6	150	115	11	180	142
075	45°	111	13	6	165	130	14	200	170
090	45°	111	13	6	175	152	14	210	200
110	45°	139	15	6	230	170	14	280	260
	FB								
050	45°	120	9	5	85	70	11	125	110
063	45°	112	10	6	150	115	11	180	142
075	45°	90	13	6	103	110	11	160	-
090	45°	122	18	6	215	180	14	250	-
	FC								
050	45°	89	10	5	130	110	9	160	-
063	45°	98	10	5	165	130	11	200	-
075	45°	110	17	6	165	130	11	200	-
	FD								
050	45°	72	14.5	5	115	95	11	140	-
063	45°	107	10	5	165	130	11	200	-
075	45°	151	13	6	175	152	14	210	-
	FE								
063	45°	80.5	16.5	5	130	110	11	160	-



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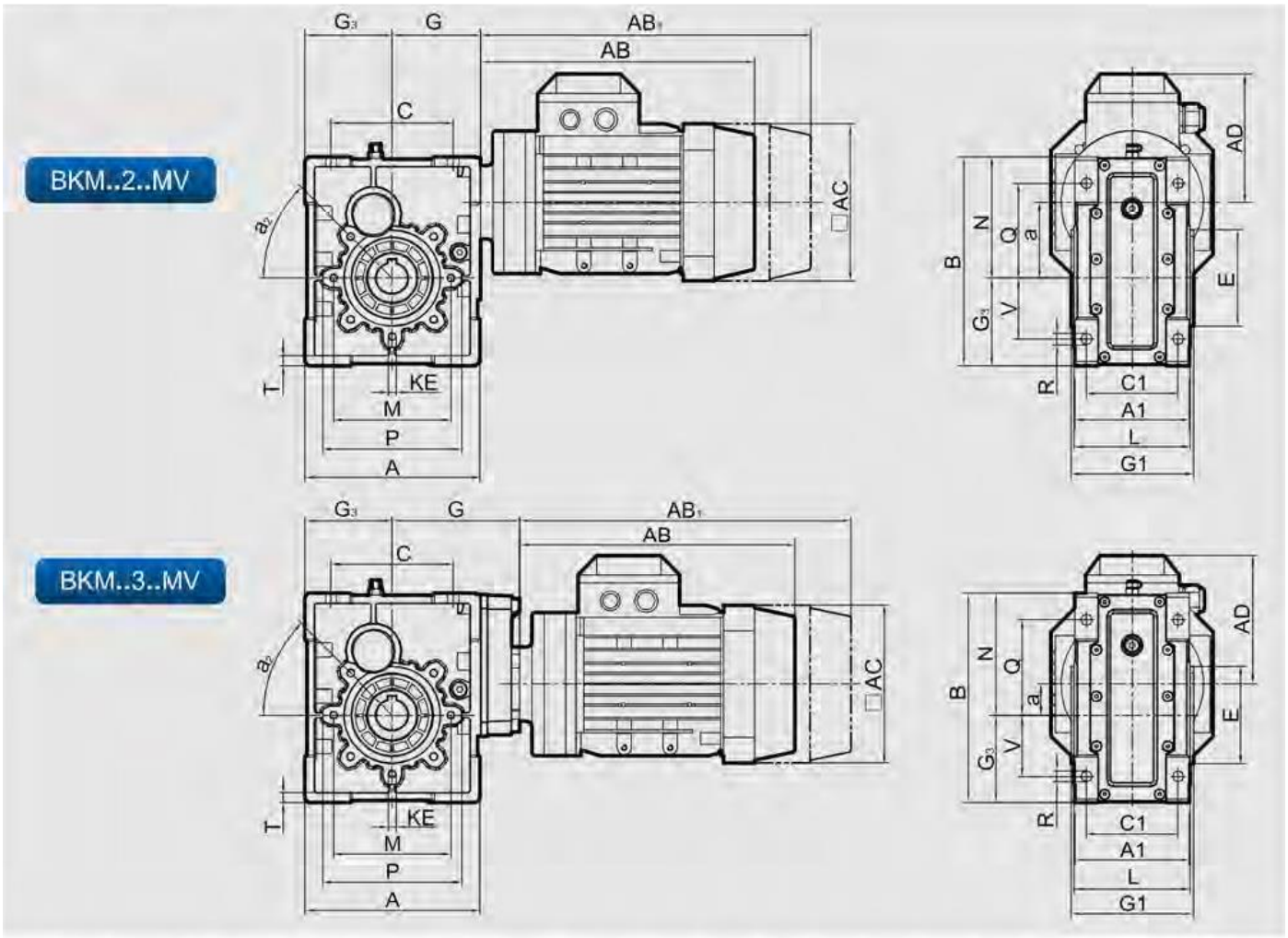
OUTLINE DIMENSIONS



BKM	C	A	B	G	G,	a	Cr	KE	a2	L	G,	M	EH7	A1	R	p	Q	N	T	V
0502	80	120	155	61	60	57	70	4-M8x12	45•	87	92	85	70	85	8.5	100	75	95	7	40
0503	80	120	155	95	60	21.5	70	4-M8x12	45•	87	92	85	70	85	8.5	100	75	95	7	40
0632	100	144	174	72	72	64.5	85	7-M8x14	45•	106	112	95	80	103	8.5	110	80	102	9	50
0633	100	144	174	106	72	29	85	7-M8x14	45•	106	112	95	80	103	8.5	110	80	102	9	50
0752	120	172	205	87	86	74.5	90	7-M8x16	45•	114	120	115	95	112	11	140	93	119	10	60
0753	120	172	205	126	86	30.5	90	7-M8x16	45•	114	120	115	95	112	11	140	93	119	10	60
0902	140	206	238	104	103	88	100	7-M10x22	45•	134	140	130	110	130	13	160	102	135	11	70
0903	140	206	238	143	103	44	100	7-M10x22	45•	134	140	130	110	130	13	160	102	135	11	70
1102	170	255	295	127.5	127.5	108	115	7-M10x25	45•	148	155	165	130	144	14	185	125	167,5	16	85
1103	170	255	295	177.5	127.5	52	155	7-M10x25	45•	148	155	165	130	144	14	185	125	167.5	16	85

MV..	63	71	80	90S	90L	100	112	132
AB	211	226	261	285	295	355	373	424
AB1	266	290	354	370	380	440	453	504
AC	120	130	145	160	160	185	200	245
AD	104	109	110	115	115	140	158	178

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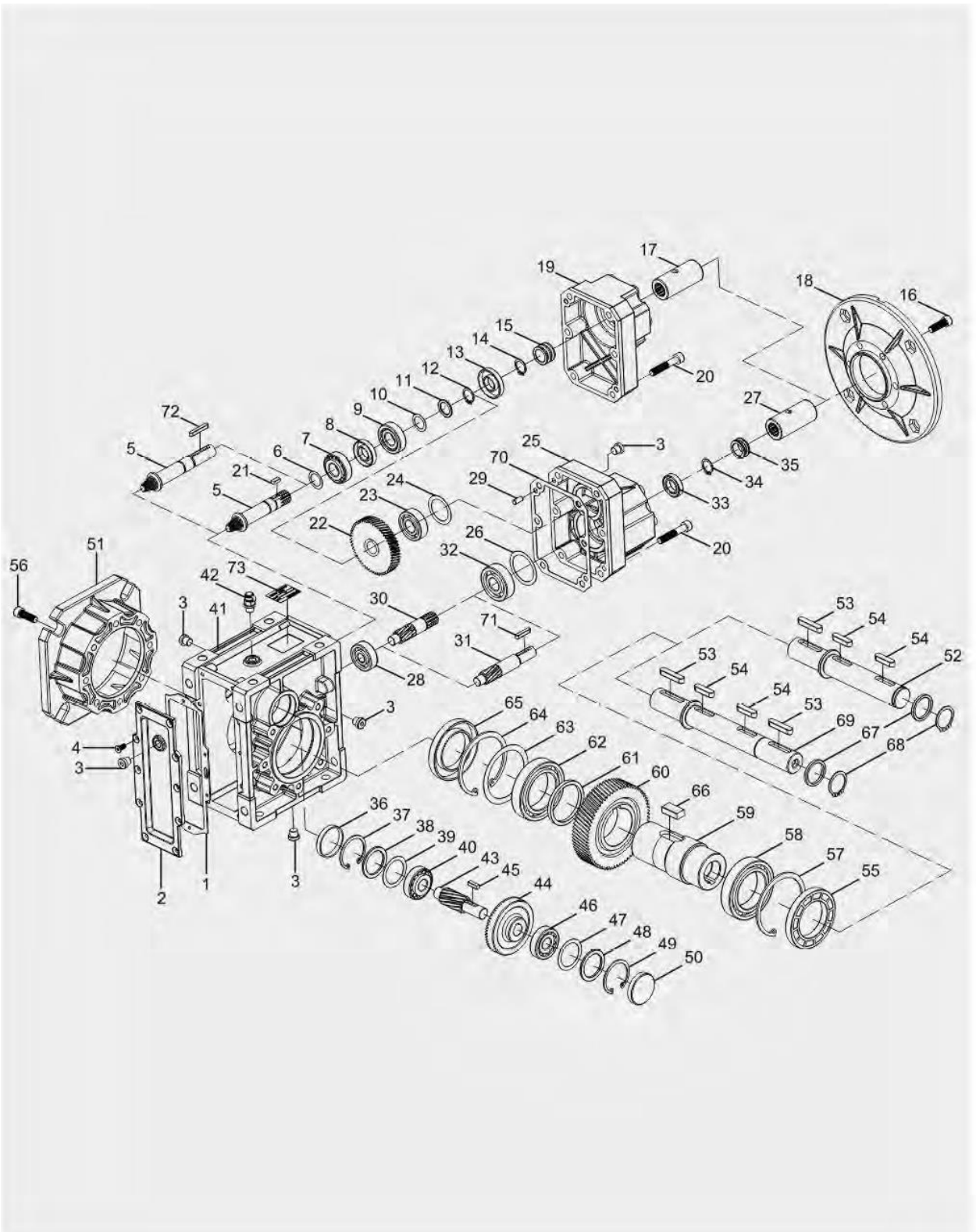
GEARBOX CONSTRUCTION



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APPLICATIONS AND ADVANTAGES

High-efficiency hypoid servo gear units find applications in various industries and scenarios where precise motion control, high torque, and efficiency are required. Some popular applications include:

1. **Industrial Automation:** These gear units are widely used in industrial automation systems for precise positioning, conveying, and handling tasks. They can be found in robotics, CNC machinery, material handling equipment, and assembly lines.
2. **Packaging Machinery:** In packaging machinery such as form-fill-seal machines, cartoners, and case packers, hypoid servo gear units ensure smooth and precise movement of components like conveyor belts, arms, and sealing mechanisms.
3. **Machine Tools:** High-efficiency hypoid servo gear units are integral components of machine tools like milling machines, lathes, and grinding machines. They provide the necessary torque and precision for cutting, shaping, and finishing operations.
4. **Printing Equipment:** Printing presses and digital printers utilize servo gear units for precise paper handling, ink distribution, and registration control. Hypoid gear units ensure accurate positioning and smooth operation in high-speed printing applications.
5. **Medical Devices:** Equipment in the medical industry often requires precise motion control, such as in imaging devices, diagnostic equipment, and surgical robots. Hypoid servo gear units enable precise movement in these applications while maintaining efficiency and reliability.
6. **Renewable Energy:** Hypoid servo gear units play a vital role in renewable energy systems such as wind turbines and solar tracking systems. They help convert the variable motion of wind or sunlight into consistent rotational motion, optimizing energy production.
7. **Automotive Manufacturing:** In automotive assembly lines, hypoid servo gear units are used for tasks such as welding, painting, and component placement. They ensure accurate positioning of robotic arms and tools for efficient production processes.
8. **Aerospace and Defence:** Aerospace and defence applications require precision, reliability, and compactness. Hypoid servo gear units are used in systems like radar antennas, missile guidance systems, and satellite dish positioning mechanisms.
9. **Food and Beverage Industry:** In food processing and packaging equipment, where hygiene and precision are critical, hypoid servo gear units find applications in tasks like mixing, portioning, and packaging.
10. **Material Handling:** Whether in warehouses, distribution centres, or logistics operations, hypoid servo gear units are used in conveyors, lifts, and automated storage systems for efficient and precise movement of goods.

Overall, the high efficiency, precision, and versatility of hypoid servo gear units make them essential components in a wide range of industrial and commercial applications where motion control is paramount.

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