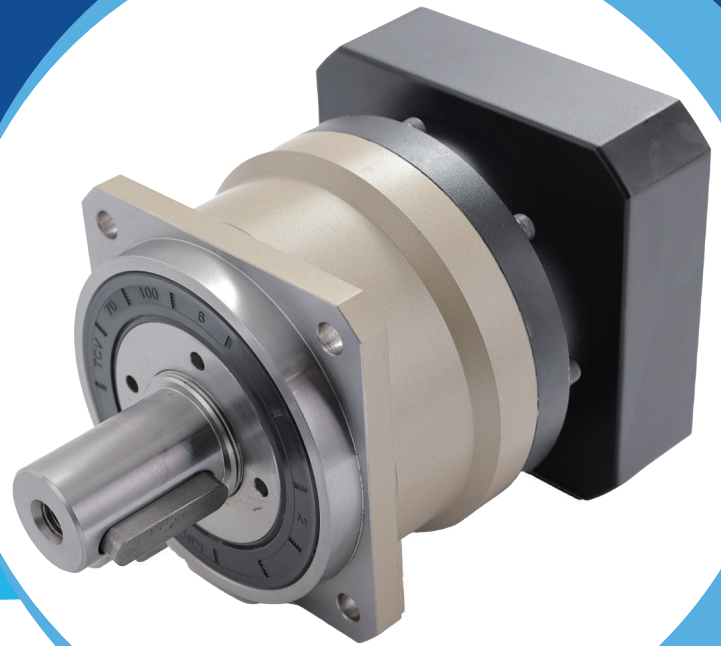
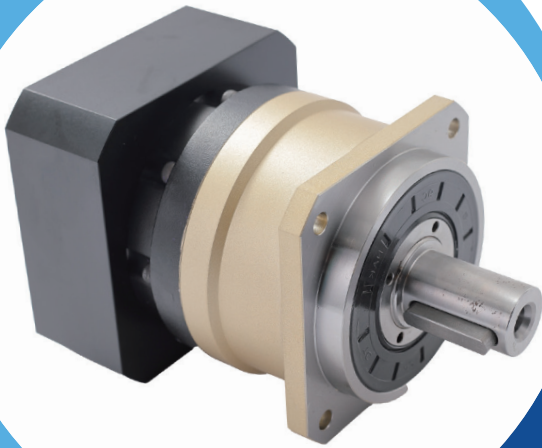




MPB/MPEB系列减速机

MPB/MPEB SERIES REDUCER



我们为客户定制高精度、高刚性，
高扭矩的精密行星减速器，
MPB系列在技术方面为您提供创新和先进的
解决方案，以达到超高效率。

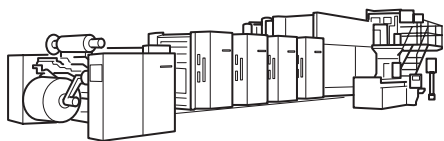
We customize the planetary reducers with high precision
high rigidity and high torque for customers.
The MPB series provides you with innovative and advanced
solutions in technology to maximize efficiency.

技术参考* TECHNICAL PARAMETERS

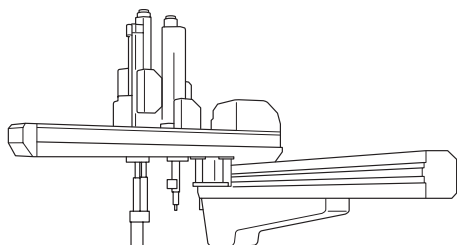
速比 Ratio	i	3~100
回程间隙 Backlash	Arcmin	≤3/≤5
额定输出力矩 Rated output torque	Nm	32~540
使用温度 Operating temperature	°C	-10~90
防护等级 Degree of protection	IP65	
工作效率 Work efficiency	%	95
工作寿命 Working life	h	20000



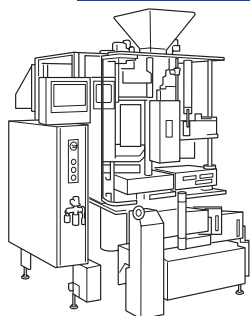
■ 印刷机
Printer



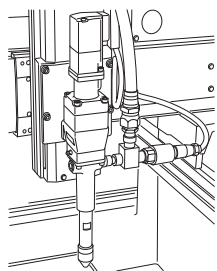
■ 龙门机器人
Gantry robot



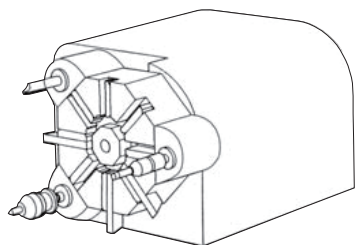
■ 包装机(纵型轴衬)
Packing machine(vertical pillow)



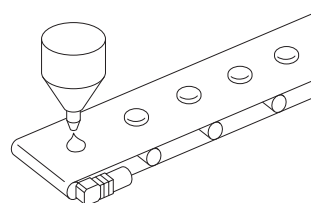
■ 分配器机器人
Dispenser robot



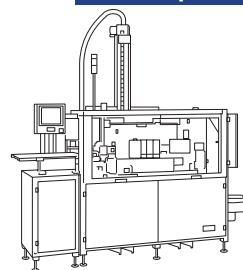
■ 回转头
Turret head



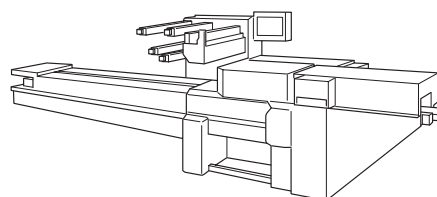
■ 传送带
Conveyer-belt



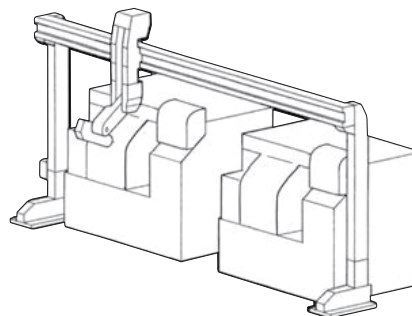
■ 自动装箱机
Auto packing sealing machine



■ 包装机(横型轴衬)
Packing machine(horizontal pillow)

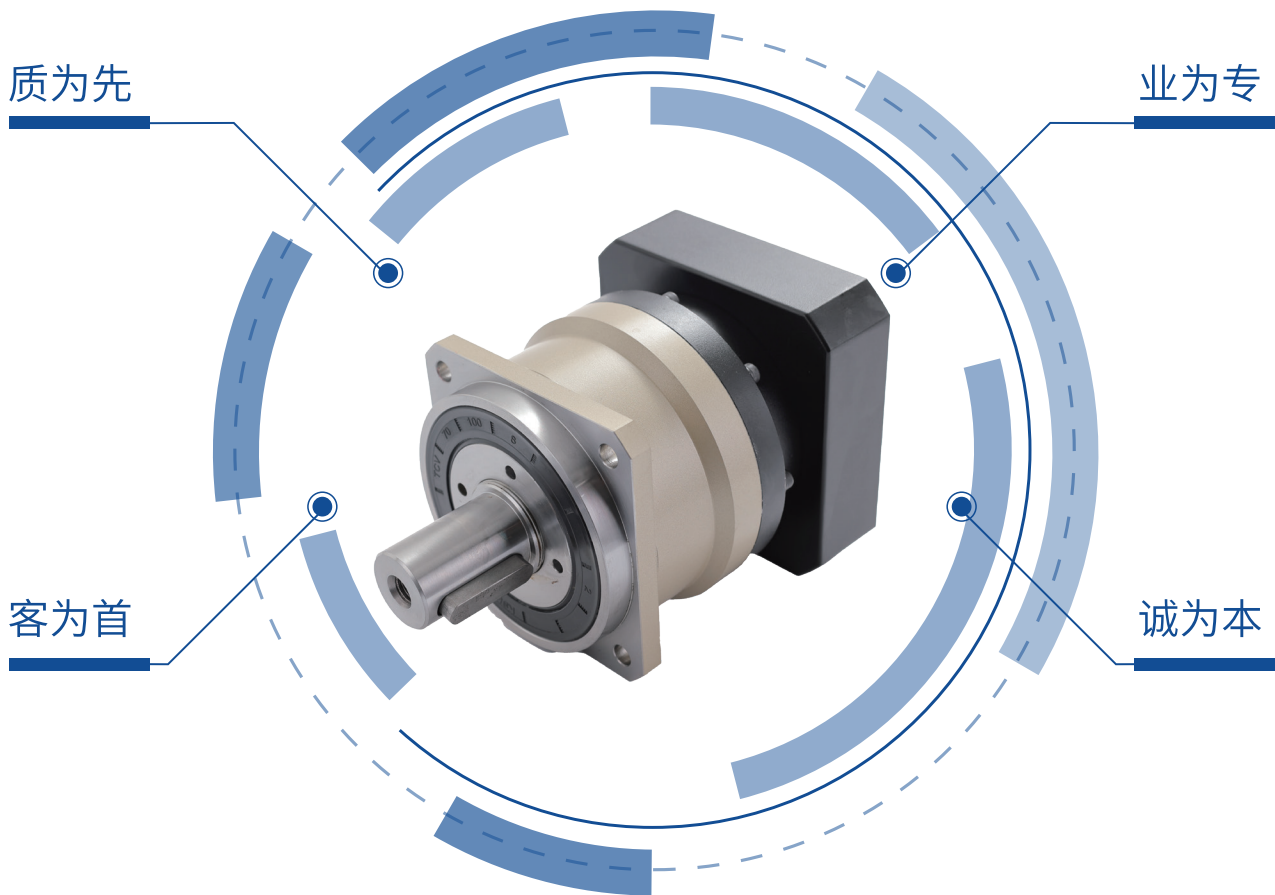


■ 装料机器人
Loader robot



备有各种实例。
可在各种装置上安装。

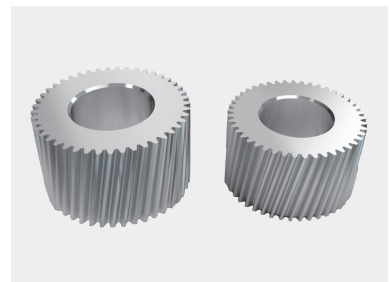
**Attachable and applicable to a range
of applications and devices**



MPB系列—超高效率
MPB serice-super high efficiency



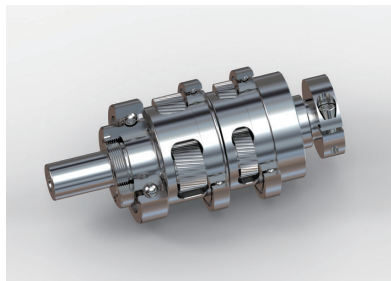
输出双支撑, 大跨距, 高稳定性
Output double support, large span, high stability



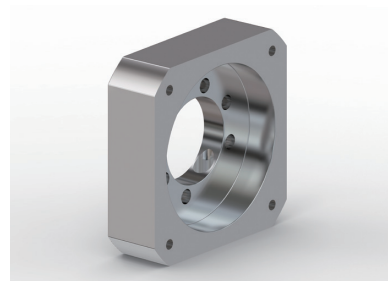
齿面宽, 高强度
Wide tooth surface and high strength



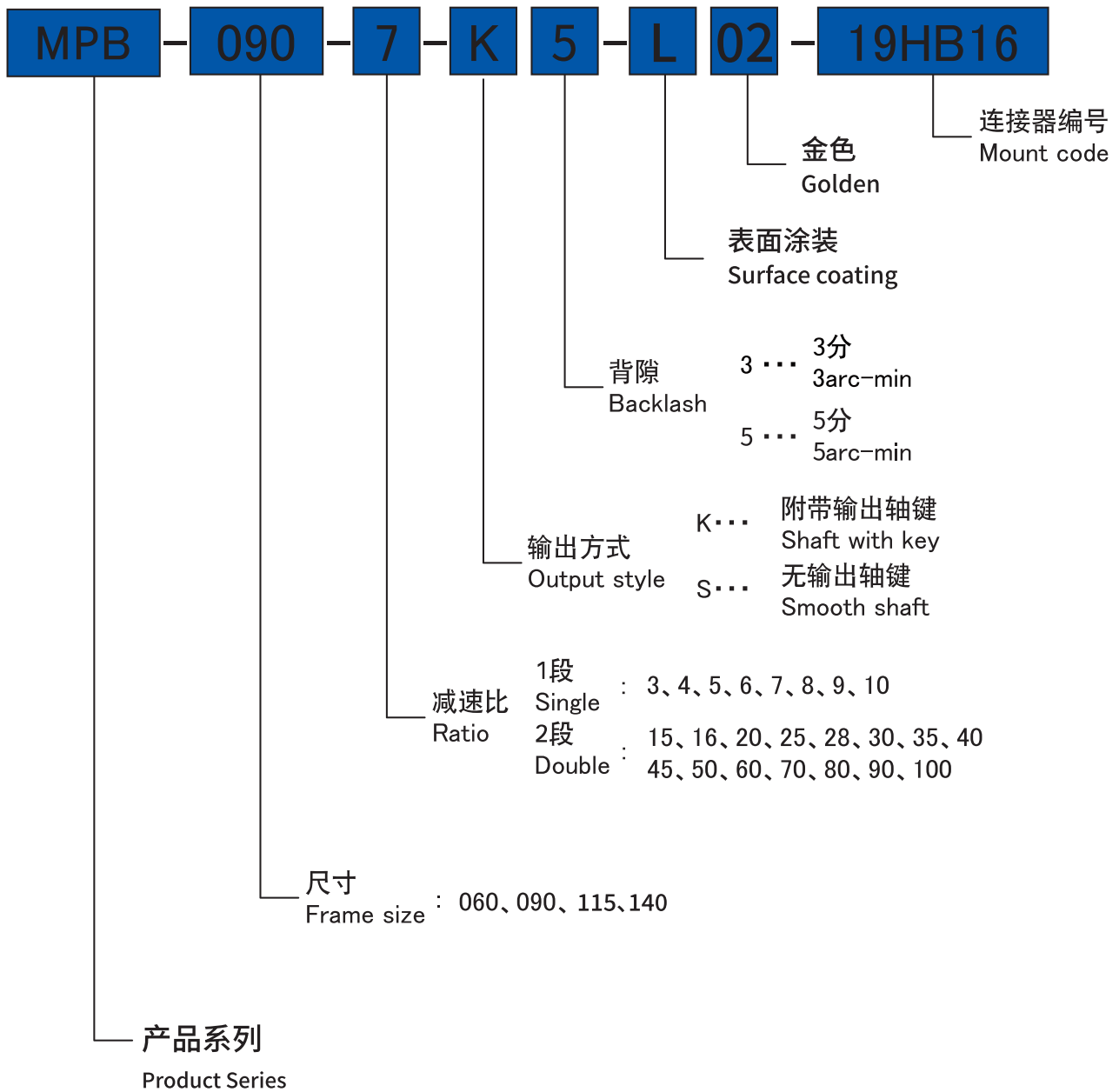
斜齿设计, 高咬合率, 连转平滑, 低噪音, 低背隙
Oblique tooth design, high occlusion rate, even rotation and low noise, low back



将太阳齿输出轴轴承直接设计在臂架内, 确保精度和同心度
The sun gear output shaft bearing is designed directly in the boom to ensure accuracy and concentricity



一体化连接板设计, 与各种伺服, 马达完美配合
Integrated connection board design, perfect coordination with various servo and motors



MPB-060		单级/Single-stage									双级/Double-stage									
速比 ⁽¹⁾ Ratio	i		3	4	5	6	7	8	9	10	15	16	20	25	30	35	40	50	70	100
额定输出力矩 (NIn) Rated output torque	T _{2N}	Nm	44	40	40	44	40	36	32	32	44	40	40	48	40	40	44	40	40	32
紧急制动力矩 Emergency braking torque	T _{2NOT}	Nm	3倍额定输出力矩/3 Times rated output torque																	
额定输入转速 Rated input speed	n _{1N}	rpm	3000																	
最大输入转速 Maximum input speed	n _{1max}	rpm	6000																	
回程间隙 Backlash	j _t	Arcmin	≤3/≤5																	
最大径向力 ⁽²⁾ Maximum radial force	F _{2RMax}	N	930																	
最大轴向力 Maximum axial force	F _{2AMax}	N	860																	
工作效率 Work efficiency	η	%	95									90								
工作寿命 ⁽³⁾ Working life	Lh	h	20000																	
重量 Weight	m	kg	1.3									1.8								
安装方向 Installation direction			任意方向/Any direction																	
使用温度 Operating temperature	°C		-10~90																	
润滑方式 Lubrication method			终生润滑/Lifetime lubrication																	
防护等级 Degree of protection			IP65																	
转动惯量 Moment of inertia	≤14	J ₁	Kgcm ²	0.28	0.25	0.25	0.22	0.18	0.17	0.15	0.14	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.15
	≤19	J ₁	Kgcm ²	0.65	0.6	0.55	0.55	0.52	0.5	0.5	0.48	0.18	0.18	0.16	0.15	0.15	0.15	0.15	0.15	0.14

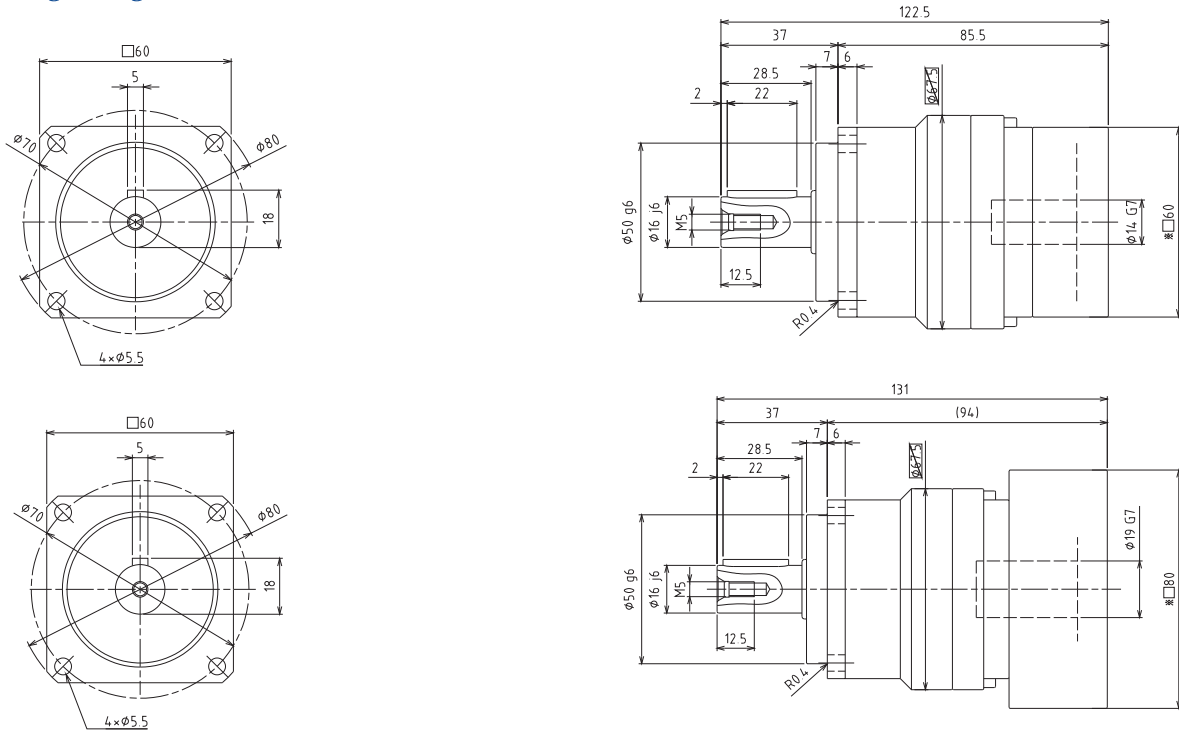
- 1.需选用其他速比请与牧川联系
- 2.受力作用点为输出轴中心点
- 3.连续运转时，使用寿命为10000h
- 4.对温度有特殊要求请与牧川联系

1. If other ratio needed , please contact MAKIKAWA
2. Center point of output shaft
3. The service life is 10,000h during continuous operation
4. Please contact MAKIKAWA for special temperature requirements

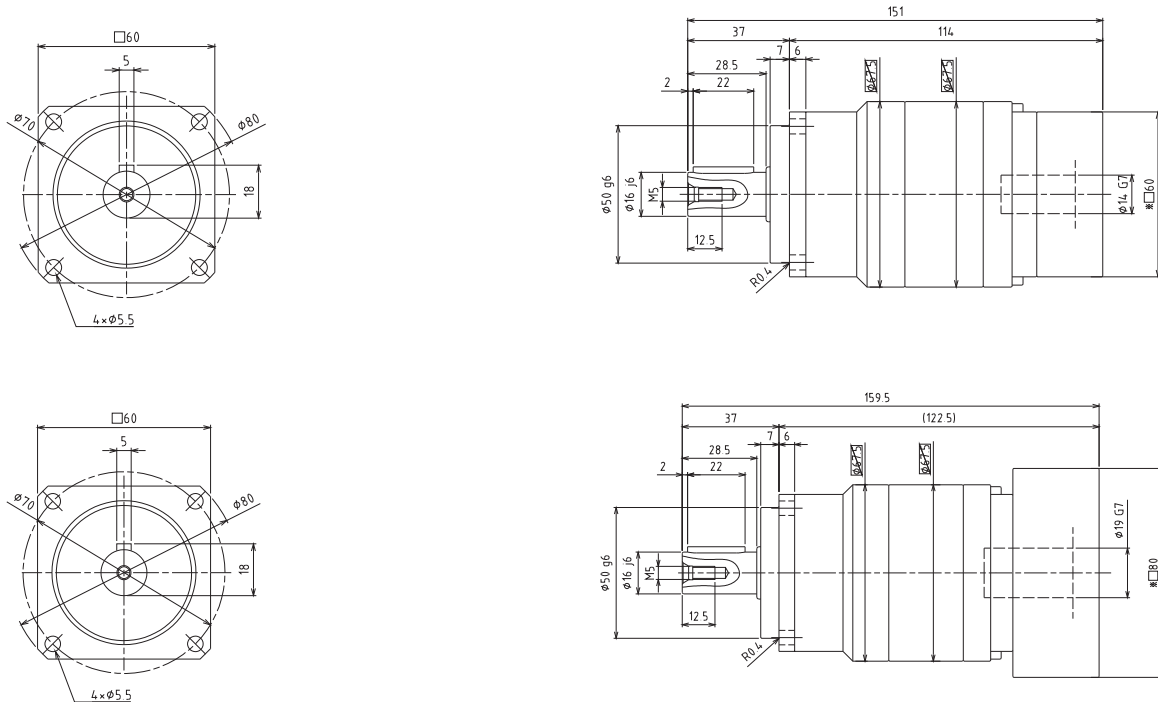
MPB系列 MPB SERIES

MPB-060 尺寸一览表 Dimensions

单级/Single-stage



双级/Two-stage



(1)请参照马达轴径尺寸

(2)马达轴最长长度, 如有特殊马达轴尺寸, 请与牧川联系

(3)减速机输入端尺寸, 依马达的法兰面而定

*如无合适尺寸, 请与牧川联系

(1) Please refer to the motor shaft diameter size

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

(3) Reducer input size, depending on the flange surface of the motor

*If no suitable size available, please contact MAKIKAWA

MPB-090		单级/Single-stage								双级/Double-stage											
速比 ⁽¹⁾ Ratio	i		3	4	5	6	7	8	9	10	15	16	20	25	30	35	40	50	70	100	
额定输出力矩 (NIn) Rated output torque	T _{2N}	Nm	130	140	160	140	140	120	100	100	130	140	140	160	130	140	140	160	120	100	
紧急制动力矩 Emergency braking torque	T _{2NOT}	Nm	3倍额定输出力矩/3 Times rated output torque																		
额定输入转速 Rated input speed	n _{1N}	rpm	3000																		
最大输入转速 Maximum input speed	n _{1max}	rpm	6000																		
回程间隙 Backlash	j _t	Arcmin	≤3/≤5																		
最大径向力 ⁽²⁾ Maximum radial force	F _{2RMax}	N	2350																		
最大轴向力 Maximum axial force	F _{2AMax}	N	1700																		
工作效率 Work efficiency	η	%	95								90										
工作寿命 ⁽³⁾ Working life	Lh	h	20000																		
重量 Weight	m	kg	3.9								4.6										
安装方向 Installation direction			任意方向/Any direction																		
使用温度 Operating temperature	°C		-10~90																		
润滑方式 Lubrication method			终生润滑/Lifetime lubrication																		
防护等级 Degree of protection			IP65																		
转动惯量 Moment of inertia	≤19	J ₁	Kgcm ²	1.3	1.3	1.2	1.1	0.9	0.8	0.7	0.6	0.25	0.23	0.21	0.2	0.18	0.18	0.18	0.08	0.16	0.16
	≤24	J ₁	Kgcm ²	2.5	2.4	2.3	2.3	2.2	2.2	2.1	2.1	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.15	0.6	0.6

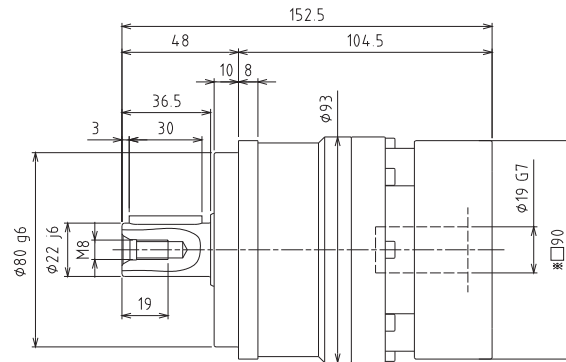
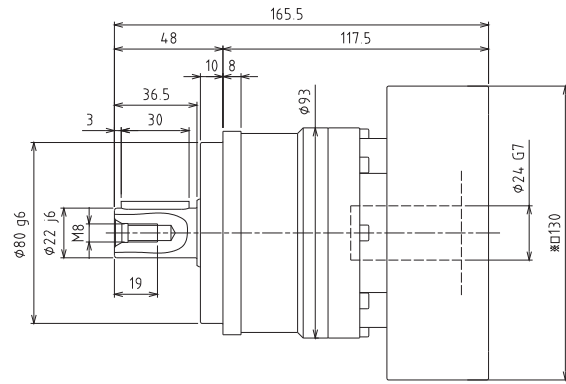
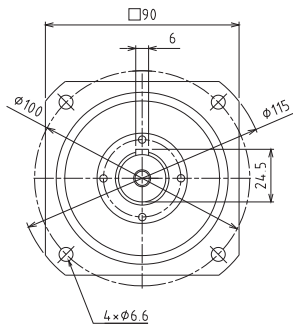
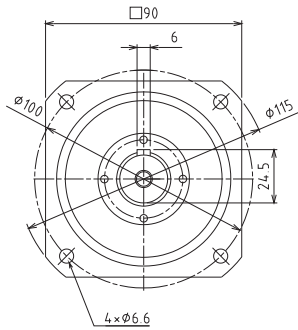
- 1.需选用其他速比请与牧川联系
- 2.受力作用点为输出轴中心点
- 3.连续运转时，使用寿命为10000h
- 4.对温度有特殊要求请与牧川联系

1. If other ratio needed , please contact MAKIKAWA
2. Center point of output shaft
3. The service life is 10,000h during continuous operation
4. Please contact MAKIKAWA for special temperature requirements

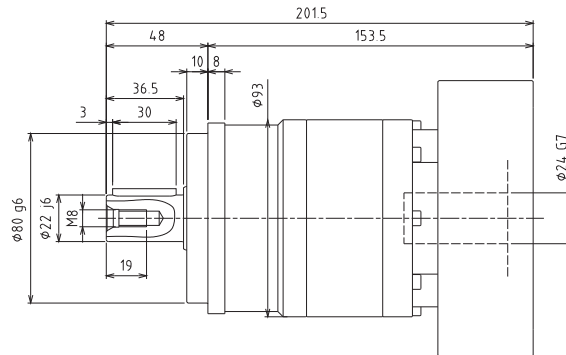
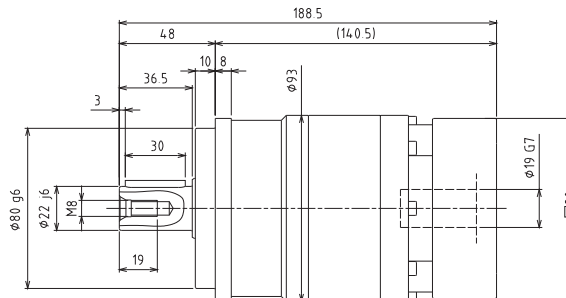
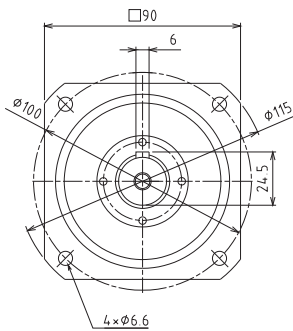
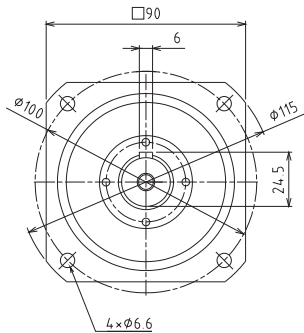
MPB系列 MPB SERIES

MPB-090 尺寸一览表 Dimensions

单级/Single-stage



双级/Two-stage



(1)请参照马达轴径尺寸

(2)马达轴最长长度, 如有特殊马达轴尺寸, 请与牧川联系

(3)减速机输入端尺寸, 依马达的法兰面而定

*如无合适尺寸, 请与牧川联系

(1) Please refer to the motor shaft diameter size

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

(3) Reducer input size, depending on the flange surface of the motor

*If no suitable size available, please contact MAKIKAWA

MPB-115		单级/Single-stage								双级/Double-stage											
速比 ⁽¹⁾ Ratio	i	3	4	5	6	7	8	9	10	15	16	20	25	30	35	40	50	70	100		
额定输出力矩 (Nln) Rated output torque	T _{2N}	Nm	208	290	330	300	300	260	230	230	208	290	290	330	300	300	330	330	300	230	
紧急制动力矩 Emergency braking torque	T _{2NOT}	Nm	3倍额定输出力矩/3 Times rated output torque																		
额定输入转速 Rated input speed	n _{1N}	rpm	3000																		
最大输入转速 Maximum input speed	n _{1max}	rpm	6000																		
回程间隙 Backlash	j _t	Arcmin	≤3/≤5																		
最大径向力 ⁽²⁾ Maximum radial force	F _{2RMax}	N	5100																		
最大轴向力 Maximum axial force	F _{2AMax}	N	3900																		
工作效率 Work efficiency	η	%	95								90										
工作寿命 ⁽³⁾ Working life	Lh	h	20000																		
重量 Weight	m	kg	6.2								8.0										
安装方向 Installation direction	任意方向/Any direction																				
使用温度 Operating temperature	°C -10~90																				
润滑方式 Lubrication method	终生润滑/Lifetime lubrication																				
防护等级 Degree of protection	IP65																				
转动惯量 Moment of inertia	≤24	J ₁	Kgcm ²	4.8	4.6	4.5	4	3.5	3	2.7	2.5	2	1.8	1.8	1.8	1.7	1.7	1.6	1.4	1.4	1.4
	≤35	J ₁	Kgcm ²	11.05	10.5	10	10	9.9	9	9.6	9.5										

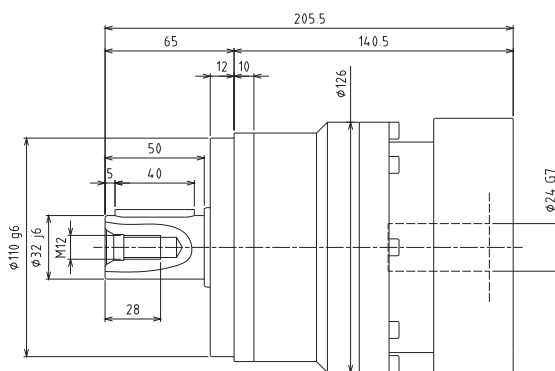
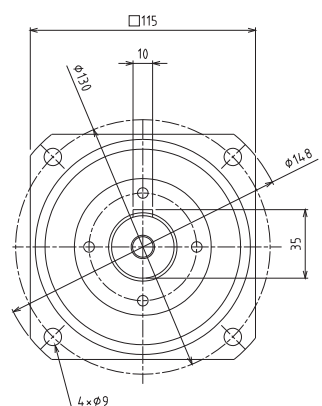
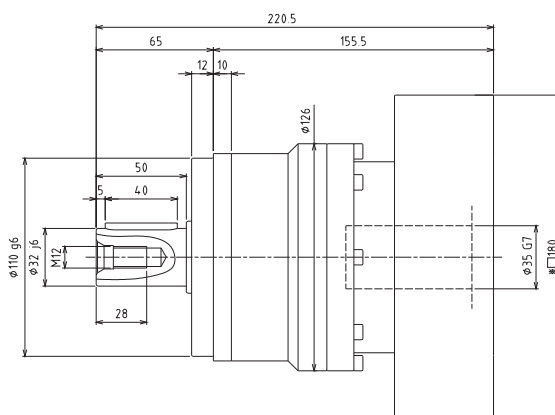
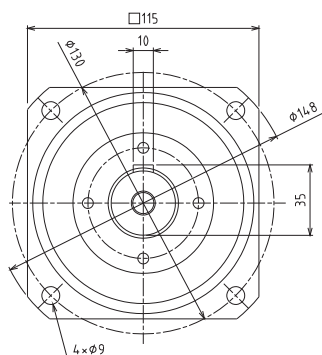
- 1.需选用其他速比请与牧川联系
- 2.受力作用点为输出轴中心点
- 3.连续运转时，使用寿命为10000h
- 4.对温度有特殊要求请与牧川联系

1. If other ratio needed , please contact MAKIKAWA
2. Center point of output shaft
3. The service life is 10.000h during continuous operation
4. Please contact MAKIKAWA for special temperature requirements

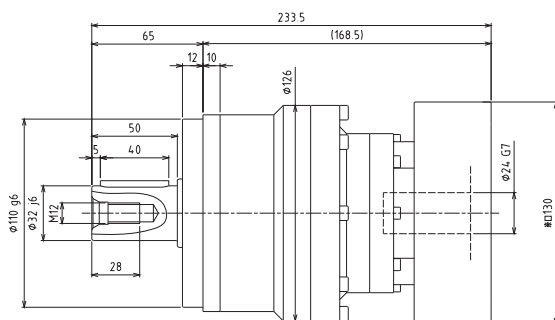
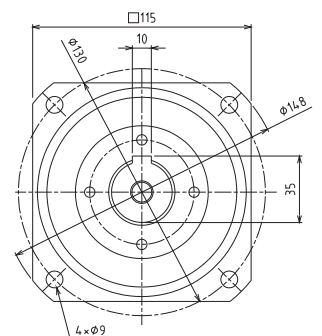
MPB系列 MPB SERIES

MPB-115 尺寸一览表 Dimensions

单级/Single-stage



双级/Two-stage



(1)请参照马达轴径尺寸

(2)马达轴最长长度, 如有特殊马达轴尺寸, 请与牧川联系

(3)减速机输入端尺寸, 依马达的法兰面而定

*如无合适尺寸, 请与牧川联系

(1) Please refer to the motor shaft diameter size

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

(3) Reducer input size, depending on the flange surface of the motor

*If no suitable size available, please contact MAKIKAWA

MPB-140		单级/Single-stage								双级/Double-stage															
速比 ⁽¹⁾ Ratio	i	3	4	5	6	7	8	9	10	15	16	20	25	30	35	40	50	70	100						
额定输出力矩 (NIn) Rated output torque	T _{2N} Nm	360	360	540	540	540	540	360	360	360	540	540	540	360	540	540	540	540	360						
紧急制动力矩 Emergency braking torque	T _{2NOT} Nm	3倍额定输出力矩/3 Times rated output torque																							
额定输入转速 Rated input speed	n _{1N} rpm	2000																							
最大输入转速 Maximum input speed	n _{1max} rpm	4000																							
回程间隙 Backlash	j _t Arcmin	≤5																							
最大径向力 ⁽²⁾ Maximum radial force	F _{2RMax} N	8100																							
最大轴向力 Maximum axial force	F _{2AMax} N	8200																							
工作效率 Work efficiency	η %	95								90															
工作寿命 ⁽³⁾ Working life	Lh h	20000																							
重量 Weight	m kg	16								17															
安装方向 Installation direction		任意方向/Any direction																							
使用温度 Operating temperature	°C	-10~90																							
润滑方式 Lubrication method		终生润滑/Lifetime lubrication																							
防护等级 Degree of protection		IP65																							
转动惯量 Moment of inertia	≤19	J ₁ Kgcm ²									1.3	1.5	1.2	1.1	1.4	0.85	1.1	0.83	1.1	0.81	0.81	0.8	0.8	0.8	0.8
	≤28	J ₁ Kgcm ²	12	7.5	5.8	4.9	4.1	3.8	3.6	3.5	3.2	3.5	3.1	3.1	3.3	2.8	3.1	2.8	3	2.8	2.8	2.8	2.8	2.8	2.8
	≤38	J ₁ Kgcm	20	1.5	14	13	12	12	11	11	11	11	11	11	11	10	11	10	10	10	10	10	10	10	10
	≤48	J ₁ Kgcm ²	42	37	36	35	34	34	34	34															

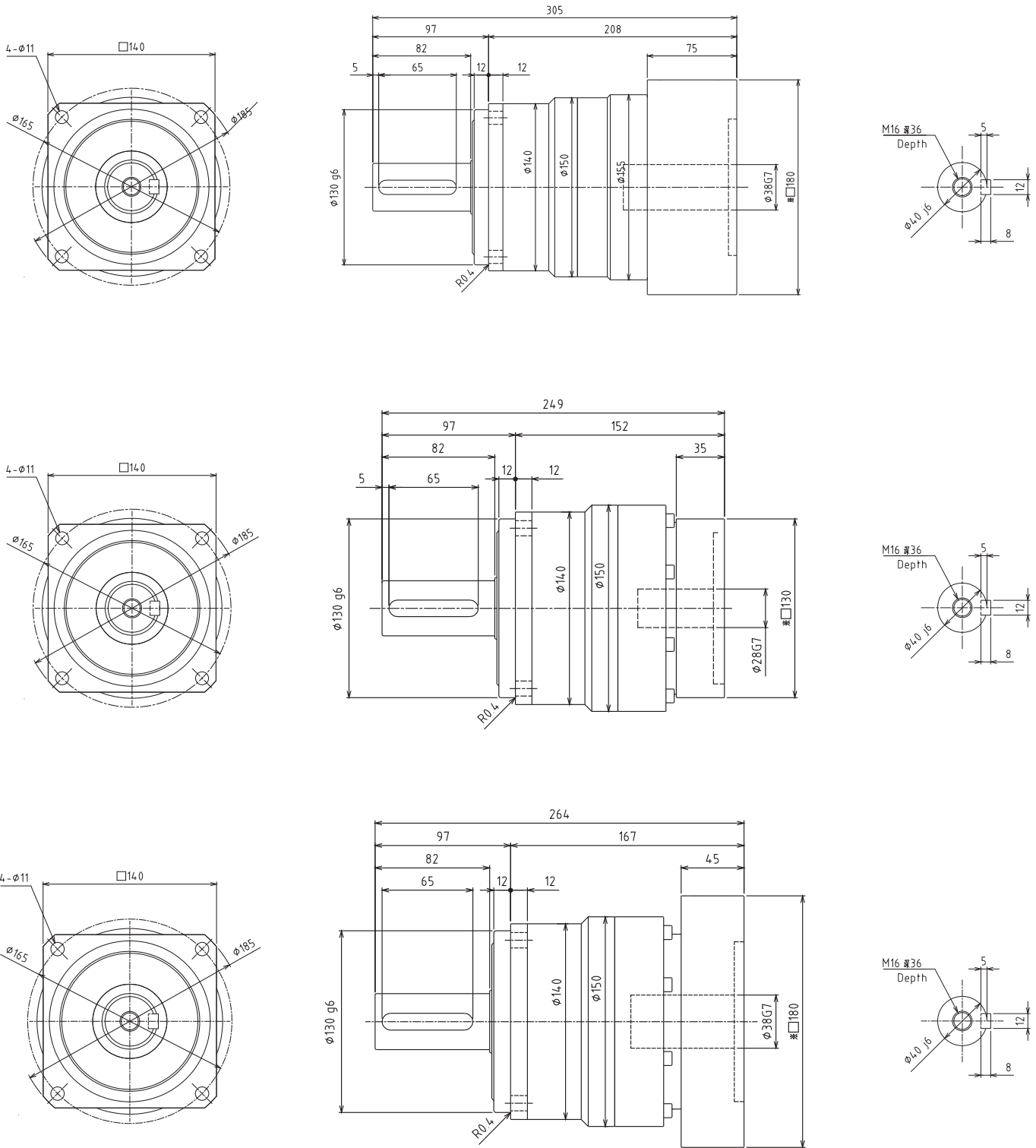
- 1.需选用其他速比请与牧川联系
- 2.受力作用点为输出轴中心点
- 3.连续运转时，使用寿命为10000h
- 4.对温度有特殊要求请与牧川联系

1. If other ratio needed , please contact MAKIKAWA
2. Center point of output shaft
3. The service life is 10,000h during continuous operation
4. Please contact MAKIKAWA for special temperature requirements

MPB系列 MPB SERIES

MPB-140 尺寸一览表 Dimensions

单级/Single-stage



(1)请参照马达轴径尺寸

(1) Please refer to the motor shaft diameter size

(2)马达轴最长长度，如有特殊马达轴尺寸，请与牧川联系

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

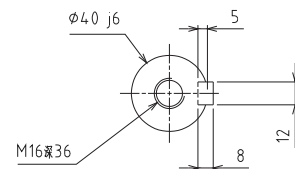
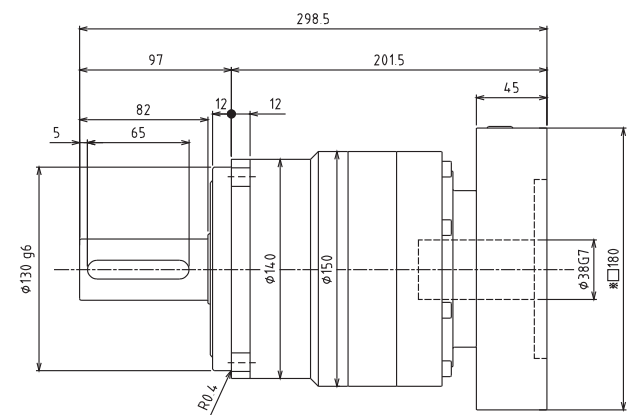
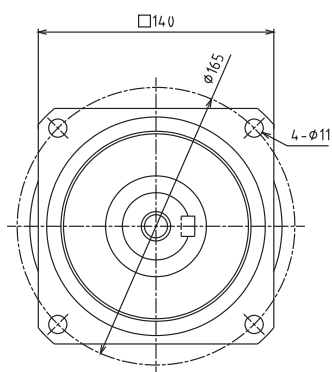
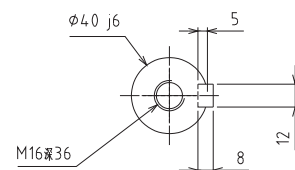
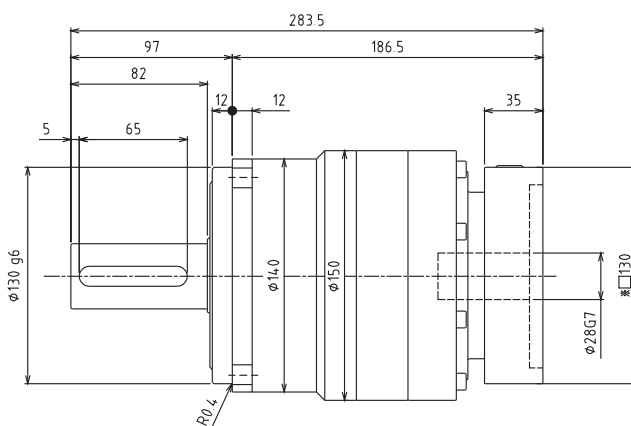
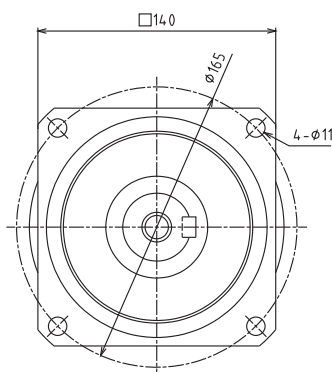
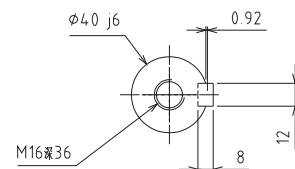
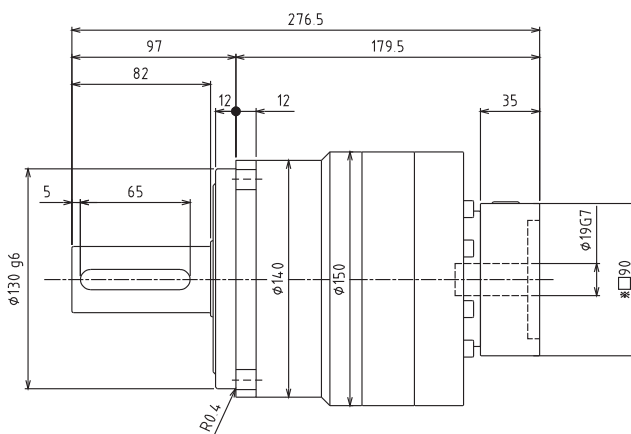
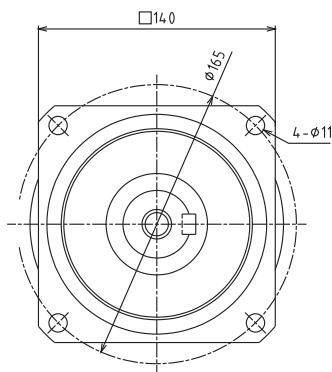
(3)减速机输入端尺寸，依马达的法兰面而定

(3) Reducer input size, depending on the flange surface of the motor

*如无合适尺寸，请与牧川联系

*If no suitable size available, please contact MAKIKAWA

双级/Two-stage



(1)请参照马达轴径尺寸

(2)马达轴最长长度, 如有特殊马达轴尺寸, 请与牧川联系

(3)减速机输入端尺寸, 依马达的法兰面而定

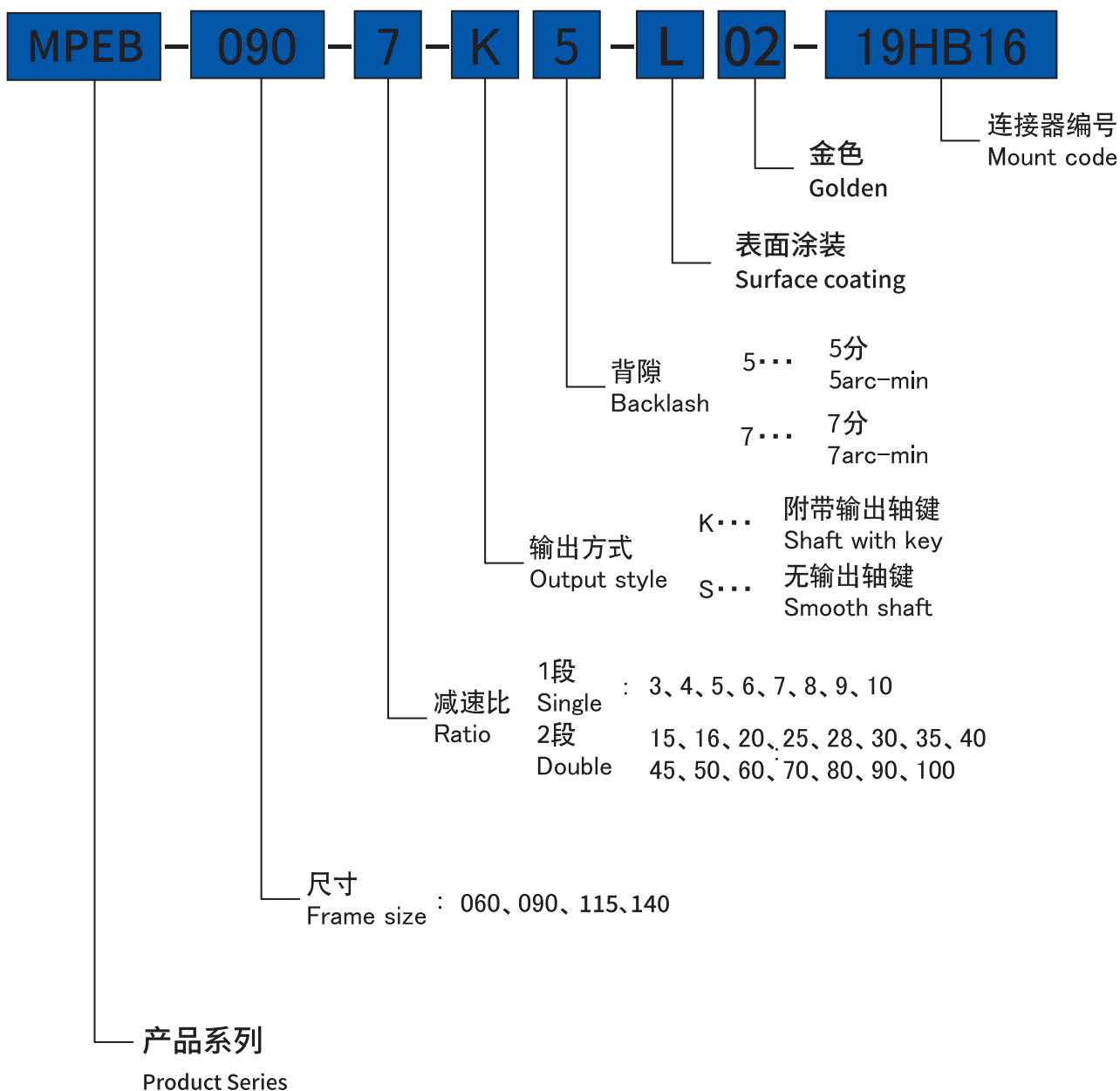
*如无合适尺寸, 请与牧川联系

(1) Please refer to the motor shaft diameter size

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

(3) Reducer input size, depending on the flange surface of the motor

*If no suitable size available, please contact MAKIKAWA



MPEB系列 MPEB SERIES

性能一览表 Performance table

MPEB-060		单级/Single-stage								双级/Double-stage											
速比 ⁽¹⁾ Ratio	i	3	4	5	6	7	8	9	10	15	16	20	25	30	35	40	50	70	100		
额定输出力矩 (NIn) Rated output torque	T _{2N} Nm	40	36	36	40	36	32	28	28	40	32	38	43	40	36	36	36	36	23		
紧急制动力矩 Emergency braking torque	T _{2NOT} Nm	3倍额定输出力矩/3 Times rated output torque																			
额定输入转速 Rated input speed	n _{1N} rpm	3000																			
最大输入转速 Maximum input speed	n _{1max} rpm	6000																			
回程间隙 Backlash	j _t Arcmin	≤7																			
最大径向力 ⁽²⁾ Maximum radial force	F _{2RMax} N	930																			
最大轴向力 Maximum axial force	F _{2AMax} N	860																			
工作效率 Work efficiency	η %	95										90									
工作寿命 ⁽³⁾ Working life	Lh h	20000																			
重量 Weight	m kg	1.9										2.2									
安装方向 Installation direction		任意方向/Any direction																			
使用温度 Operating temperature	°C	-10~90																			
润滑方式 Lubrication method		终生润滑/Lifetime lubrication																			
防护等级 Degree of protection		IP65																			
转动惯量 Moment of inertia	≤8	J ₁ Kgcm ²											0.1	0.1	0.09	0.08	0.08	0.08	0.08	0.08	0.08
	≤14	J ₁ Kgcm ²	0.28	0.25	0.25	0.18	0.17	0.15	0.14	0.14	0.13	0.12	0.18	0.18	0.16	0.15	0.15	0.15	0.15	0.14	0.14
	≤19	J ₁ Kgcm ²	0.65	0.6	0.55	0.55	0.5	0.5	0.48	0.48	0.45	0.42									

1.需选用其他速比请与牧川联系

2.受力作用点为输出轴中心点

3.连续运转时，使用寿命为10000h

4.对温度有特殊要求请与牧川联系

1. If other ratio needed , please contact MAKIKAWA

2. Center point of output shaft

3. The service life is 10.000h during continuous operation

4. Please contact MAKIKAWA for special temperature requirements

MPEB系列 MPEB SERIES

性能一览表 Performance table

MPEB-090		单级/Single-stage								双级/Double-stage													
速比 ⁽¹⁾ Ratio	i	3	4	5	6	7	8	9	10	15	16	20	25	30	35	40	50	70	100				
额定输出力矩 (NIn) Rated output torque	T _{2N}	Nm	115	125	140	125	125	105	90	90	125	125	90	140	115	125	125	140	125	90			
紧急制动力矩 Emergency braking torque	T _{2NOT}	Nm	3倍额定输出力矩/3 Times rated output torque																				
额定输入转速 Rated input speed	n _{1N}	rpm	3000																				
最大输入转速 Maximum input speed	n _{1max}	rpm	6000																				
回程间隙 Backlash	j _t	Arcmin	≤7																				
最大径向力 ⁽²⁾ Maximum radial force	F _{2RMax}	N	2350																				
最大轴向力 Maximum axial force	F _{2AMax}	N	1700																				
工作效率 Work efficiency	η	%	95								90												
工作寿命 ⁽³⁾ Working life	Lh	h	20000																				
重量 Weight	m	kg	5.5								6.8												
安装方向 Installation direction			任意方向/Any direction																				
使用温度 Operating temperature	°C		-10~90																				
润滑方式 Lubrication method			终生润滑/Lifetime lubrication																				
防护等级 Degree of protection			IP65																				
转动惯量 Moment of inertia	≤14	J ₁	Kgcm ²	0.28	0.25	0.25	0.22	0.18	0.17	0.14	0.14	0.13	0.42	0.12	0.25	0.23	0.21	0.2	0.18	0.18	0.18	0.16	0.16
	≤19	J ₁	Kgcm ²	0.65	0.6	0.55	0.55	0.52	0.5	0.48	0.48	0.45	0.12	0.42	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.5
	≤24	J ₁	Kgcm ²	0.74	0.69	0.63	0.63	0.59	0.57	0.55	0.55	0.51	0.42	0.48	0.8	0.8	0.7	0.7	0.7	0.7	0.65	0.6	0.6

1.需选用其他速比请与牧川联系

2.受力作用点为输出轴中心点

3.连续运转时，使用寿命为10000h

4.对温度有特殊要求请与牧川联系

1. If other ratio needed , please contact MAKIKAWA

2. Center point of output shaft

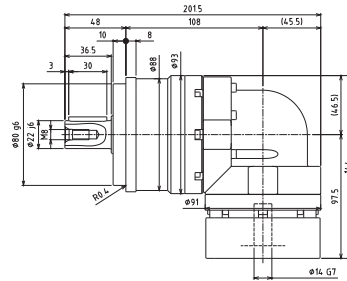
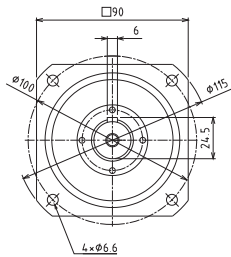
3. The service life is 10.000h during continuous operation

4. Please contact MAKIKAWA for special temperature requirements

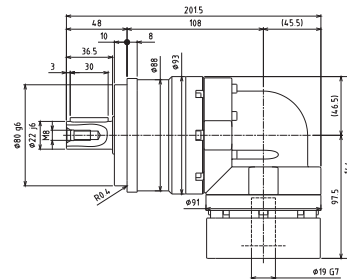
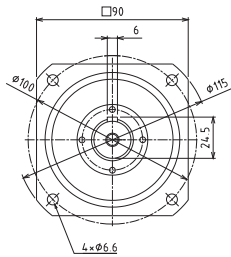
MPEB系列 MPEB SERIES

MPEB-090尺寸一览表 Dimensions

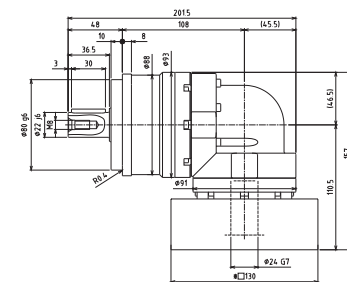
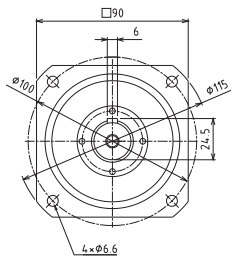
MPEB-090-1段型减速机φ14



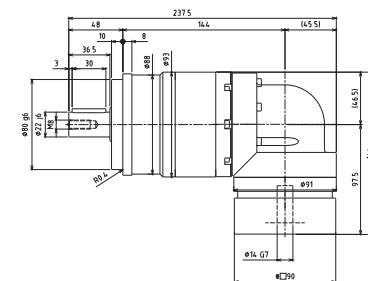
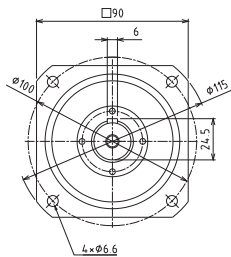
MPEB-090-1段型减速机φ19



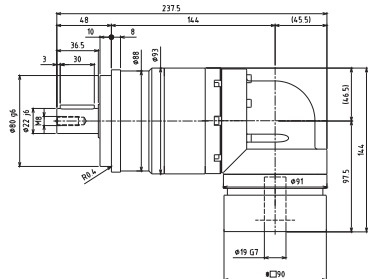
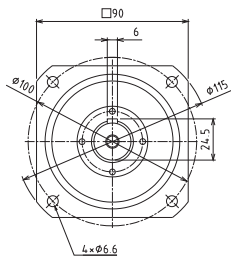
MPEB-090-1段型减速机φ24



MPEB-090-2段型减速机φ14



MPEB-090-2段型减速机φ19



(1)请参照马达轴径尺寸

(2)马达轴最长长度, 如有特殊马达轴尺寸, 请与牧川联系

(3)减速机输入端尺寸, 依马达的法兰面而定

*如无合适尺寸, 请与牧川联系

(1) Please refer to the motor shaft diameter size

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

(3) Reducer input size, depending on the flange surface of the motor

*If no suitable size available, please contact MAKIKAWA

MPEB系列 MPEB SERIES

性能一览表 Performance table

MPEB-115		单级/Single-stage									双级/Double-stage												
速比 ⁽¹⁾ Ratio	i		3	4	5	6	7	8	9	10	15	16	20	25	30	35	40	50	60	70	80	100	
额定输出力矩 (NIn) Rated output torque	T _{2N}	Nm	185	260	295	270	270	230	205	205	270	230	205	295	180	270	260	295	270	270	230	205	
紧急制动力矩 Emergency braking torque	T _{2NOT}	Nm	3倍额定输出力矩/3 Times rated output torque																				
额定输入转速 Rated input speed	n _{1N}	rpm	3000																				
最大输入转速 Maximum input speed	n _{1max}	rpm	6000																				
回程间隙 Backlash	j _t	Arcmin	≤7																				
最大径向力 ⁽²⁾ Maximum radial force	F _{2RMax}	N	5100																				
最大轴向力 Maximum axial force	F _{2AMax}	N	3900																				
工作效率 Work efficiency	η	%	95									90											
工作寿命 ⁽³⁾ Working life	Lh	h	20000																				
重量 Weight	m	kg	10.5									9.7											
安装方向 Installation direction			任意方向/Any direction																				
使用温度 Operating temperature	°C		-10~90																				
润滑方式 Lubrication method			终生润滑/Lifetime lubrication																				
防护等级 Degree of protection			IP65																				
转动惯量 Moment of inertia	≤19	J ₁	Kgcm	3.5	3	2.6	2.2	2	1.8	1.6	1.5	1.5	1.5	1.5	1.4	1.3	0.7	0.7	0.7	0.7	0.6	0.5	0.5
	≤24	J ₁	Kgcm ²	4.8	4.6	4.5	4	3.5	3	2.7	2.5	2.5	2.5	2.3	2.1	2.2	2.1	2.1	2	1.9	1.8	1.8	1.7
	≤35	J ₁	Kgcm ²	11.5	10.5	10	10	9.9	9.9	9.6	9.5	9.5	9	9	8.5								

1.需选用其他速比请与牧川联系

2.受力作用点为输出轴中心点

3.连续运转时，使用寿命为10000h

4.对温度有特殊要求请与牧川联系

1. If other ratio needed , please contact MAKIKAWA

2. Center point of output shaft

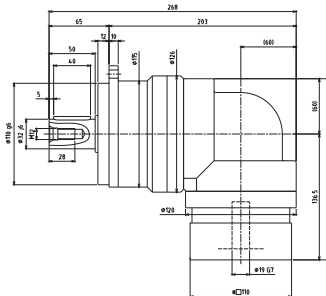
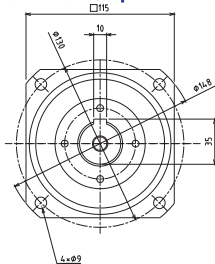
3. The service life is 10.000h during continuous operation

4. Please contact MAKIKAWA for special temperature requirements

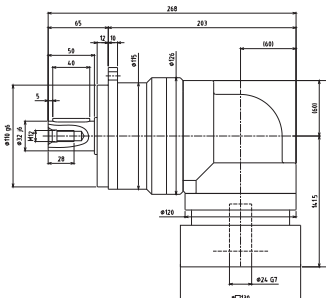
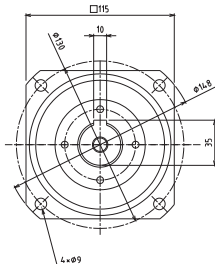
MPEB系列 MPEB SERIES

MPEB-115 尺寸一览表 Dimensions

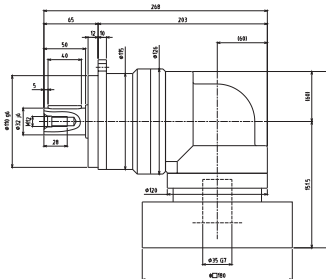
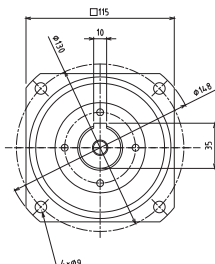
MPEB-115-1段型减速机 $\phi 19$



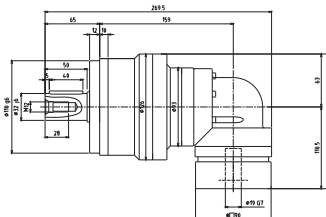
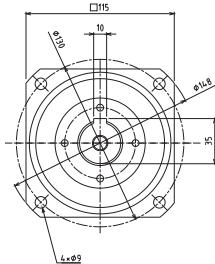
MPEB-115-1段型减速机 $\phi 24$



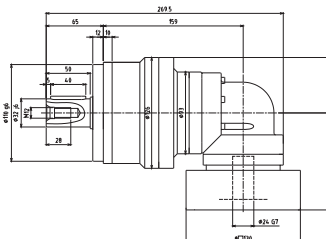
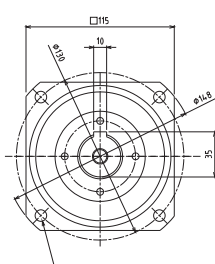
MPEB-115-1段型减速机 $\phi 35$



MPEB-115-2段型减速机 $\phi 19$



MPEB-115-2段型减速机 $\phi 24$



(1)请参照马达轴径尺寸

(2)马达轴最长长度, 如有特殊马达轴尺寸, 请与牧川联系

(3)减速机输入端尺寸, 依马达的法兰面而定

*如无合适尺寸, 请与牧川联系

(1) Please refer to the motor shaft diameter size

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

(3) Reducer input size, depending on the flange surface of the motor

*If no suitable size available, please contact MAKIKAWA

MPEB系列 MPEB SERIES

性能一览表 Performance table

MPEB-140		单级/Single-stage								双级/Double-stage																
速比 ⁽¹⁾ Ratio	i	3	4	5	6	7	8	9	10	15	16	20	25	30	35	40	50	70	100							
额定输出力矩 (NIn) Rated output torque	T _{2N}	Nm	320	320	485	485	485	485	320	320	320	485	485	485	320	485	485	485	320							
紧急制动力矩 Emergency braking torque	T _{2NOT}	Nm	3倍额定输出力矩/3 Times rated output torque																							
额定输入转速 Rated input speed	n _{1N}	rpm	2000																							
最大输入转速 Maximum input speed	n _{1max}	rpm	4000																							
回程间隙 Backlash	j _t	Arcmin	≤7																							
最大径向力 ⁽²⁾ Maximum radial force	F _{2RMax}	N	8100																							
最大轴向力 Maximum axial force	F _{2AMax}	N	8200																							
工作效率 Work efficiency	η	%	95								90															
工作寿命 ⁽³⁾ Working life	Lh	h	20000																							
重量 Weight	m	kg	19.1								19.6															
安装方向 Installation direction	任意方向/Any direction																									
使用温度 Operating temperature	°C																									
润滑方式 Lubrication method	终生润滑/Lifetime lubrication																									
防护等级 Degree of protection	IP65																									
转动惯量 Moment of inertia	≤19	J ₁	Kgcm ²								6.4	7.29	6.22	6.15	7.09	4.99	6.09	4.95	6.07	4.93	4.92	4.91	4.91	4.91	4.91	
	≤28	J ₁	Kgcm ²	23.13	18.57	16.91	16.01	15.58	15.23	14.77	14.66	8	8.88	7.81	7.75	8.86	6.58	7.69	6.54	7.66	6.52	6.51	6.51	6.5	6.5	6.5
	≤38	J ₁	Kgcm	27.5	22.94	21.28	20.38	19.95	19.61	19.41	19.03	15.07	15.96	14.89	14.82	15.76	13.66	14.76	13.61	14.74	13.59	13.58	13.58	13.58	13.57	13.57
	≤48	J ₁	Kgcm ²	40.73	36.17	34.51	33.61	33.18	32.84	32.37	32.26															

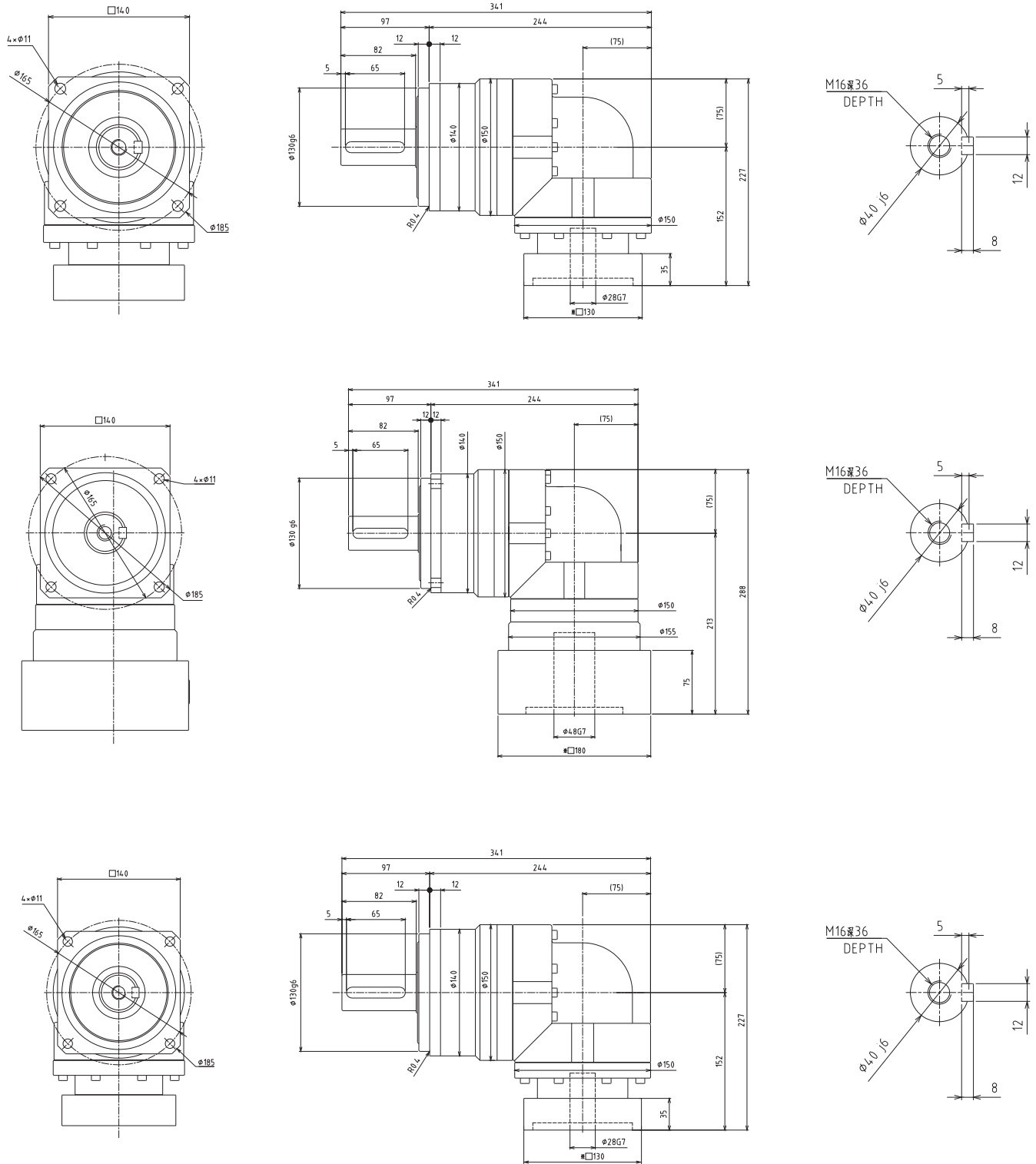
- 1.需选用其他速比请与牧川联系
- 2.受力作用点为输出轴中心点
- 3.连续运转时，使用寿命为10000h
- 4.对温度有特殊要求请与牧川联系

1. If other ratio needed , please contact MAKIKAWA
2. Center point of output shaft
3. The service life is 10,000h during continuous operation
4. Please contact MAKIKAWA for special temperature requirements

MPEB系列 MPEB SERIES

MPEB-140尺寸一览表 Dimensions

单级/Single-stage



(1)请参照马达轴径尺寸

(1) Please refer to the motor shaft diameter size

(2)马达轴最长长度, 如有特殊马达轴尺寸, 请与牧川联系

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

(3)减速机输入端尺寸, 依马达的法兰面而定

(3) Reducer input size, depending on the flange surface of the motor

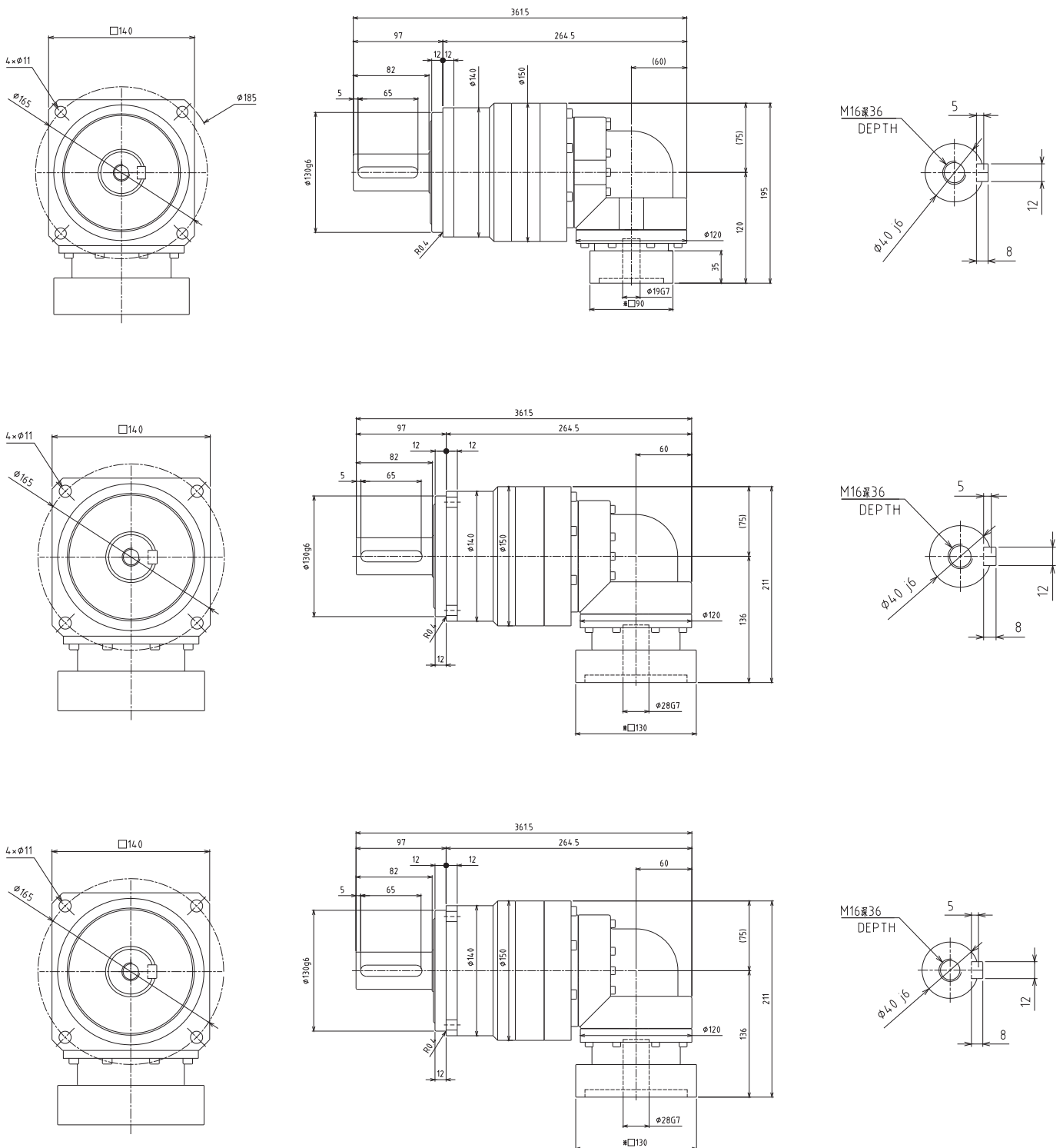
*如无合适尺寸, 请与牧川联系

*If no suitable size available, please contact MAKIKAWA

MPEB系列 MPEB SERIES

MPEB-140尺寸一览表 Dimensions

双级/Two-stage



(1)请参照马达轴径尺寸

(2)马达轴最长长度, 如有特殊马达轴尺寸, 请与牧川联系

(3)减速机输入端尺寸, 依马达的法兰面而定

*如无合适尺寸, 请与牧川联系

(1) Please refer to the motor shaft diameter size

(2) Motor shaft length, for special motor shaft size, please contact MAKIKAWA

(3) Reducer input size, depending on the flange surface of the motor

*If no suitable size available, please contact MAKIKAWA

MPB/MPEB系列 MPB/MPEB SERIES

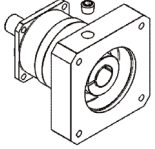
安装步骤 Installation steps

1 马达安装步骤 Mounting procedure to the motor

1 擦拭马达轴上的防锈剂、润滑脂等。
Wipe off anti-rust agent and oil on the motor shaft.



2 取下橡皮栓。
Remove the plug.

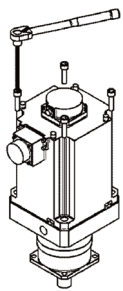


3 旋转输入轴使紧固螺栓的头对准塞孔。此时，请确认紧固螺栓是松动的。
Turn the input shaft until the cap screw is seen. Make sure the cap screw is loosened.

如带有轴套，安装方法如图所示。
In case the bushing has been attached, Please fix it to the reducer as the drawing below.



4 将减速机垂直放置在平坦的地方，使减速机的马达安装面朝上侧。将马达轴慢慢地插入输入轴，注意避免撞击到输入轴，请确认马达的法兰面紧靠减速机的法兰面。按指定的紧固扭矩拧紧马达安装螺栓。(参考表 1)
Please place reducer vertically on the flat surface so the motor mounting part faces up. Carefully insert the motor shaft into the input shaft. (It should be inserted smoothly) Make sure the motor flange is perfectly fit to the reducer's flange. Tighten the motor installing bolts to the proper torque.(See table1)



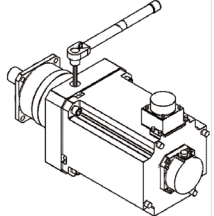
2 减速机的安装

要将减速机安装到设备上时，请先确认安装面平坦且没有毛刺等，然后使用转矩扳手等按照指定的紧固扭矩拧紧螺栓。(参考表 2)

Reducer installation

After confirming the installation surface is flat and clean, tighten the bolt using a torque wrench to the proper torque.(See table2)

5 使用转矩扳手等按照指定的紧固扭矩拧紧紧固螺栓。(参考表 1)
Tighten the clamping bolt of the input shaft with torque wrench to the proper torque.(See table1)



6 安装上橡皮栓，安装完成。
Reinstall the plug. The procedure is done.

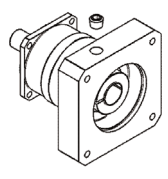


表1 Table 1

螺栓尺寸 Bolt size	马达安装螺栓 Motor installing bolts		紧固螺栓 Clamping bolt	
	Nm	kgfm	Nm	kgfm
M3	1.1	0.11	1.9	0.18
M4	2.5	0.26	4.3	0.44
M5	5.1	0.52	8.7	0.89
M6	8.7	0.89	15	1.5
M8	21	2.1	36	3.7
M10	42	4.3	71	7.2
M12	72	7.3	125	13
M16	134	14	-	-

表2 Table 2

螺栓尺寸 Bolt size	紧固扭矩 Tightening torque	
	Nm	kgfm
M3	1.9	0.18
M4	4.3	0.44
M5	8.7	0.89
M6	15	1.5
M8	36	3.7
M10	71	7.2
M12	125	13
M16	310	32
M20	603	62

※推荐螺栓：强度12.9以上

※Recommended bolt: Strength 12.9

保管时的注意事项

需要暂时保管本产品时，
请遵照下列要领进行。

- ① 放在清洁干燥的场所进行保管。
- ② 若放在室外或有潮气的场所保管时，应装入箱内并用塑料等严密包裹，以避免受雨淋或外气的侵蚀(采取防结露、生锈措施)。

■ 运行时的注意事项

■ 减速机到厂后…

- 减速机到货后请确认减速机型号是否与订购的型号相同。
 - 减速机输出轴、输入轴上涂有防锈剂，请擦拭后使用。
- ※取下输入轴的橡胶栓，擦拭防锈剂。
※减速机上已充填完润滑油(油脂)。
本机到厂后即可使用。

■ 安装、设置

- 请勿在会直接接触到雨或水的场所使用。
 - 需要在室外或受粉尘、水滴影响的场所使用时，请事先与本公司联系。
- 温度设置为0℃~40℃。
 - 如在上述温度范围外使用本机时，必须与本公司联系。
- 将本机设置在不会振动且坚固的安装台上，并用螺栓紧固。
- 设置时应考虑到保养维修的便利性。

■ 运行开始前的注意事项

- 本公司产品出货时已填充了规定量的润滑脂，到货后可直接使用。
- 初次运行时，应先确认输出轴的旋转方向后，再慢慢地增加负荷。

■ 运行中的注意事项

- 请注意不要超负荷。
- 输入转速不得超过规定以上的转速。
- 发生下列情况时，请暂停运行立即进行检查。
 - 温度突然上升
 - 突然出现很大的异常声
 - 转速突然变得不稳定

- 如果这些原因是由下列事项造成，应马上采取应对措施或与本公司联系。
 - 是否处于超负荷状态?
 - 是否润滑油不足、老化或使用不同品种的润滑油?
 - 轴承、齿轮、传动面有无损伤?
 - 是否与关联机械连接等的条件不良?

■ 分解

- 减速机为不能分解的结构。

■ 保修

- 保修期间为交付产品后起1年。

■ 润滑油管理

- 减速机的全部机种均采用润滑脂润滑密封方式。出厂前已填充了定量的润滑油，到厂后即可使用。
- 不能更换润滑脂。
- 在周围温度常时0℃~40℃以外的环境中使用时，请事先咨询本公司。

■ 每天检查

- 运行中的减速机的外壳温度有无异常增高。
 - (如果周围温度在+50℃以内的话，没有大问题)
- 轴承、齿轮部等有无异常声音。
- 减速机有无异常振动。
 - * 如果发生这些现象时，请立即停机并与本公司联系。
- 润滑油有无泄漏。
 - * 发生油脂泄漏时，请与本公司联系。

■ 定期检查

- 有无超负荷或异常旋转。
- 滑轮、链轮、减速机安装螺栓等有无松动。
- 电气系统有无异常。
- 主要部件的检查和维修。
 - ※发生异常现象时，请立即停机并与本公司联系。
- 润滑油的问题。
 - ※发生油脂泄漏时，请与本公司联系。

■ 废弃方法

废弃减速机时，应根据法令和各自自治体的条例等，将部件按材料分类，作为产业废弃物进行处理。

部件材料分成以下4种。

- ① 橡胶制部件：油封、密封垫圈、橡胶盖、马达法兰侧的轴承上使用的密封部
- ② 铝制部件：马达法兰、输出轴座
- ③ 润滑脂：用干布等擦拭附在部件上的润滑脂，作为油类废弃
- ④ 铁制部件：上述以外的部件

● 保修规定

- 保修范围只限交付产品单体。
- 以下费用和损害不在保修范围内。
 - 1) 本产品的运输费。
 - 2) 本产品与其它装置等连接或装入后从该装置等上拆下、安装或其它附带施工的费用。
 - 3) 因本产品的故障，发生了利用者失去使用机会或业务中断等造成的间接损害。
 - 4) 其它所有派生的或伴随的损害。

Cautions for storage

Whenever temporarily keeping the product, keep the following directions:

- ① Keep in a clean and dry place.
- ② Whenever storing outdoors or in a humid place, put in a box so that it does not directly contact rain or external air and cover with a vinyl sheet (Take a measure to prevent rust.).

■ **Cautions for operation**

■ **When the reducer is delivered to you . . .**

When the product delivered, please confirm that you received the exact same model you have ordered.
 Please wipe out the input and output shaft of the reducer which is covered by anti-corrosive oil.
 ※Please remove the rubber cap on the input shaft before you wipe the shafts.
 ※Lubricant (grease) is already filled in the reducer.
 It is available as it is.

■ **Fixation & installation**

- Avoid use in a place where rain or water drops directly.
 - In case of use outdoors or in a place where dust and water drops, consult in advance.
- Install at 0°C-40°C of surrounding temperature.
 - In case of use at temperature out of the above-mentioned range, contact the headquarters and consult on this.
- Firmly fix with a bolt onto a solid stand without vibration.
- Install in consideration of convenience in repair and inspection.

■ **Cautions prior to starting the operation**

- Reducer can be used soon after arrival, since it has already been filled out with lubrication.
- At initial operation, check the rotating direction of the output shaft and then gradually apply load.

■ **Cautions during operation**

- Avoid overload.
- Ensure that input speed shall not be the number of revolutions beyond the specification.
- In the following cases, stop the operation and check the following points:
 - If temperature sharply increases
 - If an abnormal noise appears sharply
 - If the number of revolutions becomes unstable sharply

- These may be caused by the following matters, so rapidly respond to it or contact us.
 - Is it under overload condition?
 - Is lubricant insufficient or deteriorated, or is lubricant of other type used?
 - Is the axis, gear, and motor side damaged?
 - Is jointing with other machines poor?

■ **Disassembly**

- REDUCER is designed not to allow disassembly.

■ **Warranty**

- A warranty period is one year after the product is delivered to you.

■ **Lubricant use**

- The REDUCER is of grease-seal type in all models.
 A specified amount of grease is filled at factory release, so you can use as soon as it is delivered to you.
- It is impossible to exchange grease.
- In case of use at 0°C-40°C of surrounding temperature at usual times, consider this in advance.

■ **Daily check points**

- Is reducer case temperature excessively high during operation? (Up to + 50°C is not significant.)
- Is there an abnormal noise in the bearing, gear, etc?
- Is there abnormal vibration in the reducer?
 - * Upon an abnormal phenomenon, immediately stop the operation and contact us.
- Is there a lubricant leak?
 - * Upon an oil leak, contact us.

■ **Periodic check points**

- Are there overload and abnormal rotation?
- Are free, sprocket, and reducer assembling bolts loose?
- Is there an abnormal condition in the electric system?
- Checkup and repair of major parts
 - * Upon an abnormal condition, immediately stop the operation and contact us.
- Oil leak
 - * Upon an oil leak, contact us.

■ **Scrapping**

Whenever scrapping the REDUCER, classify the parts by material into industrial wastes as specified in the laws and regulations of self-governing bodies. Material of parts can be divided into four:

- ① Rubber parts : Oil seal, seat packing, rubber cap, seal used for bearing on the motor flange, etc.
- ② Aluminum parts : Motor flange, output shaft holder
- ③ Grease : Wipe off grease attached to parts with dry cloth and scrap into oils.
- ④ Iron parts : Parts other than those mentioned in the above

WARRANTY PROVISION

· Warranty scope is the delivered product only.

■ THE EXPENSES AND LOSSES THAT MENTIONED BELOW ARE NOT INCLUDED IN WARRANTY

- 1) The transport charges for repairing of our products.
- 2) The fee for the removal operation, reinstallation and other related operation in case our product is installed to other machine.
- 3) The loss of the chances of use and indirect damages caused by the interruption of the services caused by our product's defects.
- 4) All other secondary expenses and losses.

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