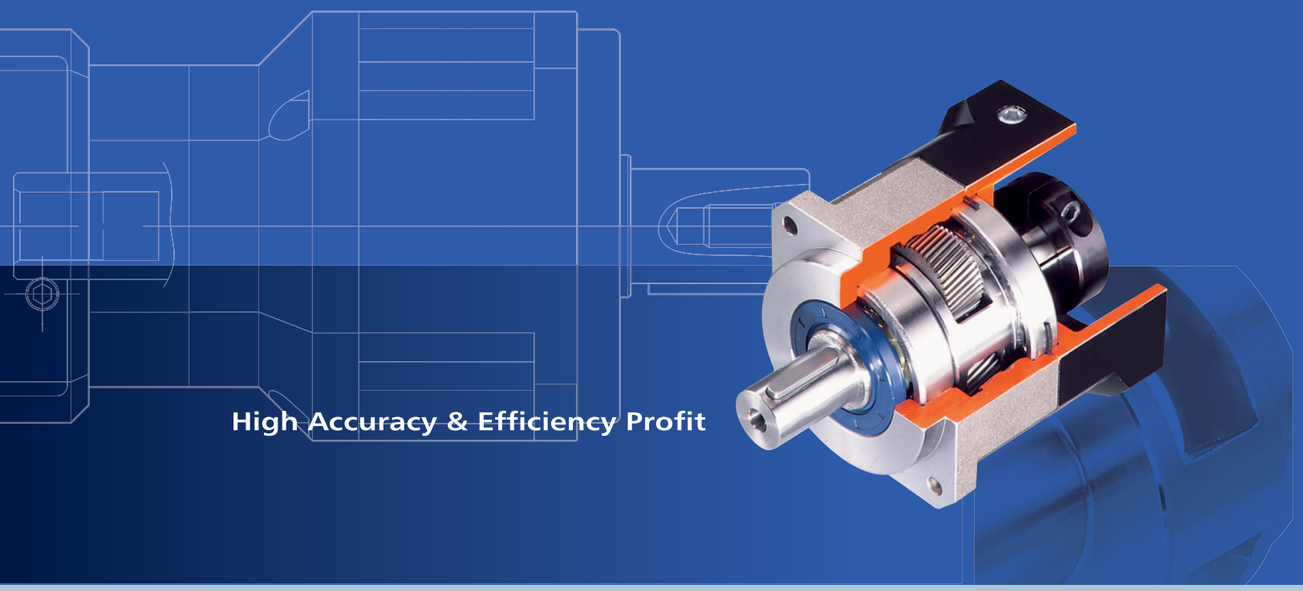
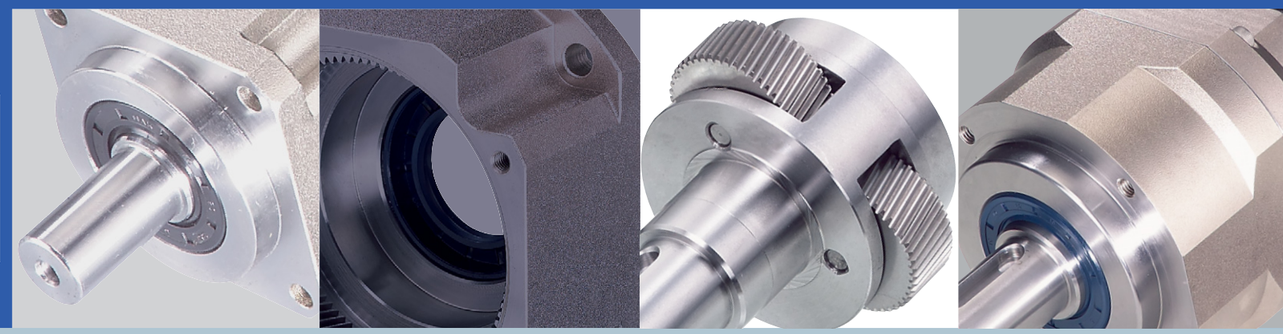
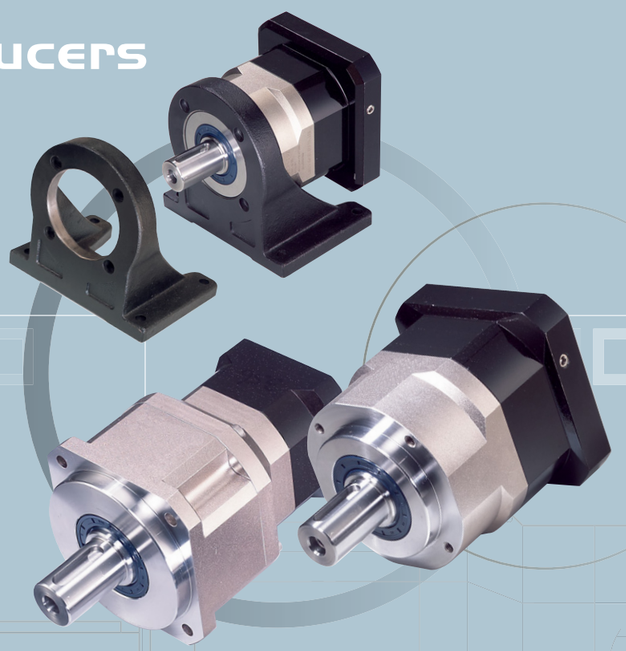


High Accuracy & Efficiency Profit

ATG Planetary Reducers



Planetary Reducers



[주요 공급업체]

(주) 삼성전자 및 Vender · (주) 삼성전기 및 Vender · (주) 삼성코닝 및 Vender · (주) 삼성SDI 및 Vender
(주) LG전자 및 Vender · (주) 한라공조 및 Vender · (주) 현대자동차 및 Vender · (주) GM대우 및 Vender
(주) 한화테크엠 및 Vender · (주) LG Display 및 Vender

Version 5. 2008. 8

*본 카다로그는 기재된 사양 및 외형 치수들은 제품의 개선을 위해서 예고 없이 변경될 수 있습니다.

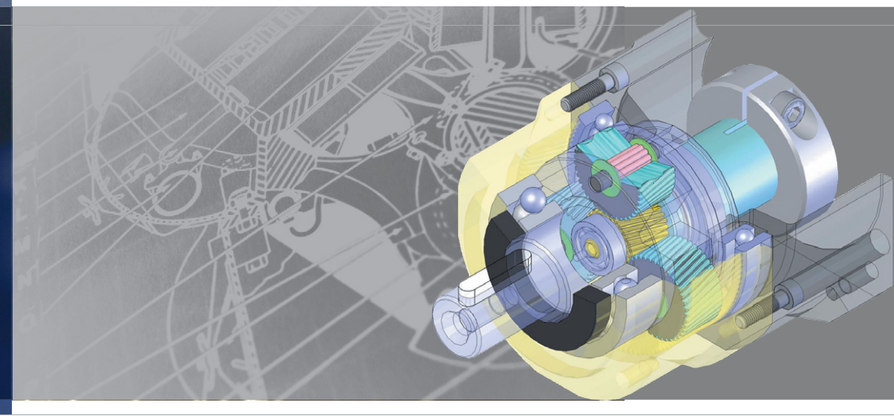
HEUNG JIN A.T CO.,LTD

Quality First & Customer's Satisfaction

High Accuracy & Efficiency Profit

ATG is specialist in design, R&D and manufacturing of a wide range of high-tech gear motor and helical gear reducers, worm gear reducers, planetary gear reducers. In recent years, to meet customers' requirements of quality and price, we have been dedicated to constantly upgrade the performance of gear reducer, maximize efficiency, and provide the most comprehensive technical supports. Under the company's policy of"Quality First; Customer Satisfaction "and" Intelligence: Sincerity; Honesty", we have invited many highly experienced talerits.

At **ATG** we have a tean with outstanding backgrond in high-tech field. **ATG** outstanding enterprise culture results from its practicality, constantly learning the advanced management system and a commitment to excellence.



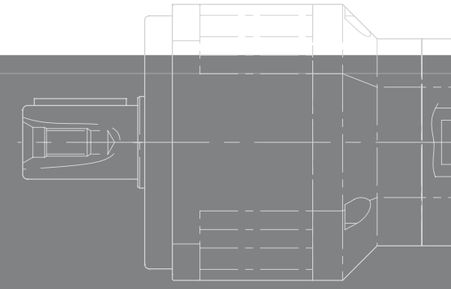
당사는 최고의 제품과 품질을 고객에게 공급하기 위해 항상 최선을 다하고 있습니다.
설립초기에는 자동제어시스템의 제조 및 판매로 기반을 구축하였으며, 현재는 Servo motor에 많이 적용되는 유성치차 감속기의 수입 · 판매를 하고 있으며, 현재 국내 유성치차 감속기 시장의 높은 점유율을 차지하고 있습니다. 당사는 여기에 만족하지 않고 유성치차 감속기의 국산화를 위해 지난 2006년 5월 연구소 및 공장을 설립하여 현재 개발 마무리 단계에 이르렀으며 빠른 시일 내에 양산 체제를 갖출 예정입니다.
“고객이 없는 회사는 존재의 가치가 없다”는 일념아래 고객께서 요구하는 다양하고 우수한 제품의 유성치차 감속기로 고객의 눈높이에서 함께 성장 할 수 있는 기업이 되겠습니다.

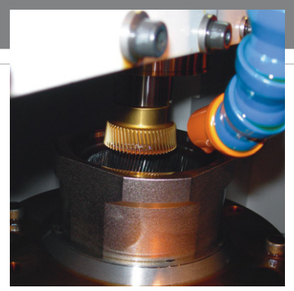
Among the wide range of speed reducers, the planetary gear reducer features compact construction, high-torque resistance, high transmission efficiency, wide range of speed reduction and high accuracy.

The planetary gear reduers are widely applied in servo, stepping and DC transmission system With its outstanding feature of high precision transmission, the planetary gear reducer is excellent for reducing speed, increasing torque and reducung torsional inertia ratio.High torque, low backlash and quiet running are three key features of **ATG** gear reducers, and these are the reasons why **ATG** gear reducers are in the leading position on the market.

Integration / Automation Machining equipment

Based on our acknowledgement of the unique processing characteristics of speed reducers on all parts, we have developed and designed a series of high-efficiency automatic machining equipment, to work with high-performance processing machines.
Our well-experienced technicians take good control of precision in our parts, and stringent quality control to ensure the best precision and performance of all parts and components.
A series of automatic processing equipment provides the most solid foundation for the consistency of precision in the machining of parts and components.

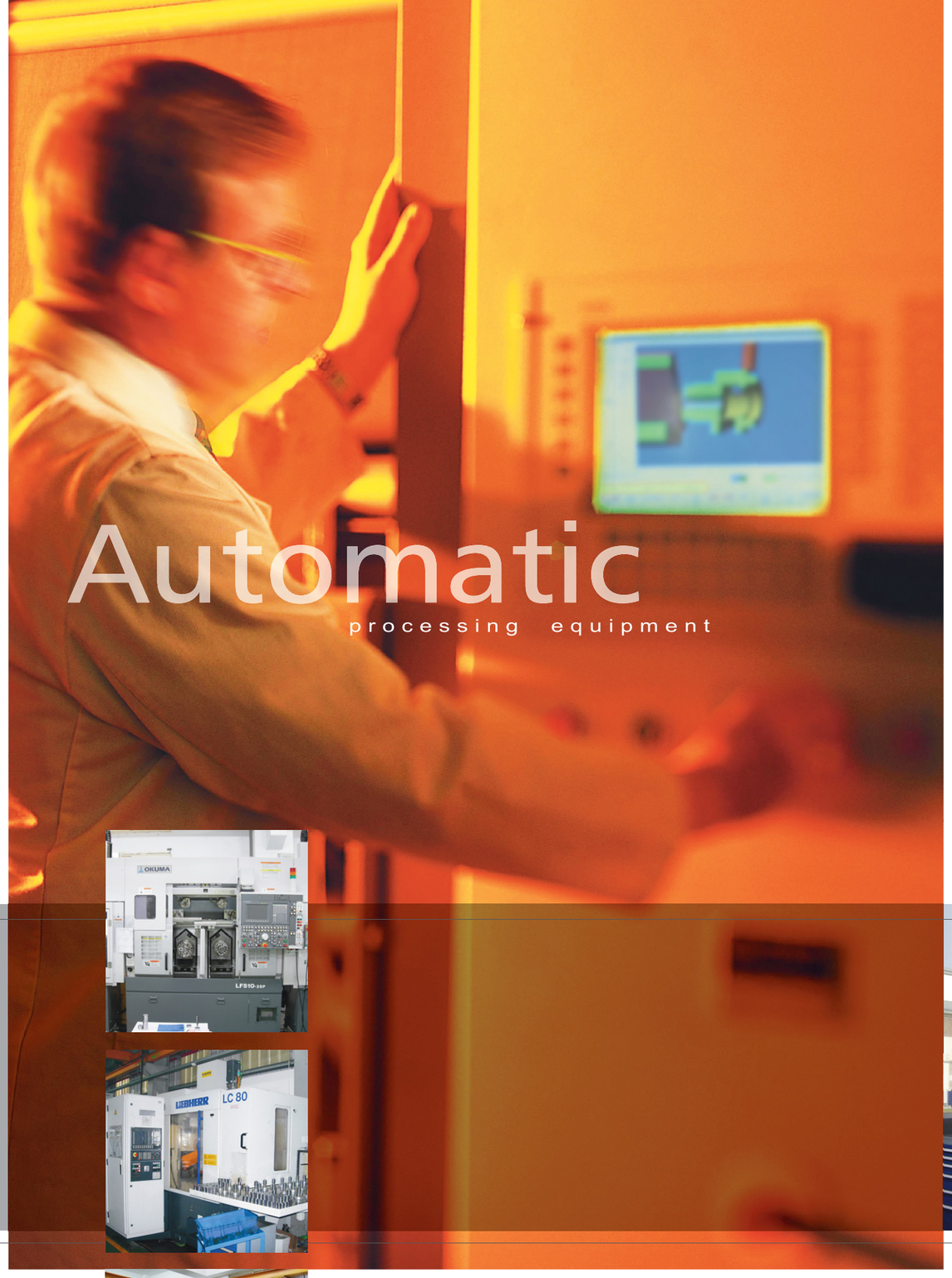




Integrated

Manufacturing with
Full Range of
Automatic Equipment

One corner of our production and processing equipment.



Automatic processing equipment

To enhance technical improvement, **ATG** has placed a huge investment in the purchase of a whole set of the latest CNC computer processing machines and equipment, working precision parts, in combination with distinguished engineering personnel, to upgrade the precision of parts and ensure stable quality.

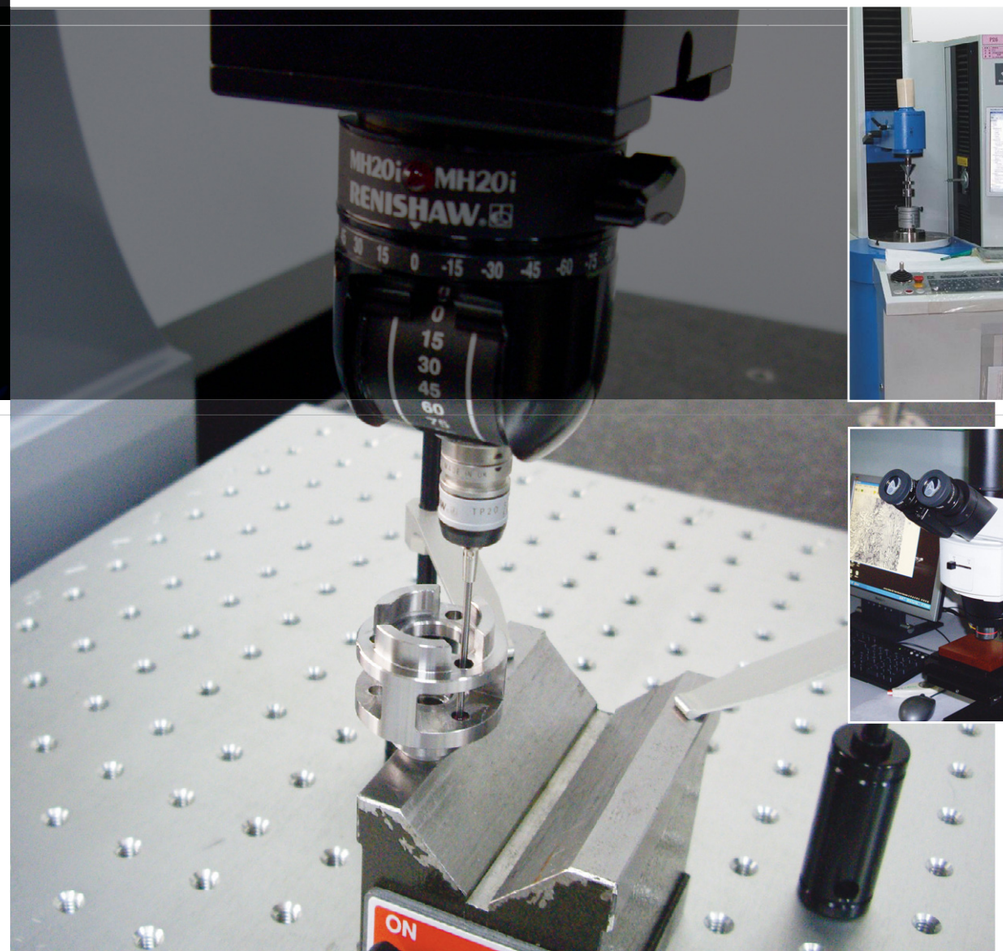
High Precision Planetary Reducer

Comprehensive

Quality Control System

Comprehensive quality control is not a mere slogan

[Comprehensive quality control] is never a mere slogan of **ATG**. We adhere to our quality policy. To each quality requirement, we have to set up rigorous quality standards for prompt and accurate quality control every single part is subjected to comprehensive inspection and tests, from initial receipt of material to assembly of finished products and regular operation, to completely satisfy your requirement. Our quality control department has the most advanced inspection equipment conducting precision measurement (A good tool is the master of all good works.) Our precision inspection instruments are the best assurance of our reliable quality.



ATG(KSB, KSE) Planetary Reducers

ATG 시리즈의 정밀한 planetary 감속기는 helical gear와 Spur gear를 사용하고 있습니다. 모든 기어는 최적의 CNC 기어로 움직여 매우 정밀하고 기어 맞물림은 정확하며 가동은 부드럽고 소음은 최소입니다. 일체형 합성가공 기어박스 본체는 경쟁사 변속기어와 비교할때, ATG 감속기가 더 작은 구조(부피와 무게의 1/4 이상 절약)이며 더 높은 회전력과 변속기 효율을 자랑합니다.

ATG series high precision planetary gear reducer employs helical gears. All gears are high precision machined by CNC gear hobbing machine, providing high accuracy gear engagement,smooth running and minimum noise.

One-piece fabricated gear box body.When comparing with the competitive gear reducer, **ATG** gear reducer features smaller construction(Saves over 1/4 of volume and weight), higher torque output and higher transmission efficiency.

Features of KSB, KSE Series

ATG

Low Noise
65dB 이하

Low Backlash
1 Stage는 3 Arc-min~10 Arc-min.
2 Stage는 4 Arc-min~12 Arc-min으로 선택 설계 가능.

High Efficiency
1 stage 모델 효율성 97% 이내.
2 stage 모델은 94% 이내.

High Input Speed
입력 속도 5000 RPM 이상 허용.

High Torque
기존 Planetary 변속기어보다 보다
높은 Torque.

High Stability
높은 장력의 합금 사용.
기어 표면 경화는 표면만 경화가 아닌
기어 전체 경화로 만들어 짐.
이는 기어의 생명 연장과 오랜 기간의 운전 후에도
새 것 같은 정확성을 유지시켜 줌.

High Speed Reduction Ratio
모듈 디자인. Planetary 기어 박스 접촉 가능.
변속 비율 1/10000 이상.

Low Noise
Under 65dB

Low Backlash
Backlash is under 12 Arc-min.Available to select specification with 3 Arc-min.of backlash.Backlash for two-stage speed reduction is within 15 Arc-min.

High Efficiency
Efficiency for single stage model exceeds 97%.For two-stage model exceeds 94%.

High Input Speed
Input speed allows for up to 5000 RPM.

High Torque
Higher torque output than that of conventional planetary gear reducers.

High Stability
Employs high tensile strength alloy steel.Gear hardening is made for the entir gear instead of only surface hardening,which extends gear service life and maintain high accuracy as new after a long period of operation.

High Speed Reduction Ratio
The gear reducer is a modular deign.The planetary gear box con be connected. Speed reduction ratio is over1/10000.

Indication Of Model Numbers

KSB	-	90	-	10	-	P0	-	MOTOR
TYPE KSE KSB		**MODEL** 44 62, 62A 90 120 142, 142A 180, 180A 220, 220A		**RATIO** SINGLE STAGE 3,4,5,6,7,8,9,10 DOUBLE STAGE 15~100 TRIPLE STAGE 125~1000		**BACKLASH CLASS** SINGLE STAGE P0≤ 3 Arc-min P1≤ 6 Arc-min P2≤10 Arc-min DOUBLE STAGE P0≤ 4 Arc-min P1≤ 8 Arc-min P2≤10 Arc-min		**MOTORE TYPE** MOTORE BLAND & MODEL NO.

A-TYPE의 정의

1. IN SHAFT SIZE
KSB-62-2 STAGE, SB-142-2 STAGE, SB-180-2 STAGE, SB-220-2 STAGE의 경우, 1/30 이하의 감속기에 MOTOR를 적용 시 감속기가 지원하는 IN SHAFT의 크기로 인해 조립 할 수 없는 경우가 발생합니다.
이러한 경우 SB-A TYPE의 감속기를 사용하셔야 합니다.

EX)
KSB-62-15-P1 (IN SHAFT SIZE 11)+MITSUBISHI KFS43 (IN SHAFT SIZE 14) → 조립불가
KSB-62A-15-P1 (IN SHAFT SIZE 14)+MITSUBISHI KFS43 (IN SHAFT SIZE 14) → 조립가능

MODEL	1 STAGE-IN SHAFT SIZE	2 STAGE-IN SHAFT SIZE	A TYPE
44	8	8	*
62	14	11	14
90	19	19	*
120	24	24	*
142	35	32	35
180	48	35	42
220	55	48	55

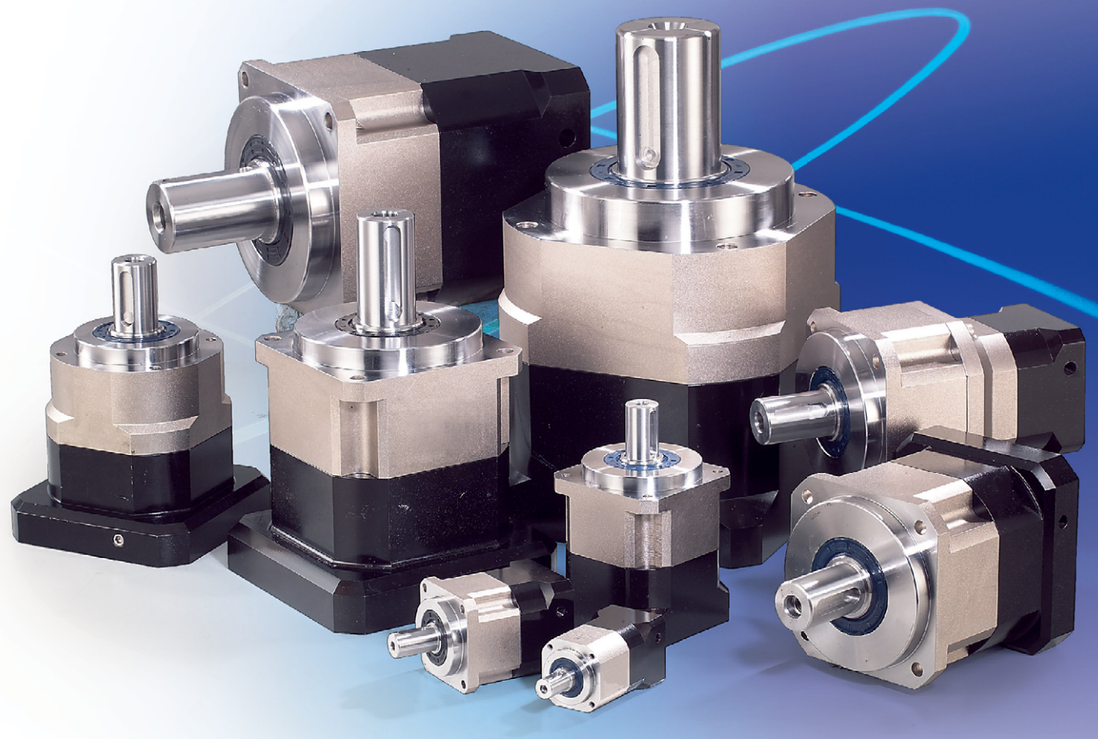
일반적으로 감속비가 1/12~1/30일 경우 감속기의 정격 및 최대 토오크 값이 모터의 정격 및 최대 토오크 범주 안에 속하기 때문에 안정성 있는 사용 환경을 보장합니다.

2. 외관형태
KSB 감속기는 2 STAGE 부분이 더 작아지는 외관을 가지고 있습니다.
1 STAGE와 2 STAGE 부분의 SIZE가 동일한 제품을 사용하셔야 하실 경우,
A TYPE의 감속기를 선정하셔야 합니다.

Concept of Planetary Redacer

중요한 기술적 요인인 변속기어, 변속비율, 평균 수명, 정격 회전력, 최대 효율, 소음, axial과 Radial 구동능력, 작업온도의 성능 평가가 지원된다.

Some critical technical parameters are normally applied for evaluating the performance of a gear reducer, speed reduction ratio,average service life, rated output torque, retum full load efficiency, noise, axial and radial loading capacity and working temperature.



- **기어 비율 :** 출력속도에서 입력속도의 비율.
  GEAR RATIO : A ratio of output speed to input speed.

- **평균 수명 :** 출력속도에 따른 변속기 운동시간의 지속적인 상태 비율.
  AVERAGE SERVICE LIFE : Under the rated loading condition the continuous working time for a gear reducer running at the rated input speed.
  It will reduce 1/2 service life for continue running.

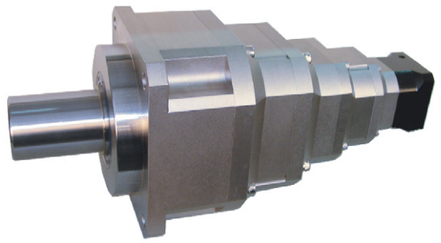
- **최대 작업 효율 :** 변속기어의 효율은 최대 작업 상태에 따른다.
  이것은 좋은 성능과 함께 변속기어의 매우 중요한 평가 요인이다.
  FULL LOAD EFFICIENCY : The transmission efficiency of a gear reducer under the maximum loading condition. It is an important evaluation factor for a gear reducer. A gear reducer with high performance.

- **소음 :** 소음은 입력 속도 3,000rpm 상태에서 변속기와 1미터 떨어진 지점에서 측정한다.
  NOISE: The noise is measured under the conditions of input speed 3000 rpm, no load ans one meter distance from the gear reducer.

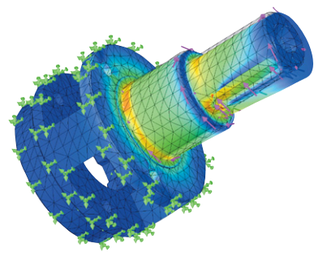
- **작업 온도 :** 감속기 사용의 적정 온도는 –25～+90℃의 환경에서 가능하다.
  WORKING TEMPERATURE: The allowabke temperature for a gear red ucer under the conditions of continuous and frequcer can work at-25 ~ +90 degree working environment.

Concept of Planetary Redacer

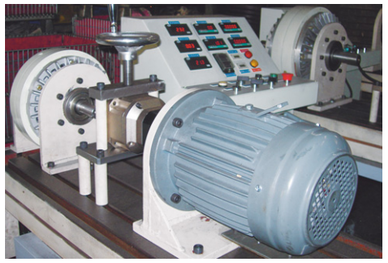
SATGE NUMBERS : The sun gear and planetary gear forms an independent speed reduction gear train.If the there is only one gear train in the gear reducer,it is defined as one stage transmission.In order to achieve higher speed reduction ratio, multiple stages transmission is required. Li Ming's standard gear reducers are classified into one stage and two-stage transmission.Speed reduction ratio range is from 3 to 100.The modular construction combined with multiple stages transmissiom allow speed reduction ratio ftom 100 to over 100.000.



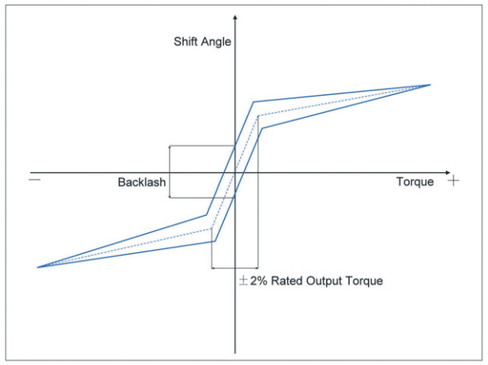
RATED OUTPUT TORQUE : Under the rated loading and long time running conditions, the allowable output toque for a gear reducer The maximum output is the triple of this value.



CAE



Loading Test



일반적으로 감속기의 정도를 나타내는 백래쉬를 측정할 때는 감속기의 정격 부하토크량의 2% 가하여 측정된 값을 읽습니다.

BACK LASH : When the input end is fixed, the output end runs clockwisely and counte-clockwisely to create a + 2% of the rated torque at the output end.This will result in a slight angular displaciment at the output end, which is called as retum clearance Unit in arc-min. ie., one sixtieth of a degree.

Set collar, Clamp 능력 TEST 결과치

TEST RESULTS				LM – 080513	
LI MING MACHINERY CO., LTD		TECHNICIAN : Cheng-Yi Chang		DATE: 13/05/2008	
MODEL	SB	TEST CODE	LM-014524	RATIO	SB-1/10	CLASS : P1

Test Objective:
Determine maxinum torque capacity of set collar and clamp system

Test Equipment: Torque wrench

Test Mestod:
1. Secure set collar, insert the motor shaft into set collar
2. Tighten the set collar bolt with torque wrench
3. Then fixed in fixture and apply torque, until the motor shaft slip and record the torque value.
4. Record value from torque wrench

테스트 목적:
Set Collar와 클램핑 시스템의 최대 토크를 측정하기 위함

테스트장비: 토크 렌치

테스트 방법:
1. Set Collar를 고정한 후, motor shaft를 넣는다.
2. 토크 렌치로 Set Collar를 조인다.
3. 고정장치에 토크 값을 적용한 후, motor shaft slip이 일어나는 값을 기록한다.
4. 토크 렌치로부터 값을 기록한다.

Table A

MODEL	Clamp screw	Streength tightening torque	Tighten torque (N.M)	Value (n.M)
SB 44	M3*P 0.5	12.9	2.2	58
SB 62	M4*P 0.7	12.9	4.83	102
	M5*P 0.8	12.9	10	164
SB 90	M6*P 1.0	12.9	16.3	233
SB 120	M8*P 1.25	12.9	41	423
SB 142, 180, 220	M10*P 1.5	12.9	81	678

Lubricating Oil

윤활유: Mobill SHC 629

Mobil 기어오일 600series는 보통 혹은 가혹한 조건에서 각종 밀폐식 기어장치 사용이 가능한 우수 중장비용 기어오일입니다.
이 제품에서 사용된 첨가제 결합은 녹과 부식 및 산화 방지성, 기포 방지성, 탁월한 내마모 성능을 제공합니다.
또한 이제품은 미국기어제조공정협회(AGMA)의 규격 및 성능요구에 준합니다.

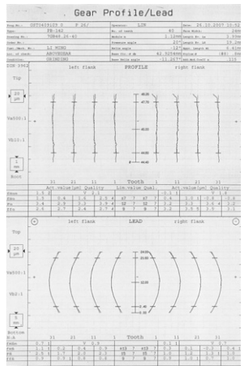
Typical Properties

ATG 제품에 사용된 윤활유

Mobil SHC 600 Series	624	625 (1)	626	627	629
ISO Viscosity Grad	e32	46	68	100	150
Viscosity, ASTM D 445					
cSt @ 40˚C	31.0	46.0	66.0	97.0	149
cSt @ 100˚C	5.8	7.710.3	13.7	19.0	
Viscosity Index, ASTM D 2270	133	136144	144	144	
Pour Point, 오C, ASTM D 97	−51	−48	−48	−45	−45
Flash Point, 오C, ASTM D 92	237	242	231	228	235
Specific Gravity, ASTM D 4052, 15오 C/15˚C	0.85	0.85	0.86	0.86	0.86
Appearance, visual	Orange	Orange	Orange	Orange	Orange
TOST, ASTM D 943, Hours to 2 NN	10,000+	10,000+	10,000+	10,000+	10,000+
RBOT, ASTM D 2272, min.	1750	1750	1750	1750	1750
Rust protection, ASTM D665, Sea Water	Pass	Pass	Pass	Pass	Pass
Water Seperability, ASTM D 1401,Min. to 37 ml water @ 54˚C	20	20	20	–	–
Water Seperability, ASTM D 1401,Min. to 37 ml water @ 82˚C	–	–	–	15	15
Copper Corrosion, ASTM D130, 24 hrs @ 121˚C	1B	1B	1B	1B	1B
Foam Test, ASTM D 892, Seq I,II,III Tendency / Stability, ml/ml	0/0, 20/0, 0/0	0/0, 0/0, 0/0	0/0, 0/0, 0/0	0/0, 0/0,0/0	0/0, 0/0,0/0
FZG scuffing test, DIN 51534 (mod), A/16.6/90, Failure Stage	10	11	11	13	13
(1) 625 is available only in the USA					

* www.mobil.com에서 자료 발췌

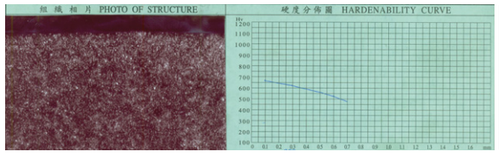
Gear Profile/Lead

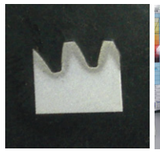


HIGH PRECISION GEAR MACHINING : The planetary gear and sun gear are manufactured from high quality Cr-Mo alloy steel(SNCM220),precision machined and carbunzed to ardness 57-60 HRC.Precision teeth grinding assures gear accuracy reaches DIN6 CLASS.It provides better wear resistance,impact resistance and longer service life than gears with only surface nitrided.

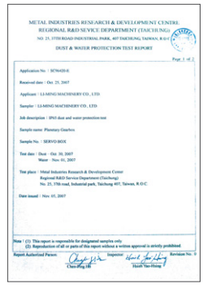
Heat Treatment

● Metallograph ● Hardenability curve





Lubrication



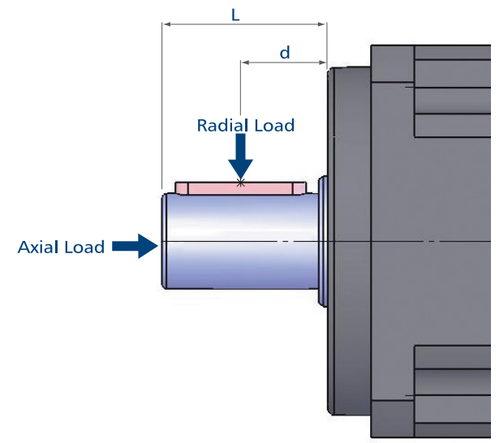
● IP65 Test Report by Metal Industries & Development centre.

● LUBRICATION : It's no essential to replace lubricant during the service life of the planetary gear reducer.

IEC-529 STANDARD 규정 등급입니다.
즉, SB SERIES 감속기는 방진방수를 가진 구조라는 뜻입니다.

첫 번째 보호 등급		두 번째 보호 등급	
NO	고형 물체의 침투, 접촉에 의한 보호 등급	NO	물의 침입에 대한 보호 등급
0	보호 없음	0	보호 없음
1	직경 50mm 이상의 고체에 보호	1	응결된 물방울에 대한 보호
2	직경 50mm 이상의 고체에 보호	2	15°각도에서 떨어지는 물방울에 보호
3	직경 50mm 이상의 고체에 보호	3	60°각도에서 떨어지는 물방울에 보호
4	직경 50mm 이상의 고체에 보호	4	모든 방향에서 분사되는 물의 침투 방지
5	운전에 영향을 안 줄 정도의 먼지에 대한 보호	5	모든 방향에서 분사되는 압력을 가진 물의 침투 방지
6	먼지에 대한 완전한 보호	6	고압 분무기로 분사되는 물의 침투 방지
		7	잠정적으로 침수된 물속에서의 물의 침투 방지
		8	압력을 가진 수중에서의 보호

Permitted Radial Loads on Output Shaft of the Gearbox



감속기의 OUT SHAFT 쪽에 벨트를 이어 기구에 동력전달을 할 때, Radial load(OHL)를 계산하는 방식은 아래와 같습니다.

OHL = (T×s×f×p)/R
T = 사용할 최대 토오크
s = 부하 하중(아래 Table-a 표)
f = 주행 하중(아래 Driven Coffcient 표)
p = 위치점: 부하 값이 D와 같으면 P = 1
부하 값이 D 보다 크면 P = 1.5
R = 벨트 폴리 또는 제안 폴리의 반지름 값

Table-1(s)

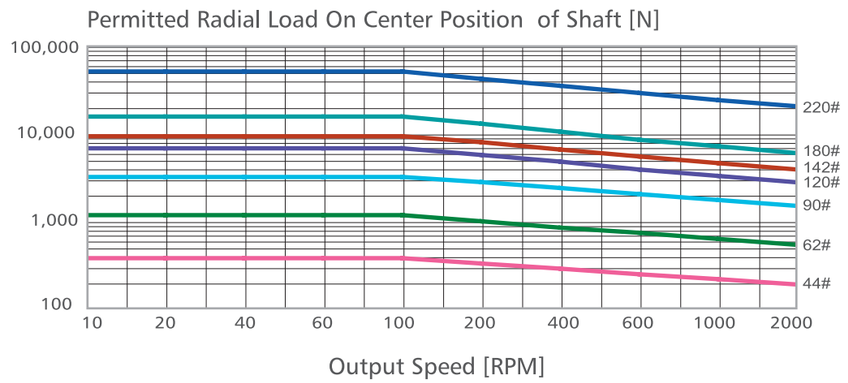
Loading classification	Running per Day			
	0.50 hr	2 hr	8~10 hr	10~24hr
Uniform	0.80	0.90	1.00	1.25
Medium shock	0.90	1.00	1.25	1.50
Heavy shock	1.00	1.25	1.50	1.75

Driven Coeffcient (f)

Driven	(f)
Chain pully	1.00
Gear	1.25
V-belt	1.50
Flat-belt	2.50

● 한시간 이내에 정회전 · 역회전 · 정지 상태를 10회 이상 바꿀 시에는 상기표에 기재된 Data 값의 ±20% 차이가 나타날 수도 있습니다.

● The permltted radial load is reduced when output RPM increased.



ATG Planetary Reducers

Helical gear design

변속 장치는 helical gear입니다. 일반적인 spur gear와 비교했을 때 톱니 맞물림 백분율과 두배를 요구하기 때문입니다. 또한 낮은 소음으로 높은 회전 출력과 낮은 백러쉬를 특징으로 하고 있습니다.

Helical Gear Design

The speed reduction mechanism employs helical gears,which provides two times of teeth profile engagement percentage when comparing with common spur gears.In addition, it also features extremely smooth running low nose,high torque output and low backlash.

Synthetic lubnicatio grease

IP65 등급은 보수 없이 누출문제를 충분히 막고 보호합니다.

Synthetic Lubnication Grease

Employs synthetic lubrication.The class IP65 protective sealing design fully avoiods leaking problem without maintenance.

Collet chuck locking mechanism

감속기의 입력과 Motor의 출력 shaft를 연결하기 위한 기계 구조입니다. 이는 역학상 확실한 집중력과 높은 속도에서 구동할 때 접촉의 균형을 이룰 수 있는 구조입니다.

Collet Chuck Locking Mechanism

The input end and the motor is coupled through a collet chuck locking meshanism. It is dynamically balanced to assure concentricity and balance on the connection when running at high speed.No backlash for power transmission.

Full needle bearings design

Planetary 변속기어는 접촉면 증가를 위한 retainer 없는 full needle bearing입니다. 구조적 강도와 출력 회전력을 상승시킨 것입니다.

Full Needle Bearings Design

The planetary gear transmission employs full needle beanings wirhout retainer to increase the contact surface,which greatly upgrades structural rigidity and output torque.

Integrated planetary arm bracket

Planetary arm bracket과 출력 이동은 하나의 비틀림의 강도와 정확도를 상승시키는 구조입니다. 전체 구조는 최대 허용량에서 한번에 정확하게 컨트롤 할 수 있습니다.

Integrated Planetary Arm Bracket

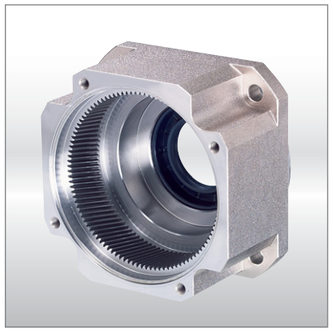
The planetary arm bracket and the output shaft are one-piece constructed to increase torsional rigidity and accuracy.The entire structure is one-time machined for controlling accuracy in the specified tolerance.

High precision gear machining

Planetary Gear와 Sun 기어는 Cr-Mo 합금스틸(SNCM220)로 제작 되었습니다.
톱니는 정밀한 가공으로 DIN6 등급의 정밀도를 보증합니다.

High Precision Gear Machining

The planetary gear and sun gear are manufactured from high quality Cr-Mo alloy steel(SNCM220),precision machined and carbunzed to ardness 57-60 HRC.Precision teeth grinding assures gear accuracy reaches DIN6 CLASS.It provides better wear resistance,impact resistance and longer service life than gears with only surface nitrided.

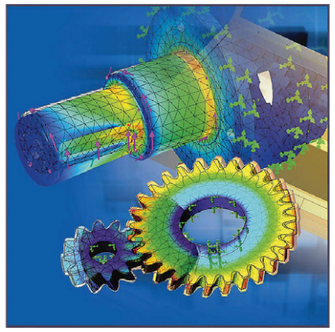


One-piece gear box body & advanced surface treatment

기어박스와 내부 링은 하나의 구조로 이루어져 있습니다. Cr-Mo 합금스틸로 제작 되었으며 높은 회전 출력을 낼 수 있는 DIN6 등급의 정밀도를 가지고 있습니다.
높은 저항력은 다양한 외부환경으로부터 감속기 표면을 보호하는 역할을 합니다.

One-piece Gear box Body & Advanced Surface Treatment

The gear box and internal ring are one-piece constructed, which is manufactured from Cr-Mo alloy steel(SCM435), and tempered for high torque output. High gear accuracy meets DIN6 class standard.Gear surface is anti-corrosive treated for upgrading environmental-resistant and corrosion-resistant capability.

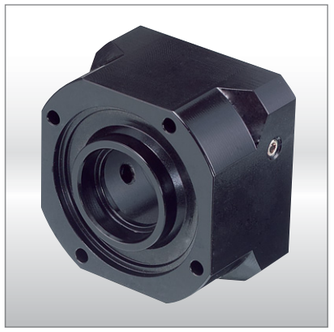


3D-CAD design and analysis

분석과 디자인을 위한 3D-CAD 소프트웨어. 소프트웨어는 전체 변속기의 길이와 톱니 형태와 리드의 수정하기 위한 분석을 합니다. 변속기 충격과 기어와 변속기어의 수명이 늘어나는 동안 조임과 풀림에서 일어납니다.

CAE Design And Analysis

Employs 3D-CAE software for analysis and design. The software allows for analyzing the strength of the entire gear reducer and modifying the gelical teeth profile and lead. The reduces iomact and noise dunng teeth engage and disengage, while increasing the service life of gears and the gear reducer.

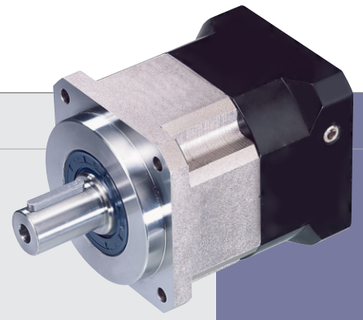


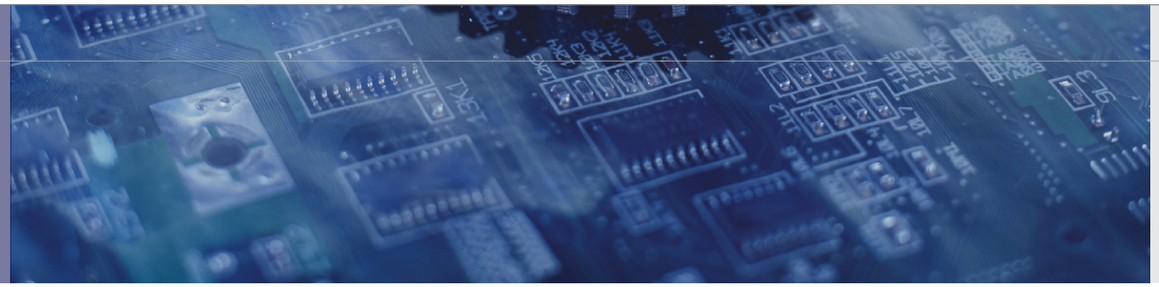
Modular design of motor connection plate

Motor connection plate의 스페셜 모듈 디자인은 어떤 브랜드와 어떤 servomotor 타입에도 적당합니다. 알루미늄 합금 제품의 표면은 저항 환경과 부식가능성을 줄여주고 산화 방지 작용을 합니다.

Modular Design of Motor Connection Plate

The special modular design of motor connection plate is suitable for any brand and any type of servomotor.Manufactured from aluminum alloy, its surface is anti-oxidant treated for upgrading environmental-resistant and corrosion-resistant capability.

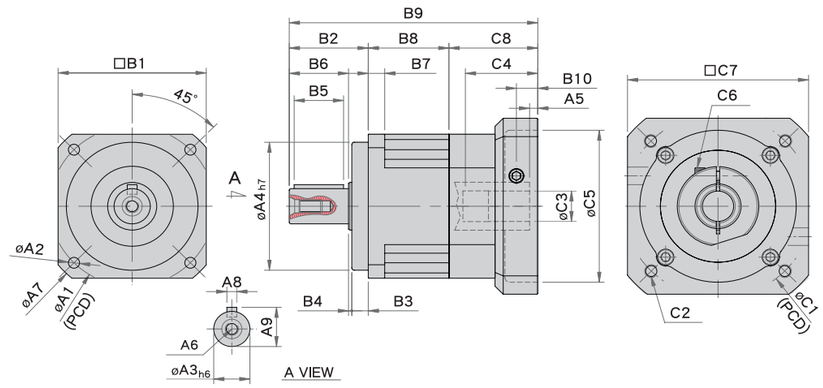




MODEL : KSB

Single Reduction

RATIO : 3.4.5.6.7.8.9.10



unit:mm

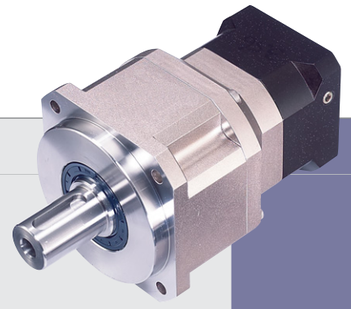
Code \ Model	44	62	90	120	142	180	220
A1	50	70	100	130	165	215	250
A2	4.5	5.5	6.8	9	11	13	17
A3	13	16	22	32	40	55	75
A4	35	50	80	110	130	160	180
A5	5	6	8	9	9.5	11.5	12.5
A6	M4 x P0.7	M5 x P0.8	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
A7	58	80	116	148	186	239	288
A8	5	5	6	10	12	16	20
A9	15	18	24.5	35	43	59	79.5
B1	44	62	90	120	142	180	220
B2	26	36	48	65	92	106	139
B3	5	7	10	12	15	20	30
B4	1	1	2	3	3	4	5
B5	15	20	30	40	65	70	90
B6	20	28	36	50	74	82	104
B7	5	8	10	12	15	16	20
B8	31.5	38	49	61	70	85	93
B9	95	115,123	158.5	204	260.5	323.5	367.5
B10	8.5	11.5	15.5	19.5	20	23.5	23.5
C1	46,60,63,90	70,75,90	90,100,115 145,165	145	145,200,215	200,215,235 265,300	235,265,300
C2	M4 x P0.7 M5 x P0.8	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25 M10 x P1.5	M8 x P1.25 M12 x P1.75	M12 x P1.75 M16 x P2.0	M12 x P1.75 M16 x P2.0
C3	5.65,6, 8,11	6.35,8,10,11 12,14,16,19	14,16,19,22,24	19,22,24,28,32	22,24,28 32,35,38	38,42,48,55	42,48,55
C4	26	33, 41	53	66	84	114	117
C5	30,40,50,70	50,60,70	70,80,95,110,130	110,130	110,114.3,180	114.3,180,200 230,250	200,230,250
C6	M3 x P0.5	M4 x P0.7 M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5	M10 x P1.5
C7	46,55,60,76	64,70,80	92,110,130,142	130,150	146,180,190	182,200,220 250,265	220,250,265
C8	37.5	41,49	61.5	78	98.5	132.5	135.5

* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

■ Mass Moments of Inertia (Kg · cm²)

Ratio	#44	#62	#90	#120	#142	#180	#220
3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
9	0.03	0.13	0.44	2.57	7.04	22.53	50.63
10	0.03	0.13	0.44	2.57	7.03	22.51	50.56

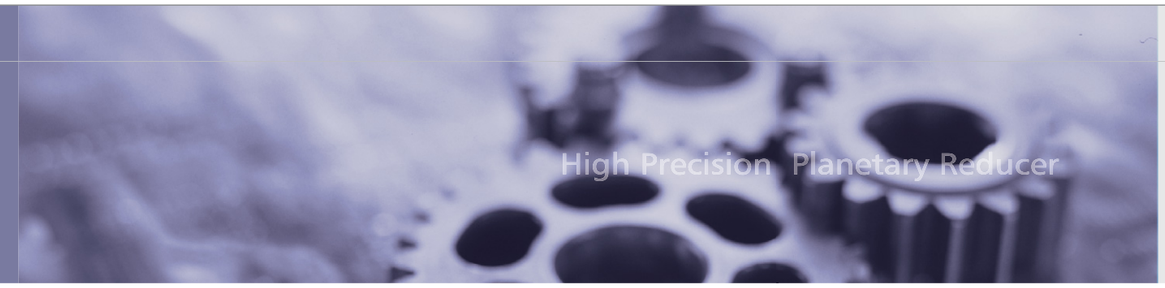
Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	3	19	59	165	335	625	1206	2030
		4	16	51	146	300	555	1069	1804
		5	16	48	160	333	618	1189	2010
		6	15	45	151	311	583	1118	1911
		7	15	45	149	309	573	1108	1870
		8	14	43	143	298	553	1070	1824
		9	13	44	145	278	516	993	1694
		10	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	3~10	3 Times of Rated Output Torque						
Rated Input Speed	rpm	3~10	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	3~10	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	3~10	≦3	≦3	≦3	≦3	≦3	≦3	≦3
Backlash P1	arcmin	3~10	≦6	≦6	≦6	≦6	≦6	≦6	≦6
Backlash P2	arcmin	3~10	≦10	≦10	≦10	≦10	≦10	≦10	≦10
Torsional Rigidity	Nm/arcmin	3~10	3	6	14	27	60	140	240
Max. Radial Load	N	3~10	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	3~10	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	3~10	30,000						
Efficiency	%	3~10	≧97						
Operating Temperature	℃	3~10	-25℃ ~ +90℃						
Lubrication"		3~10	Synthetic gear oil						
Degree of Gearbox Protection		3~10	IP65						
Mounting Position		3~10	Any						
Noise Level	dB	3~10	≦56	≦58	≦60	≦63	≦65	≦67	≦70

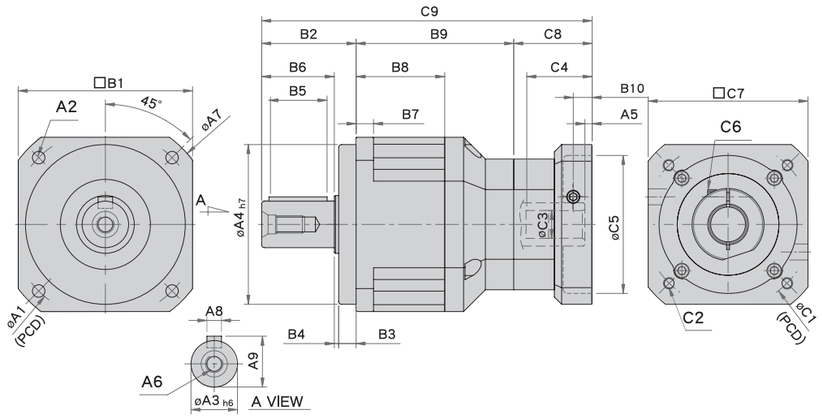


MODEL : KSB

Double Reduction

RATIO : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100





unit:mm

	Model / Code	62	90	120	142	180	220
A	A1	70	100	130	165	215	250
	A2	5.5	6.8		11	13	17
	A3	16	22	32	40	55	75
	A4	50		110	130	160	180
	A5	5	6	8	9	9.5	11.5
	A6	M5 x P0.8	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
	A7	80	116	148	186	239	288
	A8	5	6	10	12	16	20
	A9	18	24.5	35	43	59	79.5
B	B1	62	90	120	142	180	220
	B2	36	48	65	92	106	139
	B3	7	10	12	15	20	30
	B4	1	2	3	3	4	5
	B5	20	30	40	65	70	90
	B6	28	36	50	74	82	104
	B7	8	10	12	15	16	20
	B8	38	49	61	70	85	93
	B9	66	83.5	108.5	127.5	154	175
	B10	8.5	11.5	15.5	19.5	20	23.5
C	C1	46,60,63,90	70,75,90	90,100,115 145,165	145,165	145,200,215	200,215,235 265,300
	C2	M4 x P0.7 M5 x P0.8	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25	M8 x P1.25 M12 x P1.75	M12 x P1.75 M16 x P1.5
	C3	5.65,6, 8,11	6.35,8,10,11 12,14,16, 19	14,16,19,22,24	19,22,24,28,32	22,24,28,32 35,38	38,42,48,55
	C4	26	33, 41	53	66	84	114
	C5	30,40,50,70	50,60,70	0,80,95,110,130	110,130	110,114.3,180	114.3,180,200 230,250
	C6	M3 x P0.5	M4 x P0.7	M6 x P1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5
	C7	44,55,60	64,70,80	92,110,130,142	130,150	146,180,190	182,200,220 250,265
	C8	37.5	41,49	61.5	78	98.5	132.5
	C9	139.5	172.5	235	297.5	358.5	446.5

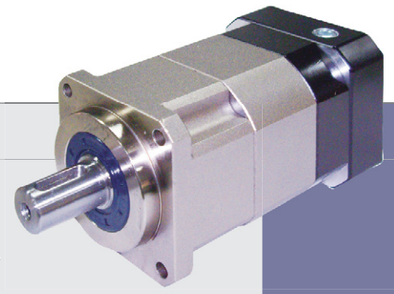
* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

■ Mass Moments of Inertia (Kg · cm²)

Ratio	#44	#62	#90	#120	#142	#180	#220
15	0.03	0.03	0.14	0.46	2.63	7.3	22.79
20	0.03	0.03	0.14	0.46	2.63	7.3	22.79
25	0.03	0.03	0.14	0.46	2.63	7.1	22.79
30	0.03	0.03	0.14	0.46	2.43	7.1	22.59
35	0.03	0.03	0.14	0.44	2.43	7.1	22.59
40	0.03	0.03	0.14	0.44	2.43	6.92	22.59
50	0.03	0.03	0.14	0.44	2.43	6.92	22.59
60	0.03	0.03	0.14	0.43	2.39	6.72	21.83
70	0.03	0.03	0.14	0.43	2.39	6.72	21.83
80	0.03	0.03	0.14	0.43	2.39	6.72	21.83
90	0.03	0.03	0.14	0.40	2.39	6.72	21.60
100	0.03	0.03	0.14	0.40	2.39	6.72	21.60

Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	15	19	59	165	335	625	1206	2030
		20	16	51	146	300	555	1069	1804
		25	16	48	160	333	618	1189	2010
		30	15	45	151	311	583	1118	1911
		35	15	45	149	309	573	1108	1870
		40	14	43	143	298	553	1070	1824
		50	16	48	160	333	618	1189	2010
		60	15	45	151	311	583	1118	1911
		70	15	45	149	309	573	1108	1870
		80	14	43	143	298	553	1070	1824
		90	13	44	145	278	516	993	1694
		100	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	15~100	3 Times of Rated Output Torque						
Rated Input Speed	rpm	15~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	15~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	15~100	≦4	≦4	≦4	≦4	≦4	≦4	≦4
Backlash P1	arcmin	15~100	≦8	≦8	≦8	≦8	≦8	≦8	≦8
Backlash P2	arcmin	15~100	≦12	≦12	≦12	≦12	≦12	≦12	≦12
Torsional Rigidity	Nm/arcmin	15~100	3	6	14	27	60	140	240
Max. Radial Load	N	15~100	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	15~100	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	15~100	30,000						
Efficiency	%	15~100	≧94%						
Operating Temperature	℃	15~100	-25℃ ~ +90℃						
Lubrication"		15~100	Synthetic gear oil						
Degree of Gearbox Protection		15~100	IP65						
Mounting Position		15~100	Any						
Noise Level	dB	15~100	≦56	≦58	≦60	≦63	≦65	≦67	≦70

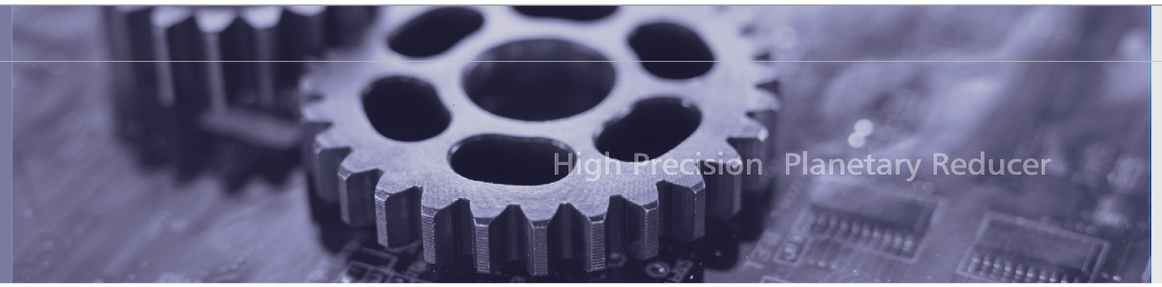
ATG Planetary Reducers

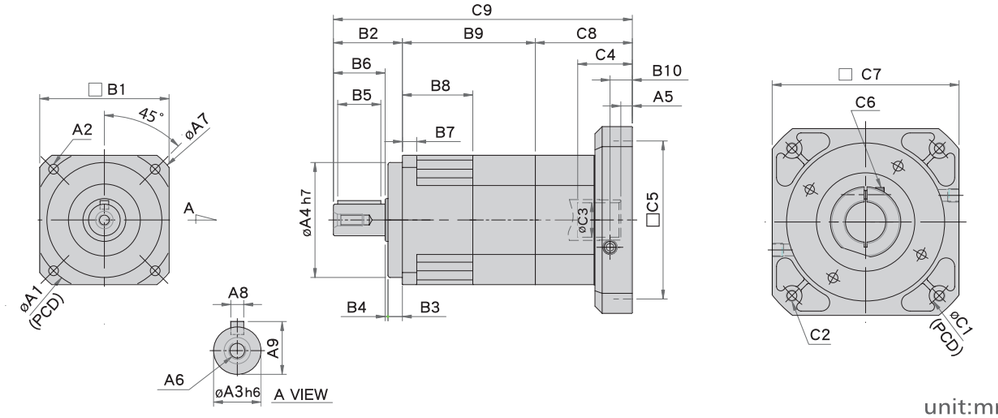


MODEL : KSB-A

Double Reduction

RATIO : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100





unit:mm

	Model Code	44A	62A	90A	120A	142A	180A	220A
A	A1	50	70	100	130	165	215	250
	A2	4.5	5.5	6.8	9	11	13	17
	A3	13	16	22	32	40	55	75
	A4	35	50	80	110	130	160	180
	A5	5	6	8	9	9.5	11.5	12.5
	A6	M4 x P0.7	M5 x P0.8	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
	A7	58	80	116	148	186	239	288
	A8	5	5	6	10	12	16	20
	A9	15	18	24.5	35	43	59	79.5
B	B1	44	62	90	120	142	180	220
	B2	26	36	48	65	92	106	139
	B3	5	7	10	12	15	20	30
	B4	1	1	2	3	3	4	5
	B5	15	20	30	40	65	70	90
	B6	20	28	36	50	74	82	104
	B7	5	8	10	12	15	16	20
	B8	31.5	38	49	61	70	85	93
	B9	57.5	71.8	92.5	92.5	136.5	166	186
	B10	8.5	11.5	15.5	19.5	20	23.5	23.5
C	C1	46,60,63,90	70,75,90	90,100,115145,165	145,165	145,200,215	200,215,235,265,300	235,265,300
	C2	M4 x P0.7 M5 x P0.8	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25 M10 x P1.5	M8 x P1.25 M12 x P1.75	M12 x P1.75 M16 x P2.0	M12 x P1.75 M16 x P2.0
	C3	5.65,6,8,11	6.35,8,10,11 12,14,16,19	14,16,19,22,24	19,22,24,28,32	22,24,28 32,35,38	38,42,48,55	42,48,55
	C4	26	33,41	38	66	84	114	117
	C5	30,40,50,70	50,60,70	70,80,95110,130	110,130	110,114.3,180	114.3,180,200,230,250	200,230,250
	C6	M3 x P0.5	M4 x P0.7	M6 x P1.0	M8 x P1.5	M10 x P1.5	M10 x P1.5	M10 x P1.5
	C7	46,55,60,76	64,70,80	92,110,130,142	130,150	146,180,190	182,200,220,250,265	220,250,265
	C8	37.5	41,49	61.5	78	98.5	132.5	135.5
	C9	121	148.8,156.8	208	260	327	404.5	460.5

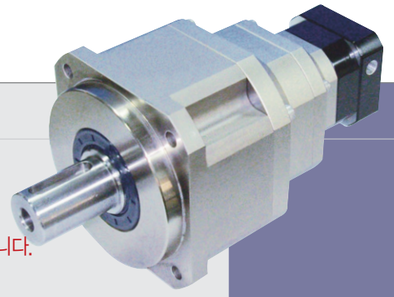
* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

■ Mass Moments of Inertia (Kg · cm²)

Ratio	#44	#62	#90	#120	#142	#180	#220
15	0.03	0.03	0.14	0.46	2.63	7.3	22.79
20	0.03	0.03	0.14	0.46	2.63	7.3	22.79
25	0.03	0.03	0.14	0.46	2.63	7.1	22.79
30	0.03	0.03	0.14	0.46	2.43	7.1	22.59
35	0.03	0.03	0.14	0.44	2.43	7.1	22.59
40	0.03	0.03	0.14	0.44	2.43	6.92	22.59
50	0.03	0.03	0.14	0.44	2.43	6.92	22.59
60	0.03	0.03	0.14	0.43	2.39	6.72	21.83
70	0.03	0.03	0.14	0.43	2.39	6.72	21.83
80	0.03	0.03	0.14	0.43	2.39	6.72	21.83
90	0.03	0.03	0.14	0.40	2.39	6.72	21.60
100	0.03	0.03	0.14	0.40	2.39	6.72	21.60

Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	15	19	59	165	335	625	1206	2030
		20	16	51	146	300	555	1069	1804
		25	16	48	160	333	618	1189	2010
		30	15	45	151	311	583	1118	1911
		35	15	45	149	309	573	1108	1870
		40	14	43	143	298	553	1070	1824
		50	16	48	160	333	618	1189	2010
		60	15	45	151	311	583	1118	1911
		70	15	45	149	309	573	1108	1870
		80	14	43	143	298	553	1070	1824
		90	13	44	145	278	516	993	1694
		100	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	15~100	3 Times of Rated Output Torque						
Rated Input Speed	rpm	15~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	15~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	15~100	≦4	≦4	≦4	≦4	≦4	≦4	≦4
Backlash P1	arcmin	15~100	≦8	≦8	≦8	≦8	≦8	≦8	≦8
Backlash P2	arcmin	15~100	≦12	≦12	≦12	≦12	≦12	≦12	≦12
Torsional Rigidity	Nm/arcmin	15~100	3	6	14	27	60	140	240
Max. Radial Load	N	15~100	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	15~100	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	15~100	30,000						
Efficiency	%	15~100	≧94%						
Operating Temperature	℃	15~100	-25℃ ~ +90℃						
Lubrication"		15~100	Synthetic gear oil						
Degree of Gearbox Protection		15~100	IP65						
Mounting Position		15~100	Any						
Noise Level	dB	15~100	≦56	≦58	≦60	≦63	≦65	≦67	≦70

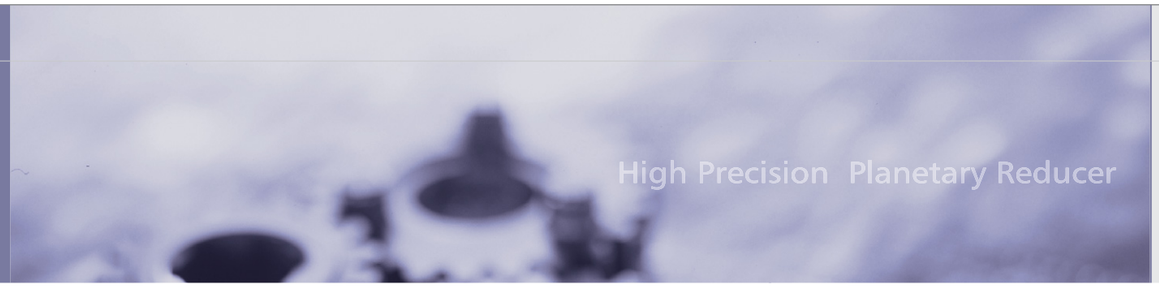
ATG Planetary Reducers

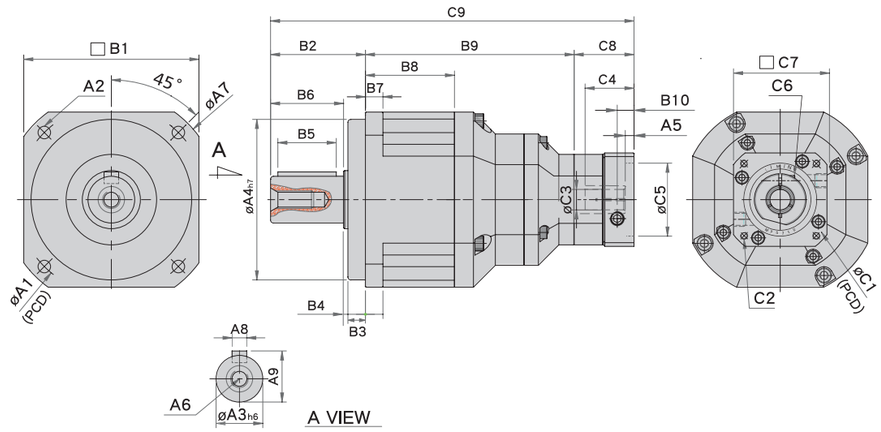


MODEL : KSB

Triple Reduction 특수 제작 주문인 관계로 발주 후에 취소가 불가합니다.

RATIO : 125.150.175.200.250.300.350.
400.450.500.600.700.800.900.1000





	Model / Code	90	120	142	180	220
A	A1	100	130	165	215	250
	A2	6.8	9	11	13	17
	A3	22	32	40	55	75
	A4	80	110	130	160	180
	A5	5	6	8	9	9.5
	A6	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
	A7	116	148	186	239	288
	A8	6	10	12	16	20
	A9	24.5	35	43	59	79.5
B	B1	90	120	142	180	220
	B2	48	65	92	106	139
	B3	10	12	15	20	30
	B4	2	3	3	4	5
	B5	30	40	65	70	90
	B6	36	50	74	82	104
	B7	10	12	15	16	20
	B8	49	61	70	85	93
	B9	111.5	143	175	211.5	244
	B10	8.5	11.5	15.5	19.5	20
C	C1	46,60,63,90	70,75,90	90,100,115,145,165	145,165	145,200,215
	C2	M4 x P0.7	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25	M8 x P1.25 M12 x P1.75
	C3	5.65, 6, 8,11	6.35, 8,11,14,16,19	14, 16,19,22,24	19, 22,24,28,32	22,24,28,32,35,38
	C4	26	33,41	53	66	84
	C5	30,40,50,70	50,60,70	70,80,95110,130	110,130	110,114.3,180
	C6	M4 x P0.7	M4 x P0.7	M6 x P1.0	M8 x P1.25	M10 x P1.5
	C7	46,55,60,76	64,70,80	92,110,130,142	130,150	146,180,190
	C8	37.5	41,49	61.5	78	98.5
	C9	197.5	249,257	328.5	395.5	481.5

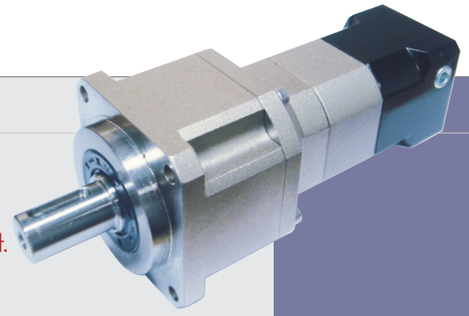
* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

■ Mass Moments of Inertia (Kg · cm²)

Ratio	#62	#90	#120	#142	#180	#220
125	0.01	0.01	0.04	0.71	1.42	3.29
150	0.01	0.01	0.04	0.51	0.92	2.15
175	0.01	0.01	0.04	0.40	0.83	1.26
200	0.01	0.01	0.04	0.21	0.65	0.98
250	0.01	0.01	0.04	0.11	0.52	0.82
300	0.01	0.01	0.04	0.09	0.21	0.82
350	0.01	0.01	0.04	0.09	0.21	0.82
400	0.01	0.01	0.04	0.09	0.21	0.82
450	0.01	0.01	0.04	0.09	0.21	0.51
500	0.01	0.01	0.04	0.08	0.12	0.51
600	0.01	0.01	0.04	0.08	0.12	0.25
700	0.01	0.01	0.04	0.08	0.12	0.25
800	0.01	0.01	0.04	0.08	0.12	0.25
900	0.01	0.01	0.04	0.08	0.12	0.25
1000	0.01	0.01	0.04	0.08	0.12	0.25

Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	125	16	48	160	333	618	1189	2010
		150	19	59	165	335	625	1206	2030
		175	15	45	149	309	573	1108	1870
		200	16	51	146	300	555	1069	1804
		250	16	48	160	333	618	1189	2010
		300	15	45	151	311	583	1118	1911
		350	15	45	149	309	573	1108	1870
		400	14	43	143	298	553	1070	1824
		450	13	44	145	278	516	993	1694
		500	16	48	160	333	618	1189	2010
		600	15	45	151	311	583	1118	1911
		700	15	45	149	309	573	1108	1870
		800	14	43	143	298	553	1070	1824
		900	13	44	145	278	516	993	1694
		1000	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	125~1000	3 Times of Rated Output Torque						
Rated Input Speed	rpm	125~1000	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	125~1000	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	125~1000	≦5	≦5	≦5	≦5	≦5	≦5	≦5
Backlash P1	arcmin	125~1000	≦10	≦10	≦10	≦10	≦10	≦10	≦10
Backlash P2	arcmin	125~1000	≦15	≦15	≦15	≦15	≦15	≦15	≦15
Torsional Rigidity	Nm/arcmin	125~1000	3	6	14	27	60	140	240
Max. Radial Load	N	125~1000	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	125~1000	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	125~1000	30,000						
Efficiency	%	125~1000	≧90%						
Operating Temperature	℃	125~1000	-25℃ ~ +90℃						
Lubrication		125~1000	Synthetic gear oil						
Degree of Gearbox Protection		125~1000	IP65						
Mounting Position		125~1000	Any						
Noise Level	dB	125~1000	≦56	≦58	≦60	≦63	≦65	≦67	≦70

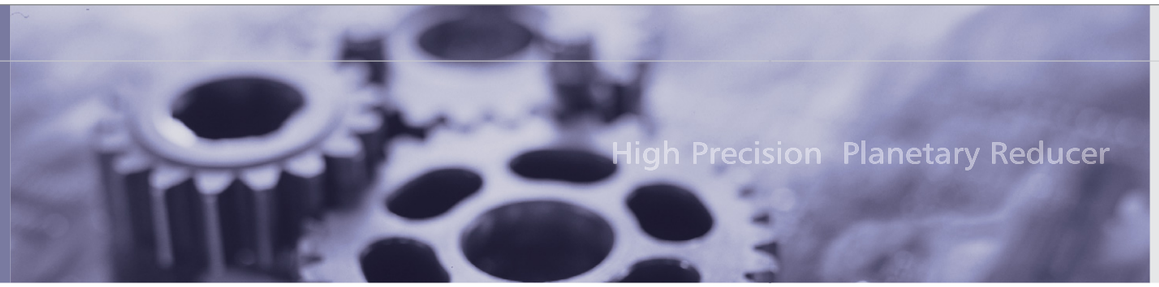
ATG Planetary Reducers

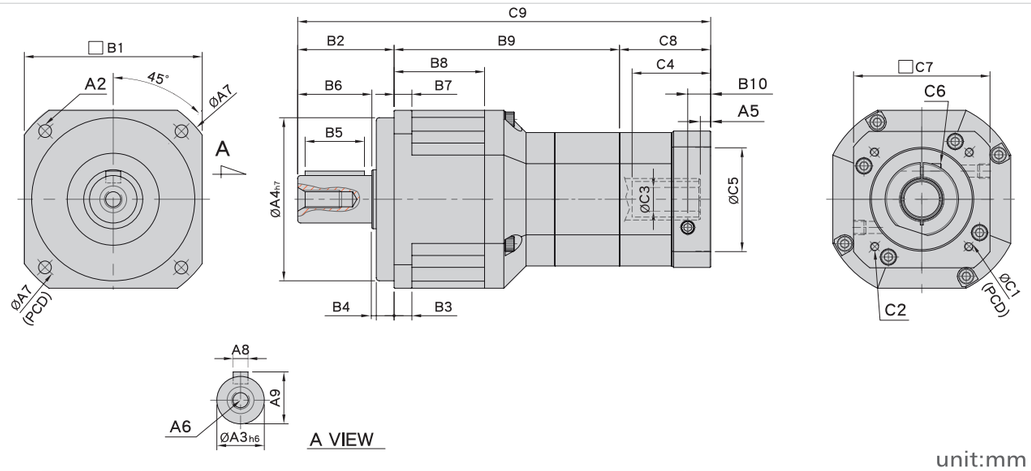


MODEL : KSB

Triple Stage 특수 제작 주문인 관계로 발주 후에 취소가 불가합니다.

RATIO : 125.150.175.200.250.300.350.
400.450.500.600.700.800.900.1000





unit:mm

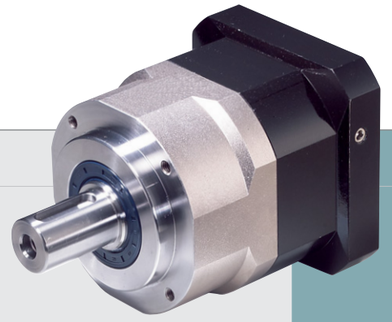
	Model / Code	62A	90A	120A	142A	180A	220A
A	A1	70	100	130	165	215	250
	A2	5.5	6.8	9	11	13	17
	A3	16	22	32	40	55	75
	A4	50	80	110	130	160	180
	A5	5	6	8	9	9.5	11.5
	A6	M5 x P0.8	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
	A7	80	116	148	186	239	288
	A8	5	6	10	12	16	20
	A9	18	24.5	35	43	59	79.5
B	B1	62	90	120	142	180	220
	B2	36	48	65	92	106	139
	B3	7	10	12	15	20	30
	B4	1	2	3	3	4	5
	B5	20	30	40	65	70	90
	B6	28	36	50	74	82	104
	B7	8	10	12	15	16	20
	B8	38	49	61	70	85	93
	B9	92	117.5	152	183.5	220.5	256
	B10	8.5	11.5	15.5	19.5	20	23.5
C	C1	46,60,63,90	70, 75, 90	90, 100, 115, 145, 165	145	145, 200, 215	200, 215, 235, 265, 300
	C2	M4 x P0.7 M5 x P0.8	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25	M8 x P1.25 M12 x P1.75	M12 x P1.75 M16 x P2.0
	C3	5.65, 6, 8,11	6.35,8,11, 14,16,19	14, 16,19,22,24	19, 22,24,28,32	22,24,28, 32,35,38	38, 42, 48, 55
	C4	26	33, 41	53	66	84	114, 117
	C5	30, 40, 50, 70	50, 60, 70	70, 80, 95, 110, 130	110, 130	110, 114.3, 180	114.3, 180, 200, 230, 250
	C6	M3 x P0.5	M4 x P0.7	M6 x P1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5
	C7	46, 55, 60, 76	64, 70, 80	92, 110, 130, 142	130, 150	146, 180, 190	182, 200, 220, 250, 265
	C8	37.5	41, 49	61.5	78	98.5	132.5
	C9	165.5	206.3, 214.3	278.5	353.5	425	527

* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

■ Mass Moments of Inertia (Kg · cm²)

	#62	#90	#120	#142	#180	#220
125	0.01	0.01	0.04	0.71	1.42	3.29
150	0.01	0.01	0.04	0.51	0.92	2.15
175	0.01	0.01	0.04	0.40	0.83	1.26
200	0.01	0.01	0.04	0.21	0.65	0.98
250	0.01	0.01	0.04	0.11	0.52	0.82
300	0.01	0.01	0.04	0.09	0.21	0.82
350	0.01	0.01	0.04	0.09	0.21	0.82
400	0.01	0.01	0.04	0.09	0.21	0.82
450	0.01	0.01	0.04	0.09	0.21	0.51
500	0.01	0.01	0.04	0.08	0.12	0.51
600	0.01	0.01	0.04	0.08	0.12	0.25
700	0.01	0.01	0.04	0.08	0.12	0.25
800	0.01	0.01	0.04	0.08	0.12	0.25
900	0.01	0.01	0.04	0.08	0.12	0.25
1000	0.01	0.01	0.04	0.08	0.12	0.25

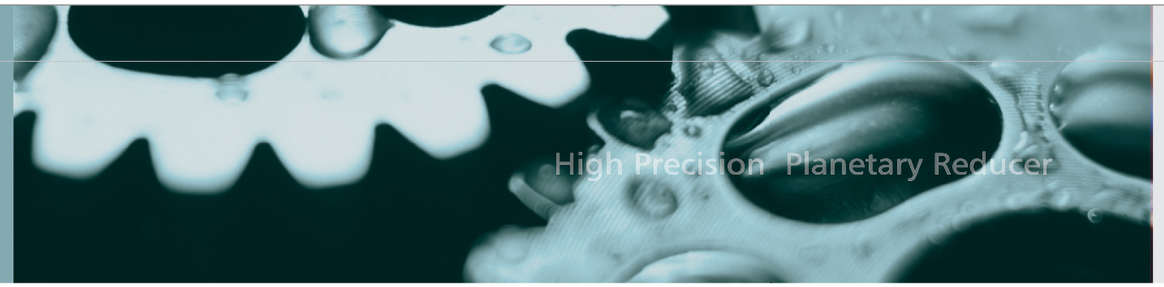
Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	125	16	48	160	333	618	1189	2010
		150	19	59	165	335	625	1206	2030
		175	15	45	149	309	573	1108	1870
		200	16	51	146	300	555	1069	1804
		250	16	48	160	333	618	1189	2010
		300	15	45	151	311	583	1118	1911
		350	15	45	149	309	573	1108	1870
		400	14	43	143	298	553	1070	1824
		450	13	44	145	278	516	993	1694
		500	16	48	160	333	618	1189	2010
		600	15	45	151	311	583	1118	1911
		700	15	45	149	309	573	1108	1870
		800	14	43	143	298	553	1070	1824
		900	13	44	145	278	516	993	1694
		1000	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	125~1000	3 Times of Rated Output Torque						
Rated Input Speed	rpm	125~1000	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	125~1000	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	125~1000	≦5	≦5	≦5	≦5	≦5	≦5	≦5
Backlash P1	arcmin	125~1000	≦10	≦10	≦10	≦10	≦10	≦10	≦10
Backlash P2	arcmin	125~1000	≦15	≦15	≦15	≦15	≦10	≦10	≦10
Torsional Rigidity	Nm/arcmin	125~1000	3	6	14	27	60	140	240
Max. Radial Load	N	125~1000	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	125~1000	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	125~1000	30,000						
Efficiency	%	125~1000	≧90%						
Operating Temperature	℃	125~1000	-25℃ ~ +90℃						
Lubrication		125~1000	Synthetic gear oil						
Degree of Gearbox Protection		125~1000	IP65						
Mounting Position		125~1000	Any						
Noise Level	dB	125~1000	≦56	≦58	≦60	≦63	≦65	≦67	≦70

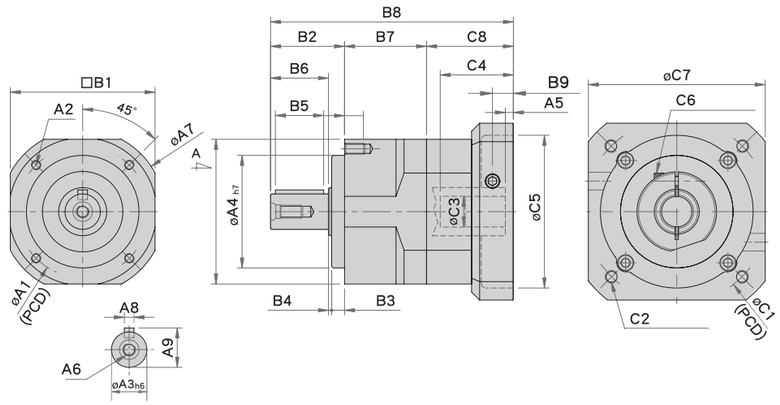


MODEL : KSE

Single Reduction

RATIO : 3.4.5.6.7.8.9.10





unit:mm

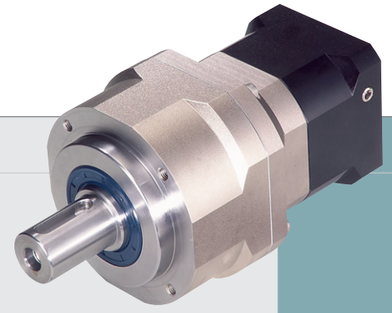
	Model / Code	44	62	90	120	142	180	220
A	A1	44	62	82	110	140	184	218
	A2	M4 x P0.7	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M12 x P1.75	M16 x P2.0
	A3	13	16	22	32	40	55	75
	A4	35	50	70	90	120	160	180
	A5	5	6	8	9	9.5	11.5	12.5
	A6	M4 x P0.7	M5 x P0.8	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
	A7	50	70	102	134	166	215	252
	A8	5	5	6	10	12	16	20
	A9	15	18	24.5	35	43	59	79.5
B	B1	44	62	90	120	142	180	220
	B2	26	36	46	65	92	106	139
	B3	5	7	8	12	15	20	30
	B4	1	1	2	3	3	4	5
	B5	15	20	30	40	65	70	90
	B6	20	28	36	50	74	82	104
	B7	31.5	38	51	61	70	85	93
	B8	95	115, 123	158.5	204	260.5	323.5	367.5
	B9	8.5	11.5	15.5	19.5	20	23.5	23.5
C	C1	46,60,63,90	70,75,90	90,100,115 145,165	145,165	145,200,215	200,215,235 265,300	235,265,300
	C2	M4 x P0.7 M5 x P0.8	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25 M10 x P1.5	M8 x P1.25 M12 x P1.75	M12 x P1.75 M16 x P2.0	M12 x P1.75 M16 x P2.0
	C3	5.65, 6, 8,11	6.35,8,10,11 12,14, 16, 19	14,16,19,22,24	19,22,24,28,32	22,24,28,32 35,38	38,42,48,55	42,48,55
	C4	26	33, 41	53	66	84	114	117
	C5	30,40,50,70	50,60,70	70,80,95 110,130	110,130	110,114.3,180	114.3,180,200 230,250	200,230,250
	C6	M3 x P0.5	M4 x P0.7 M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5	M10 x P1.5
	C7	44,55,60,76	62,70,80	92,110,130,142	130,150	146,180,190	182,200,220 250,265	220,250,260
	C8	37.5	41,49	61.5	78	98.5	132.5	135.5

* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

■ Mass Moments of Inertia (Kg · cm²)

Ratio	#44	#62	#90	#120	#142	#180	#220
3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
9	0.03	0.13	0.44	2.57	7.04	22.53	50.63
10	0.03	0.13	0.44	2.57	7.03	22.51	50.56

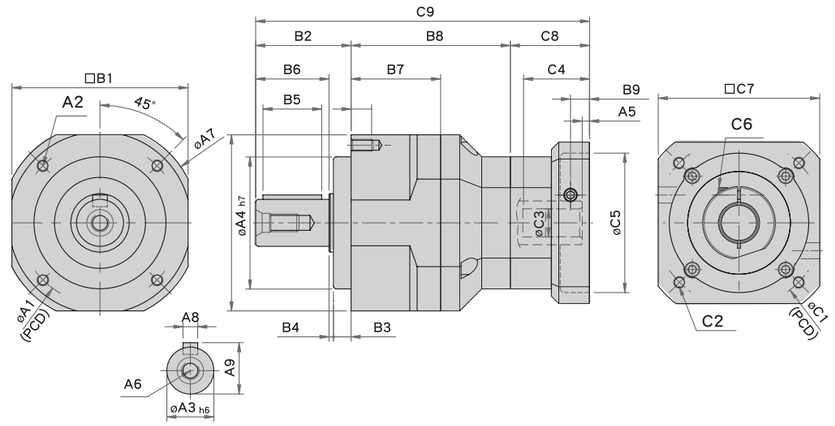
Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	3	19	59	165	335	625	1206	2030
		4	16	51	146	300	555	1069	1804
		5	16	48	160	333	618	1189	2010
		6	15	45	151	311	583	1118	1911
		7	15	45	149	309	573	1108	1870
		8	14	43	143	298	553	1070	1824
		9	13	44	145	278	516	993	1694
		10	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	3~10	3 Times of Rated Output Torque						
Rated Input Speed	rpm	3~10	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	3~10	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	3~10	≦3	≦3	≦3	≦3	≦3	≦3	≦3
Backlash P1	arcmin	3~10	≦6	≦6	≦6	≦6	≦6	≦6	≦6
Backlash P2	arcmin	3~10	≦10	≦10	≦10	≦10	≦10	≦10	≦10
Torsional Rigidity	Nm/arcmin	3~10	3	6	14	27	60	140	240
Max. Radial Load	N	3~10	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	3~10	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	3~10	30,000						
Efficiency	%	3~10	≧97						
Operating Temperature	℃	3~10	-25℃ ~ +90℃						
Lubrication"		3~10	Synthetic gear oil						
Degree of Gearbox Protection		3~10	IP65						
Mounting Position		3~10	Any						
Noise Level	dB	3~10	≦56	≦58	≦60	≦63	≦65	≦67	≦70



MODEL : KSE

Double Reduction

RATIO : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100



unit:mm

	Model / Code	62	90	120	142	180	220
A	A1	62	82	110	140	184	218
	A2	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M12 x P1.75	M16 x P2.0
	A3	16	22	32	40	55	75
	A4	50	70	90	130	160	180
	A5	5	6	8	9	9.5	11.5
	A6	M5 x P0.8	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x 2.5	M20 x P2.5
	A7	70	102	134	166	215	252
	A8	5	6	10	12	16	20
	A9	18	24.5	35	43	59	79.5
B	B1	62	90	120	142	180	220
	B2	36	46	65	92	106	139
	B3	7	10	12	15	20	30
	B4	1	2	3	3	4	5
	B5	20	30	40	65	70	90
	B6	28	36	50	74	82	104
	B7	38	51	61	70	85	93
	B8	66	83.5	108.5	127.5	154	175
	B9	8.5	11.5	15.5	19.5	20	23.5
C	C1	46,60,63,90	70,75,90	90,100,115,145,165	145,165	145,200,215	200,215,235 265,300
	C2	M4 x P0.7 M5 x P0.8	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25 M10 x P1.5	M8 x P1.25 M12 x P1.75	M12 x P1.75 M16 x P1.5
	C3	5.65,6, 8, 11	6.35,8,10,11 12,14, 16, 19	14,16,19,22,24	19,22,24,28,32	22,24,28,32,35,38	38,42,48,55
	C4	26	33, 41	53	66	84	114
	C5	30,40,50,70	50,60,70	70,80,95,110,130	110,130	110,114.3,180	114.3,180,200 230,250
	C6	M3 x P0.5	M4 x P0.7	M6 x 1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5
	C7	46,55,60,76	64,70,80	92,110,130,142	130,150	146,180,190	182,200,220 250,265
	C8	37.5	41,49	61.5	78	98.5	132.5
	C9	139.5	172.5	235	297.5	358.5	446.5

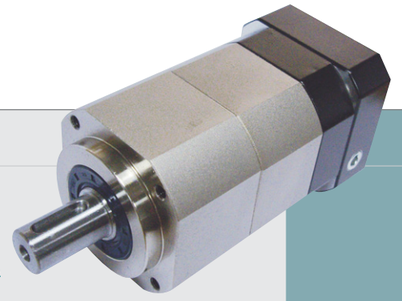
* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

Mass Moments of Inertia (Kg · cm²)

Ratio	#44	#62	#90	#120	#142	#180	#220
15	0.03	0.03	0.14	0.46	2.63	7.3	22.79
20	0.03	0.03	0.14	0.46	2.63	7.3	22.79
25	0.03	0.03	0.14	0.46	2.63	7.1	22.79
30	0.03	0.03	0.14	0.46	2.43	7.1	22.59
35	0.03	0.03	0.14	0.44	2.43	7.1	22.59
40	0.03	0.03	0.14	0.44	2.43	6.92	22.59
50	0.03	0.03	0.14	0.44	2.43	6.92	22.59
60	0.03	0.03	0.14	0.43	2.39	6.72	21.83
70	0.03	0.03	0.14	0.43	2.39	6.72	21.83
80	0.03	0.03	0.14	0.43	2.39	6.72	21.83
90	0.03	0.03	0.14	0.40	2.39	6.72	21.60
100	0.03	0.03	0.14	0.40	2.39	6.72	21.60

Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	15	19	59	165	335	625	1206	2030
		20	16	51	146	300	555	1069	1804
		25	16	48	160	333	618	1189	2010
		30	15	45	151	311	583	1118	1911
		35	15	45	149	309	573	1108	1870
		40	14	43	143	298	553	1070	1824
		50	16	48	160	333	618	1189	2010
		60	15	45	151	311	583	1118	1911
		70	15	45	149	309	573	1108	1870
		80	14	43	143	298	553	1070	1824
		90	13	44	145	278	516	993	1694
		100	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	15~100	3 Times of Rated Output Torque						
Rated Input Speed	rpm	15~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	15~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	15~100	≦4	≦4	≦4	≦4	≦4	≦4	≦4
Backlash P1	arcmin	15~100	≦8	≦8	≦8	≦8	≦8	≦8	≦8
Backlash P2	arcmin	15~100	≦12	≦12	≦12	≦12	≦12	≦12	≦12
Torsional Rigidity	Nm/arcmin	15~100	3	6	14	27	60	140	240
Max. Radial Load	N	15~100	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	15~100	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	15~100	30,000						
Efficiency	%	15~100	≧94%						
Operating Temperature	℃	15~100	-25℃ ~ +90℃						
Lubrication"		15~100	Synthetic gear oil						
Degree of Gearbox Protection		15~100	IP65						
Mounting Position		15~100	Any						
Noise Level	dB	15~100	≦56	≦58	≦60	≦63	≦65	≦67	≦70

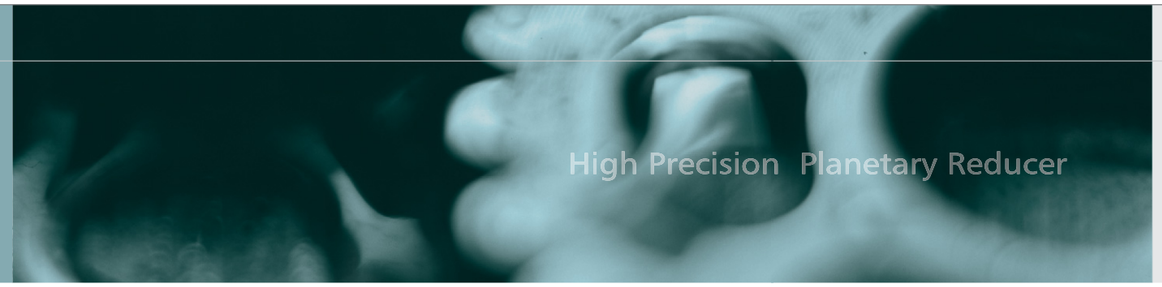
ATG Planetary Reducers

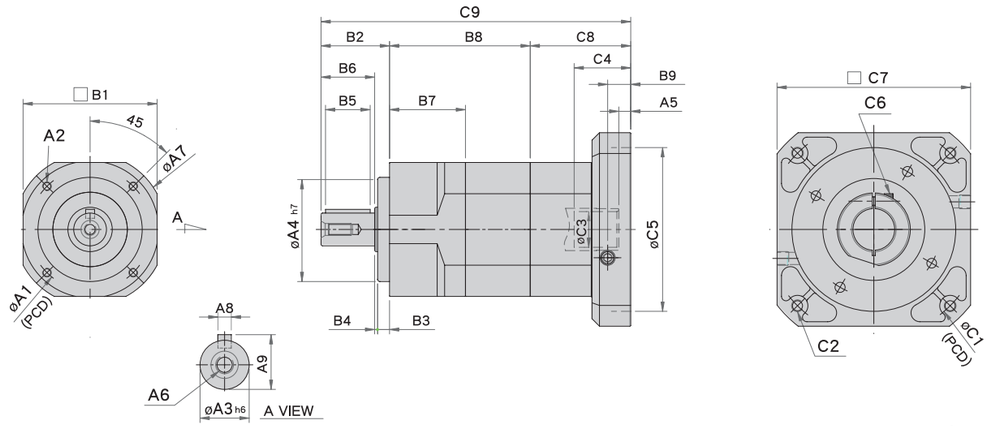


MODEL : KSE-A

Double Reduction

RATIO : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100





unit:mm

	Model / Code	44A	62A	90A	120A	142A	180A	220A
A	A1	44	62	82	110	140	184	218
	A2	M4 x P0.7	M5 P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M12 x P1.75	M16 x P2.0
	A3	13	16	22	32	40	55	75
	A4	35	50	70	90	120	160	180
	A5	5	6	8	9	9.5	11.5	12.5
	A6	M4 x P0.7	M5 x P0.8	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
	A7	50	70	102	134	166	215	252
	A8	5	5	6	10	12	16	20
	A9	15	18	24.5	35	43	59	79.5
B	B1	44	62	90	120	142	180	220
	B2	26	36	48	65	92	106	139
	B3	5	7	10	12	15	20	30
	B4	1	1	2	3	3	4	5
	B5	15	20	30	40	65	70	90
	B6	20	28	36	50	74	82	104
	B7	31.5	38	51	61	70	85	93
	B8	57.5	71.8	92.5	117	136.5	166	186
	B9	8.5	11.5	15.5	19.5	20	23.5	23.5
C	C1	46,60,63,90	70,75,90	90,100,115,145,165	145,165	145,200,215	200,215,235,265,300	235,265,300
	C2	M4 x P0.7 M5 x P0.8	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25 M10 x P1.5	M8 x P1.25 M12 x P1.75	M12 x P1.75 M16 x P2.0	M12 x P1.75 M16 x P2.0
	C3	5.65,6,8,11	6.35,8,10,11 14,16,19	16,19,22,24	19,22,24,28,32	22,24,28 32,35,38	38,42,48,55	42,48,55
	C4	26	33,41	53	66	84	114	117
	C5	30,40,50,70	50,60,70	70,80,95,110,130	110,130	110,114.3,180	114.3,180,200,230,250	200,230,250
	C6	M3 x P0.5	M4 x P0.7	M6 x P1.0	M8 x P1.5	M10 x P1.5	M10 x P1.5	M10 x P1.5
	C7	46,55,60,76	64,70,80	92,110,130,142	130,150	146,180,190	182,200,220,250,265	220,250,265
	C8	37.5	41,49	61.5	78	98.5	132.5	135.5
	C9	121	148.8,156.8	208	260	327	404.5	460.5

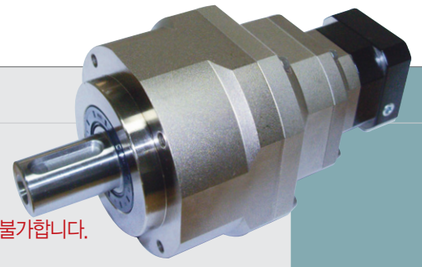
* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

■ Mass Moments of Inertia (Kg · cm²)

Ratio	#44	#62	#90	#120	#142	#180	#220
15	0.03	0.03	0.14	0.46	2.63	7.3	22.79
20	0.03	0.03	0.14	0.46	2.63	7.3	22.79
25	0.03	0.03	0.14	0.46	2.63	7.1	22.79
30	0.03	0.03	0.14	0.46	2.43	7.1	22.59
35	0.03	0.03	0.14	0.44	2.43	7.1	22.59
40	0.03	0.03	0.14	0.44	2.43	6.92	22.59
50	0.03	0.03	0.14	0.44	2.43	6.92	22.59
60	0.03	0.03	0.14	0.43	2.39	6.72	21.83
70	0.03	0.03	0.14	0.43	2.39	6.72	21.83
80	0.03	0.03	0.14	0.43	2.39	6.72	21.83
90	0.03	0.03	0.14	0.40	2.39	6.72	21.60
100	0.03	0.03	0.14	0.40	2.39	6.72	21.60

Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	15	19	59	165	335	625	1206	2030
		20	16	51	146	300	555	1069	1804
		25	16	48	160	333	618	1189	2010
		30	15	45	151	311	583	1118	1911
		35	15	45	149	309	573	1108	1870
		40	14	43	143	298	553	1070	1824
		50	16	48	160	333	618	1189	2010
		60	15	45	151	311	583	1118	1911
		70	15	45	149	309	573	1108	1870
		80	14	43	143	298	553	1070	1824
		90	13	44	145	278	516	993	1694
		100	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	15~100	3 Times of Rated Output Torque						
Rated Input Speed	rpm	15~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	15~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	15~100	≦4	≦4	≦4	≦4	≦4	≦4	≦4
Backlash P1	arcmin	15~100	≦8	≦8	≦8	≦8	≦8	≦8	≦8
Backlash P2	arcmin	15~100	≦12	≦12	≦12	≦12	≦12	≦12	≦12
Torsional Rigidity	Nm/arcmin	15~100	3	6	14	27	60	140	240
Max. Radial Load	N	15~100	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	15~100	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	15~100	30,000						
Efficiency	%	15~100	≧94%						
Operating Temperature	℃	15~100	-25℃ ~ +90℃						
Lubrication"		15~100	Synthetic gear oil						
Degree of Gearbox Protection		15~100	IP65						
Mounting Position		15~100	Any						
Noise Level	dB	15~100	≦56	≦58	≦60	≦63	≦65	≦67	≦70

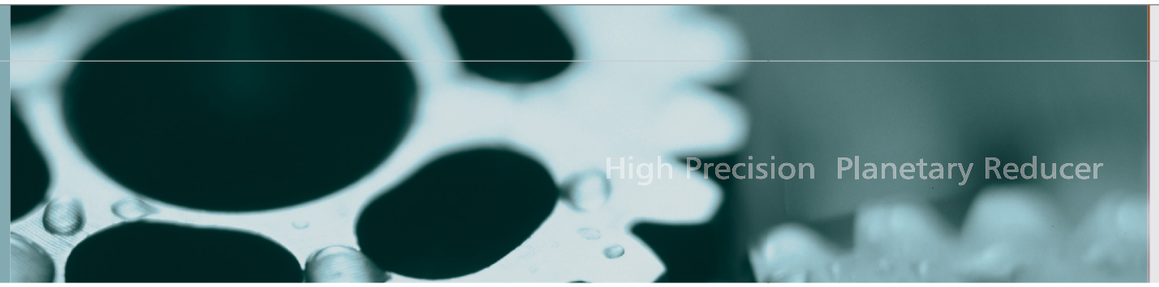
ATG Planetary Reducers

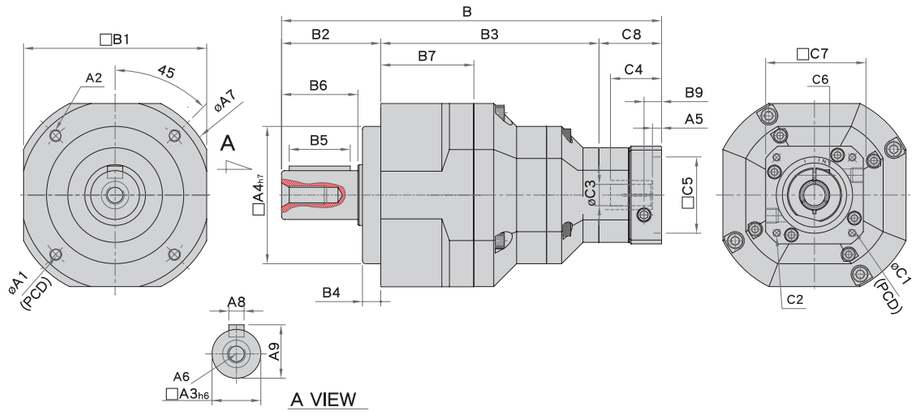


MODEL : KSE

Triple Reduction 특수 제작 주문인 관계로 발주 후에 취소가 불가합니다.

RATIO : 125.150.175.200.250.300.350.
400.450.500.600.700.800.900.1000





unit:mm

	Model / Code	90	120	142	180	220
A	A1	82	110	140	184	218
	A2	M6 x P1.0	M8 x P1.25	M10 x P1.5	M12 x P1.75	M16 x P2.0
	A3	22	32	40	55	75
	A4	70	90	120	160	180
	A5	5	6	8	9	9.5
	A6	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
	A7	102	134	166	215	252
	A8	6	10	12	16	20
	A9	24.5	35	43	59	79.5
B	B1	90	120	142	180	220
	B2	48	65	92	106	139
	B3	111.5	143	175	211.5	244
	B4	2	3	3	4	5
	B5	30	40	65	70	90
	B6	36	50	74	82	104
	B7	51	61	70	85	93
	B8	197	249, 257	328.5	395.5	481.5
	B9	8.5	11.5	15.5	19.5	20
C	C1	46, 60, 63, 90	70, 75, 90	90, 100, 115, 145, 165	145, 165	145, 200, 215
	C2	M4 x P0.7	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25	M8 x P1.25 M12 x P1.75
	C3	5.65, 6, 8, 11	6.35, 8, 11, 14, 16, 19	14, 16, 19, 22, 24	19. 22.24.28.32	22, 24, 28, 32, 35, 38
	C4	26	33, 41	53	66	84
	C5	30, 40, 50, 70	50, 60, 70	70, 80, 95, 110, 130	110, 130	110, 114.3, 180
	C6	M4 x P0.7	M4 x P0.7	M6 x P1.0	M8 x P1.25	M10 x P1.5
	C7	46, 55, 60, 76	64, 70, 80	92, 110, 130, 142	130, 150	146, 180, 190
	C8	37.5	41, 49	61.5	78	98.5

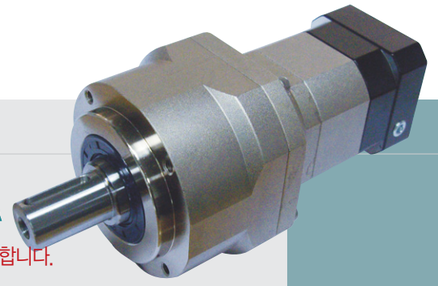
* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

■ Mass Moments of Inertia (Kg · cm²)

Ratio	#62	#90	#120	#142	#180	#220
125	0.01	0.01	0.04	0.71	1.42	3.29
150	0.01	0.01	0.04	0.51	0.92	2.15
175	0.01	0.01	0.04	0.40	0.83	1.26
200	0.01	0.01	0.04	0.21	0.65	0.98
250	0.01	0.01	0.04	0.11	0.52	0.82
300	0.01	0.01	0.04	0.09	0.21	0.82
350	0.01	0.01	0.04	0.09	0.21	0.82
400	0.01	0.01	0.04	0.09	0.21	0.82
450	0.01	0.01	0.04	0.09	0.21	0.51
500	0.01	0.01	0.04	0.08	0.12	0.51
600	0.01	0.01	0.04	0.08	0.12	0.25
700	0.01	0.01	0.04	0.08	0.12	0.25
800	0.01	0.01	0.04	0.08	0.12	0.25
900	0.01	0.01	0.04	0.08	0.12	0.25
1000	0.01	0.01	0.04	0.08	0.12	0.25

Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	125	16	48	160	333	618	1189	2010
		150	19	59	165	335	625	1206	2030
		175	15	45	149	309	573	1108	1870
		200	16	51	146	300	555	1069	1804
		250	16	48	160	333	618	1189	2010
		300	15	45	151	311	583	1118	1911
		350	15	45	149	309	573	1108	1870
		400	14	43	143	298	553	1070	1824
		450	13	44	145	278	516	993	1694
		500	16	48	160	333	618	1189	2010
		600	15	45	151	311	583	1118	1911
		700	15	45	149	309	573	1108	1870
		800	14	43	143	298	553	1070	1824
		900	13	44	145	278	516	993	1694
		1000	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	125~1000	3 Times of Rated Output Torque						
Rated Input Speed	rpm	125~1000	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	125~1000	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	125~1000	≦5	≦5	≦5	≦5	≦5	≦5	≦5
Backlash P1	arcmin	125~1000	≦10	≦10	≦10	≦10	≦10	≦10	≦10
Backlash P2	arcmin	125~1000	≦15	≦15	≦15	≦15	≦15	≦15	≦15
Torsional Rigidity	Nm/arcmin	125~1000	3	6	14	27	60	140	240
Max. Radial Load	N	125~1000	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	125~1000	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	125~1000	30,000						
Efficiency	%	125~1000	≧90%						
Operating Temperature	℃	125~1000	-25℃ ~ +90℃						
Lubrication		125~1000	Synthetic gear oil						
Degree of Gearbox Protection		125~1000	IP65						
Mounting Position		125~1000	Any						
Noise Level	dB	125~1000	≦56	≦58	≦60	≦63	≦65	≦67	≦70

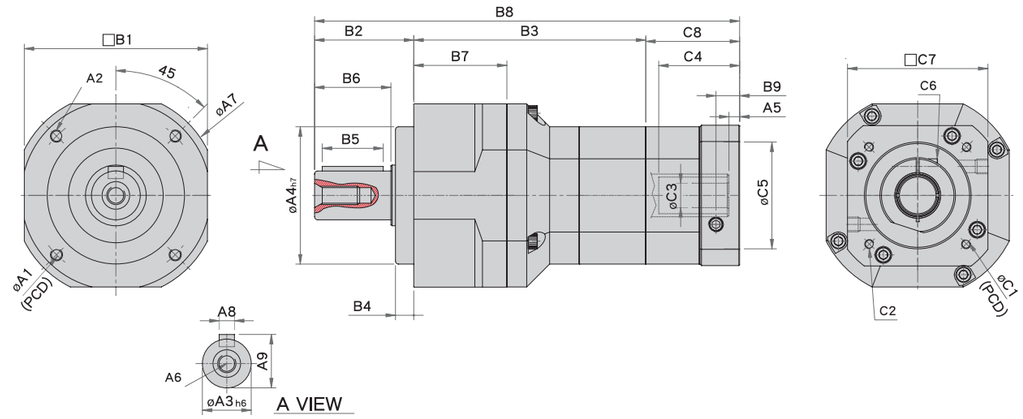
ATG Planetary Reducers



MODEL : KSE-A

Triple Reduction 특수 제작 주문인 관계로 발주 후에 취소가 불가합니다.

RATIO : 125.150.175.200.250.300.350.
400.450.500.600.700.800.900.1000



unit:mm

	Model / Code	62A	90A	120A	142A	180A	220A
A	A1	62	82	110	140	184	218
	A2	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5	M12 x P1.75	M16 x P2.0
	A3	16	22	32	40	55	75
	A4	50	70	90	120	160	180
	A5	5	6	8	9	9.5	11.5
	A6	M5 x P0.8	M8 x P1.25	M12 x P1.75	M16 x P2.0	M20 x P2.5	M20 x P2.5
	A7	70	102	134	166	215	252
	A8	5	6	10	12	16	20
	A9	18	24.5	35	43	59	79.5
B	B1	62	90	120	142	180	220
	B2	36	48	65	92	106	139
	B3	92	117.5	152	183.5	220.5	256
	B4	1	2	3	3	4	5
	B5	20	30	40	65	70	90
	B6	28	36	50	74	82	104
	B7	38	51	61	70	85	93
	B8	165.5	206.3, 214.3	278.5	353.5	425	527
	B9	8.5	11.5	15.5	19.5	20	23.5
C	C1	46, 60, 63, 90	70, 75, 90	90, 100, 115, 145, 165	145, 165	145, 200, 215	200, 215, 235, 265, 300
	C2	M4 x P0.7 M5 x P0.8	M4 x P0.7 M5 x P0.8 M6 x P1.0	M6 x P1.0 M8 x P1.25 M10 x P1.5	M6 x P1.0 M8 x P1.25	M8 x P1.25 M12 x P1.75	M12 x P1.75 M16 x P2.0
	C3	5.65, 6, 8, 11	6.35, 8, 11, 14, 16, 19	14, 16, 19, 22, 24	19, 22, 24, 28, 32	22, 24, 28, 32, 35, 38	38, 42, 48, 55
	C4	26, 33	33, 41	53	66	84	114, 117
	C5	30, 40, 50, 70	50, 60, 70	70, 80, 95, 110, 130	110, 130	110, 114.3, 180	114.3, 180, 200, 230, 250
	C6	M3 x P0.5	M4 x P0.7	M6 x P1.0	M8 x P1.25	M10 x P1.5	M10 x P1.5
	C7	46, 55, 60, 76	64, 70, 80	92, 110, 130, 142	130, 150	146, 180, 190	182, 200, 220, 250, 265
	C8	37.5	41, 49	61.5	78	98.5	132.5

* A5, B10, C1~C7은 적용 모터에 따라 달라질 수 있습니다.

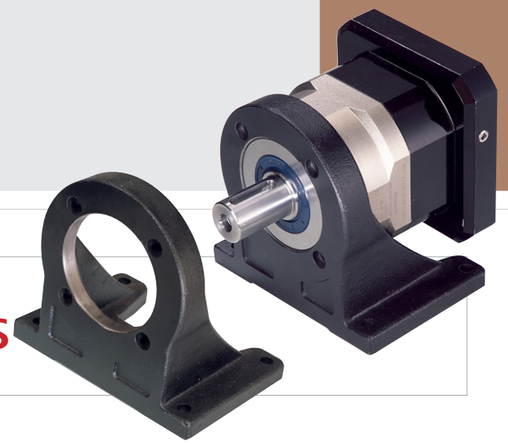
■ Mass Moments of Inertia (Kg · cm²)

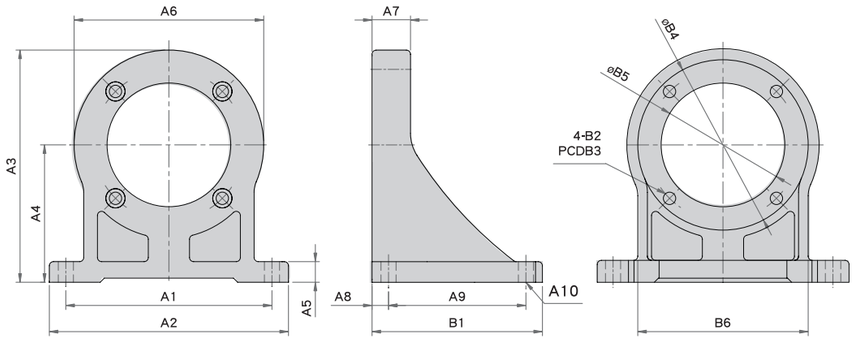
Ratio	#62	#90	#120	#142	#180	#220
125	0.01	0.01	0.04	0.71	1.42	3.29
150	0.01	0.01	0.04	0.51	0.92	2.15
175	0.01	0.01	0.04	0.40	0.83	1.26
200	0.01	0.01	0.04	0.21	0.65	0.98
250	0.01	0.01	0.04	0.11	0.52	0.82
300	0.01	0.01	0.04	0.09	0.21	0.82
350	0.01	0.01	0.04	0.09	0.21	0.82
400	0.01	0.01	0.04	0.09	0.21	0.82
450	0.01	0.01	0.04	0.09	0.21	0.51
500	0.01	0.01	0.04	0.08	0.12	0.51
600	0.01	0.01	0.04	0.08	0.12	0.25
700	0.01	0.01	0.04	0.08	0.12	0.25
800	0.01	0.01	0.04	0.08	0.12	0.25
900	0.01	0.01	0.04	0.08	0.12	0.25
1000	0.01	0.01	0.04	0.08	0.12	0.25

Model No.	Unit	Ratio	#44	#62	#90	#120	#142	#180	#220
Rated Output Torque	Nm	125	16	48	160	333	618	1189	2010
		150	19	59	165	335	625	1206	2030
		175	15	45	149	309	573	1108	1870
		200	16	51	146	300	555	1069	1804
		250	16	48	160	333	618	1189	2010
		300	15	45	151	311	583	1118	1911
		350	15	45	149	309	573	1108	1870
		400	14	43	143	298	553	1070	1824
		450	13	44	145	278	516	993	1694
		500	16	48	160	333	618	1189	2010
		600	15	45	151	311	583	1118	1911
		700	15	45	149	309	573	1108	1870
		800	14	43	143	298	553	1070	1824
		900	13	44	145	278	516	993	1694
		1000	14	43	141	294	549	1059	1779
Max. Output Torque	Nm	125~1000	3 Times of Rated Output Torque						
Rated Input Speed	rpm	125~1000	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed	rpm	125~1000	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash P0	arcmin	125~1000	≦5	≦5	≦5	≦5	≦5	≦5	≦5
Backlash P1	arcmin	125~1000	≦10	≦10	≦10	≦10	≦10	≦10	≦10
Backlash P2	arcmin	125~1000	≦15	≦15	≦15	≦15	≦15	≦15	≦15
Torsional Rigidity	Nm/arcmin	125~1000	3	6	14	27	60	140	240
Max. Radial Load	N	125~1000	380	1,180	3,200	6,800	9,300	15,600	51,000
Max. Axial Load	N	125~1000	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	hr	125~1000	30,000						
Efficiency	%	125~1000	≧90%						
Operating Temperature	℃	125~1000	-25℃ ~ +90℃						
Lubrication		125~1000	Synthetic gear oil						
Degree of Gearbox Protection		125~1000	IP65						
Mounting Position		125~1000	Any						
Noise Level	dB	125~1000	≦56	≦58	≦60	≦63	≦65	≦67	≦70

ACCESSORIES

Foot Type Base Kits



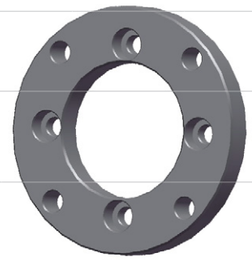


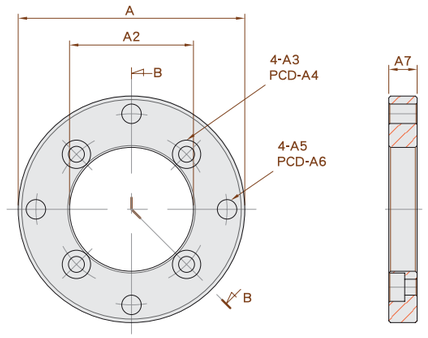
unit:mm

	Model / Code	44	62	90	120	142	180	220
A	A1	70	90	110	150	190	240	280
	A2	88	108	130	176	220	276	330
	A3	75.5	95.5	127	170	207.5	274	334
	A4	45	55	75	100	120	160	200
	A5	8	9	11	16	19	24	30
	A6	60	81	104	140	175	228	268
	A7	13	16	21	28	35	45	60
	A8	10	10	11	14	16	19	26
	A9	40	55	75	100	120	160	200
	A10	4-Ø7	4-Ø7	4-Ø9	4-Ø11	4-Ø13	4-Ø17	4-Ø21
B	B1	60	70	97	128	152	198	252
	B2	Ø4.5	Ø5.5	Ø6.8	Ø9	Ø11	Ø13	Ø17
	B3	44	62	82	110	140	184	218
	B4	50	70	92	124	155	205	242
	B5	35	50	70	90	120	160	180
	B6	50	70	90	125	156	200	230

※ 중량오차 범위 3%

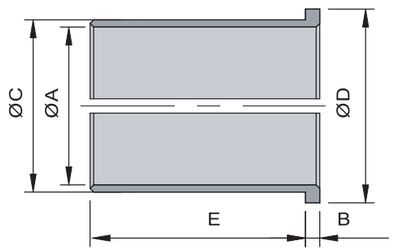
Connecting Plate





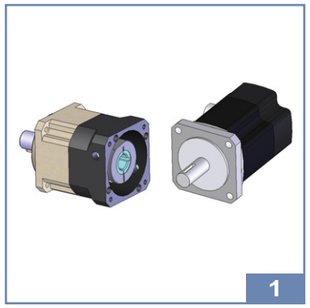
Model / Code	44	62	90	120	142	180	220
A1	64	88	123	158	188	238	298
A2	35	50	70	90	120	160	180
A3	4.5	5.5	6.8	9	11	13	17
A4	44	62	82	110	140	184	218
A5	5.5	6.8	9	11	13	15	17
A6	54	75	106	140	165	210	260
A7	8	9	11	14	17	22	30

Bushing



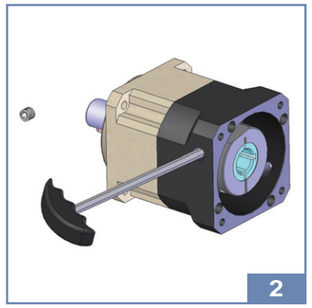
Model/Code	44	62	90	120	142
A	5.63, 6	8, 11	14, 16, 19, 22	19, 22, 24	22, 24, 28
B	1	1	1	1	2
C	11	14	19, 24, 24, 24	28	35
D	12.8	16	21.5, 27, 27, 27	31	37.5
E	13	16	25.5, 30, 30, 30	35	40

Planetary Gearbox and Motor Mounting Instructions



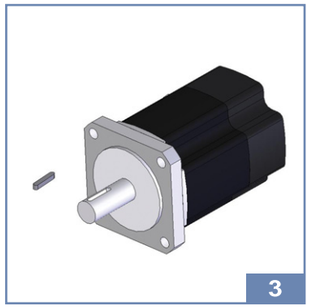
모터와 기어박스의 사이즈를 확인 후 마운팅 표면을 깨끗이 닦아 주세요.

Confirm the motor and gearbox size . Clean up the mounting surface.



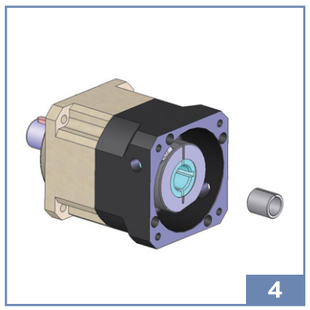
아답터 플레이트의 스크류 플러그를 제거 하신 후 컬러의 볼트를 회전 시켜 주세요.

Remove the plug on the adapter plate. Rotate the set collar till the bolt is line up.



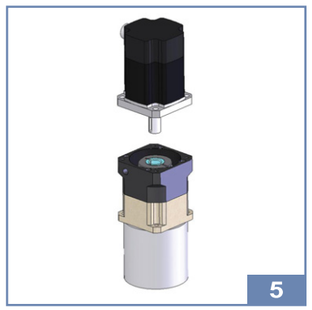
키 타잎이 아닌 감속기일 때는 모터의 키를 제거 합니다.

Remove the motor key if the diameter of motor shaft under ϕ32.



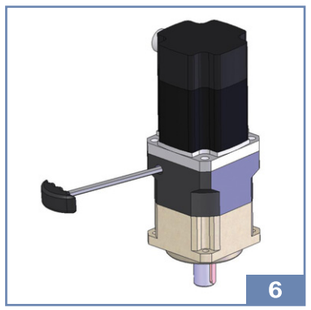
모터의 사이즈를 체크하시고 필요 시에는 부싱을 삽입하세요.

Check motor shaft size and insert bushing into input bore if necessary.



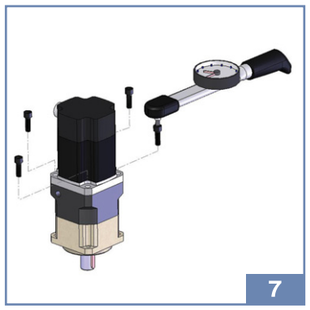
모터와 기어 박스를 연결합니다.

Put the motor into the gearbox vertically.



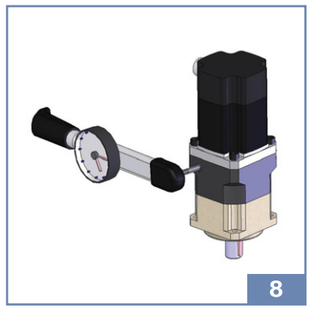
연결된 감속기의 스크류 볼트를 가볍게 조여 주세요.

Adapted the motor. Tighten the set collar bolt with light torque.



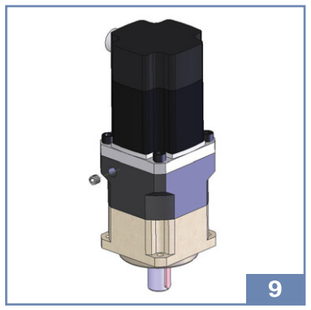
토르크 렌치를 사용하여 마운팅 볼트를 조여 주세요.

Tighten the mounting bolt in 1~4 order with torque wrench.



토르크 렌치를 사용하여 컬러 볼트를 조여 주세요.

Tighten the set collar bolt with torque wrench.

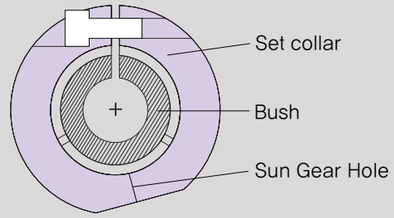


스크류 플러그를 조여 주세요.

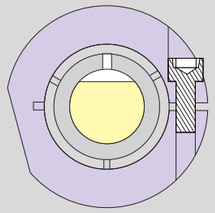
Tighten back the screw plug.

올바른 Bush 체결방법

높은 체결력을 얻기 위해서는
조립시 부싱 & 선기어 & 셋컬러 각각의 Slot 위치를
일렬로 정렬하십시오.



모터 출력축이 원형이 아닌 Flat shaft일 경우
모터 출력축의 평탄면과 감속기 Set collar의 볼트가
아래 그림과 같이 수직이 될 수 있도록 취부하십시오.



전국 대리점 분포도

A/S

● A/S 기간

당사가 사양서에 규정한 정상운전 및 정상적인 조립상태와 윤활상태로 사용한 정밀 감속기에 대해서 실 가동 시간 10000시간, 혹은 구입 후 1년을 A/S 기한으로 합니다.

● A/S 범위

A/S 기간 내에 제조상의 문제점으로 발생한 결함에 대해서는 해당 제품의 수리 또는 교환을 무상으로 합니다.
단 아래 사항의 경우 보증 대상에서 제외됩니다.

* 고객의 부적절한 사용 및 취급
* 당사 외 임의로 분해 및 개조를 한 경우
* 고장 원인이 해당품 이외의 원인으로 인한 경우
* 기타 천재지변등에 의한 경우

◆ 해당 제품의 고장에 의해 발생하는 기타 손실, 기계파손으로 의한 기회의 손실 및 조립공수, 비용 등에 대해서는 당사의 보증 범위에서 제외하고 있습니다.