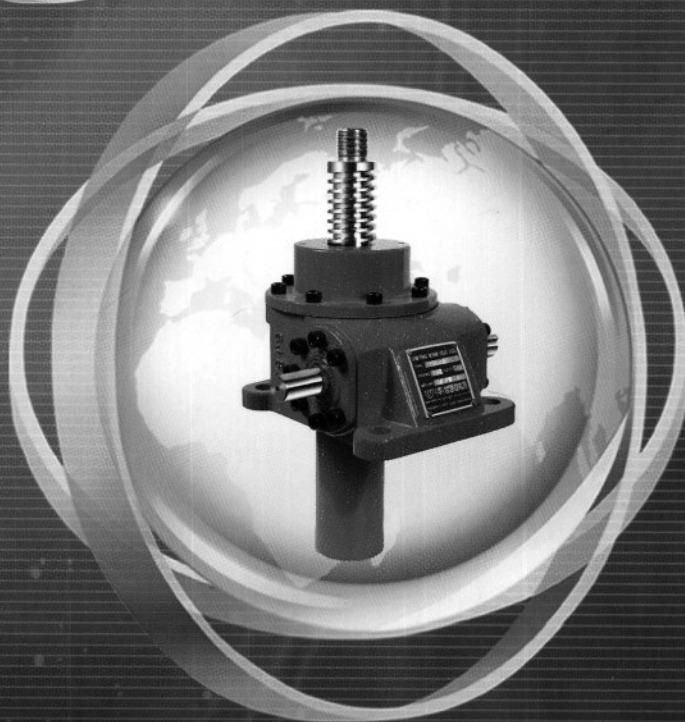
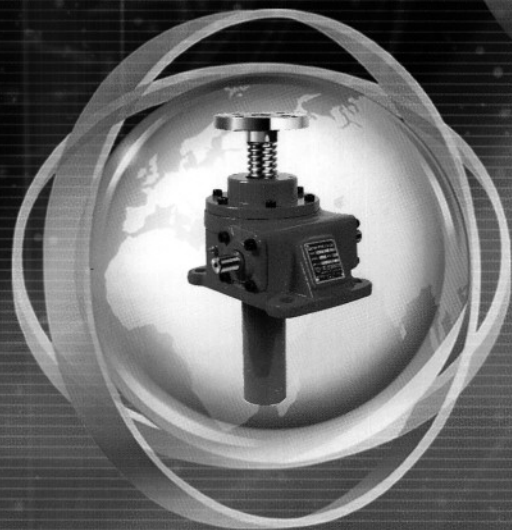


# 11 POWER JACK

- SCREW JACK
- BALL JACK





강력하고

# SCREW JACK



# 부드럽다.

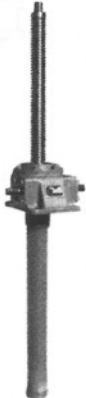
## 1 ~ 100 TON Screw Jack

역전방지기능을 가진 표준잭  
Standards Jack featured with Self-Locking system

### ■ 선택기능 ■

- |   |  |
|---|--|
| 1) 높고낮은 감속비 (High & Low Ratio)            | 5) 모타/기어모타부착 (Motor/Geared Motor Attachment) |
| 2) 핸드휠 (Hand Wheel)                       | 6) 축보호 카바 부착 (Dustproof Bellows Attachment)  |
| 3) 회전방지 키 부착 (Prevent Key Attachment)     | 7) 스크류너트 부착 (Screw Nut Attachment)           |
| 4) 트러니언 베이스 부착 (Trunnion Base Attachment) |  |

**축승강형**  
Traveling Shaft Type



상방향형 Upright Type



하방향형 Inverted Type

**NUT승강형**  
Traveling Nut Type



상방향형 Upright Type



하방향형 Inverted Type

SCREW JACKS



# Products Code System

**SJ66**

잭 형번  
Jack Type

**H**

웜 감속비  
Worm Ratio

**U**

**K**

나사축 사양  
Screw Shaft

**600**

행정  
Stroke

**J**

**C**

축보호 카바  
Dustproof Bellows

형번(용량 TONf) Type (Capa. tonf)	H	L
<b>SCREW JACK</b>		
<b>SJ32</b> (1)	5	24
<b>SJ44</b> (2.5)	6	24
<b>SJ56</b> (5)	6	24
<b>SJ66</b> (10)	8	24
<b>SJ66S</b> (15)	8	24
<b>SJ73</b> (20)	8	24
<b>SJ95</b> (30)	10 <sup>2</sup> / <sub>3</sub>	32
<b>SJ135</b> (50)	10 <sup>2</sup> / <sub>3</sub>	32
<b>SJ155</b> (75)	10 <sup>2</sup> / <sub>3</sub>	38
<b>SJ190</b> (100)	12 <sup>2</sup> / <sub>3</sub>	36

**N**

회전방지키 없음  
W/O Prevent Key

**K**

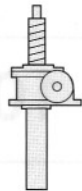
회전방지키 부착  
With prevent Key

**T**

너트 승강형  
Traveling Nut Type

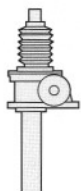
표준품  
STANDARD PRODUCT  
100,200,300,400,500,  
600,800

**N**



축보호카바 없음  
W/O Bellows

**J**



축보호카바 부착  
With Bellows

스크류 너트 · 너트 방향  
Screw End Fitting

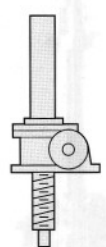
외형  
Profile

**U**




상방향형  
Upright

**I**




하방향형  
Inverted

**S**




스크류 너트 없음  
NO Fitting

**P**



플레인 너트 부착

**C**



크레비스 부착  
With Clevis

**F**



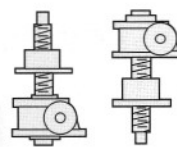
플랜지 너트 부착  
With Flange

**U**



너트 상방향형

**D**



너트 하방향형  
Nut Inverted



# How To Choose Right Screw Jack

**책의 선정** 작골하중이나 황하중으로 인하여 책의 선정범위가 제한되는 경우가 있습니다.  
해당항목의 허용조건을 확인하여 주십시오.

## 사용자 자료

기기장치에 필요한 책 1대당 의 작동하중을 기입하십시오.

㉔ 승강시 하중 : TONf

기기 장치에 필요한 승강속도를 기입하십시오.

㉕ 승강속도 : mm/min

아래표의 ① 하중용량을 참조하여 필요하중 조건에 적합한 책 형번을 임의로 선정하십시오.

책 형번 :

### 계산: 1

아래표의 ② 속도계수로부터 입력축 회전수를 계산하십시오.

$$\text{입력축 회전수} = \frac{\text{자료 ㉔}}{\text{자료 ㉕}}$$

㉖ 입력축 회전수 : RPM

### 계산: 2

아래표의 ③ 토크계수, ④ 입력축 부하 토크로부터 소요입력축 토크를 계산하십시오.

$$\text{소요입력축 토크} = \text{자료 ㉖} \times \text{자료 ㉔} + \text{자료 ㉗}$$

㉗ 소요입력축 토크 : kgf-m

### 계산: 3

이제까지의 계산 결과로부터 소요동력을 계산하십시오.

$$\text{소요동력} = \frac{\text{자료 ㉖} \times \text{㉗}}{974}$$

㉘ 소요동력 : kw

### 검토:

아래표의 ⑤ 최대동력을 참조하여 ㉘ 소요동력이 최대동력을 초과하지 않는지를 확인하십시오. 초과시에는 다음 형번의 형번을 임의로 선정하십시오.

다시 최대 동력이 초월할 시에는 책 형번을 다음 형번의 것으로 하여 다시 계산하십시오.

## User Data

• Enter the necessary operational load per jack:

(a) Lifting Load : ton

• Enter required lifting speed.

(b) Lifting Speed : mm/min

• Enter an appropriate jack type from Table ① below for required load in (a).

Jack Type:

### Calculation 1:

• Computer Input Shaft RPM using (b) and speed coefficient from Table ②.  
Input Shaft RPM = Data from (b) ÷ Data from Table ②

(c) Input Shaft RPM : RPM

### Calculation 2:

• Using torque coefficient from Table 3 and Input Shaft Load Torque from Table ④,  
Compute input shaft torque  
Input shaft torque = data from Table ③ × data from (a) + data from Table ④.

(d) Necessary Input Shaft Torque : kgf-m

### Calculation 3:

$$\text{Required power} = (\text{data from (c)} \times \text{data from (d)}) \div 974$$

(e) Required Power : kw

### Note:

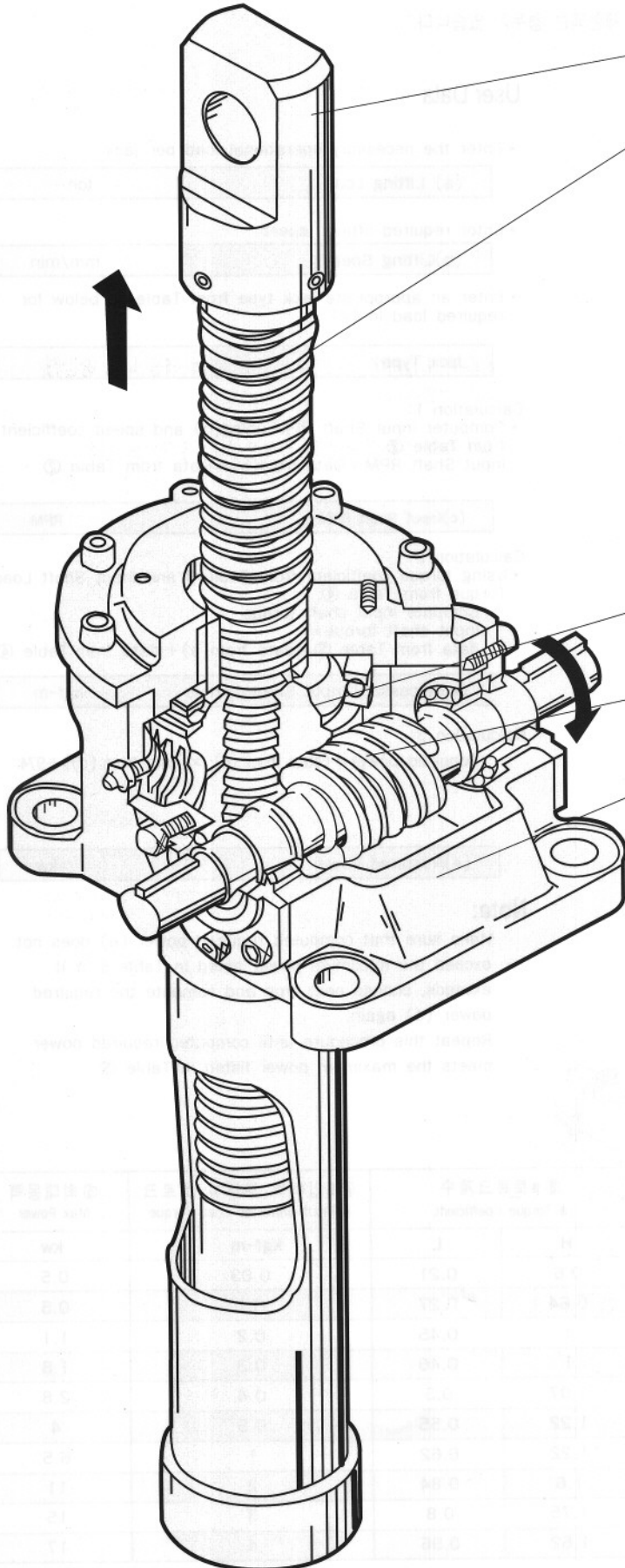
Make sure that computed required power (e) does not exceed the maximum power listed in Table 5. If it exceeds, choose next type and compute the required power (e) again.

Repeat this procedure until computed required power meets the maximum power listed in Table ⑤.

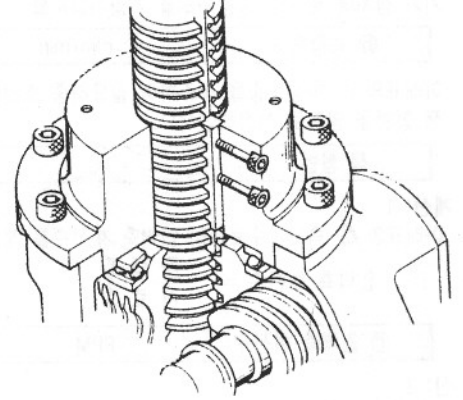
## 제조업체 자료 (Manufacturer's Data)

형 번 (Type)	① 하중용량 Load Capacity	② C속도계수 c Speed Coefficient		③ a토크계수 a Torque Coefficient		④ b입력축 무부하 토크 b Input Shaft No Load Torque	⑤ 최대동력 Max Power
	TONf	H	L	H	L	kgf-m	kw
SJ32	1	0.8	0.17	0.6	0.21	0.03	0.5
SJ44	2.5	0.83	0.21	0.64	0.27	0.1	0.5
SJ56	5	1.33	0.33	1	0.45	0.2	1.1
SJ66	10	1.25	0.42	1	0.46	0.3	1.8
SJ66S	15	1.25	0.42	1.07	0.5	0.4	2.8
SJ73	20	1.5	0.5	1.22	0.55	0.5	4
SJ95	30	1.5	0.5	1.22	0.62	1	6.5
SJ135	50	1.5	0.5	1.6	0.84	2	11
SJ155	75	1.5	0.42	1.75	0.8	3	15
SJ190	100	1.58	0.56	1.62	0.96	4	17

# Feature of Screw Jack



- 스크류너트는 선택하여 부착 가능합니다.  
Screw Nut is optional.
- 스크류 축은 고급탄소강제이고 회전방지 키를 부착하여 사용 가능합니다.  
Screw shaft is made of highly carbonated steel and prevent key can be attached.



- 웜휠 (Worm wheel)은 회전유지, 볼 베어링을 사용합니다.  
Worm wheel used ball bearing for maintaining smooth turning.
- 웜은 고정도의 크롬 몰리브덴 강제입니다.  
Worm is made of high precision chrome Molybdenum steel.
- 잭 케이스는 경량으로 고내구성의 덕타일(Ductile) 주철제입니다.  
Dustproof bellows is light and is made of Ductile cast iron.

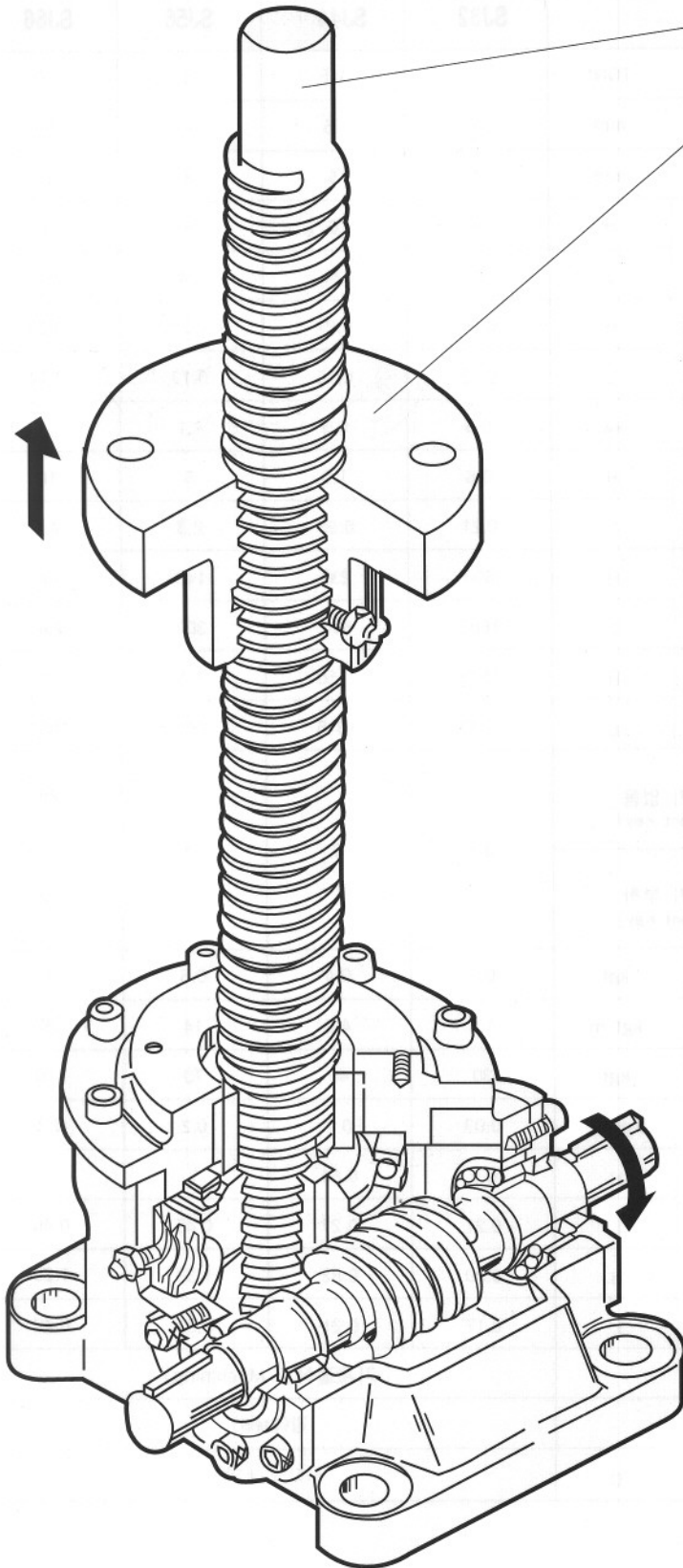
잭 전문제조업체가 아니고는 할 수 없는 경험과 기술을 활용한 표준형의 스크류잭 입니다.

1. 고정도의 웜기어와 사다리꼴 나사축으로 구성되어 있고 행정(Stroke) 내의 어떤 위치에도 역전방지 (Self-Locking)가 가능합니다.
2. 감속기구부는 그리스 윤활을 표준으로 하고 부드러운 동작으로 장수명을 실현시킵니다.
3. 나사축을 보호하는 축보호 카바 (Bellows Boot), 수동조작용 핸들(Hand Wheel), 트러니언 베이스(Trunnion Base) 등 풍부한 선택기능이 있습니다.

Accumulated experience and technology only makes it possible to manufacture high precision standard screw jacks.

1. It is composed of high precision worm gear and trapezoidal screw shaft. Self-locking is possible at any point of stroke.
2. Reducer part is greased and smooth operation makes a long-life possible.
3. To protect screw shaft, numerous options like Bellows boot, hand wheel and Trunnion base are optional.

# Feature of Traveling Nut Jack



• 나사축 단지지에 편리한 원통형 부분  
Convenient round shape for screw axle support.

• 너트  
Nut

나사축이 회전하여 너트가 이동하는 형의 잭을 너트 승강형 잭이라 부릅니다.

1. 나사축의 승하강 공간을 필요로 하지 않으므로 행정 (Stroke)을 끝까지 유효하게 사용할 수 있고 특히 공간이 제한되어 있는 경우에 편리합니다.
2. 긴 행정(Stroke)의 경우에도 안정된 승하강을 가능하게 하기 때문에 나사축 선단지지가 쉽고 나사축 선단에 축수용의 원통형 마무리 부분으로 설계되어 있습니다. 나사축 선단지지에 통상 사용되는 래디얼 베어링 대신 트러스트 베어링을 채용하여 축단 형상을 일부 변형하는 것으로 긴 행정(Stroke)의 경우에도 좌굴을 피할 수 있습니다.

The jack with traveling nut and turning screw shaft is called Traveling Nut type.

1. Since it is not necessary for the lifting room of screw shaft, one can effectively use the stroke to the end point and it is convenient for use in limited space.
2. Since a steady movement is possible even for a long stroke, it is easy to support screw shaft. Shaft end is finished in round.  
Instead of using commonly using radial bearing, a trust bearing is adopted in screw shaft support. This design is a partially modified for reducing the side force even in a long stroke

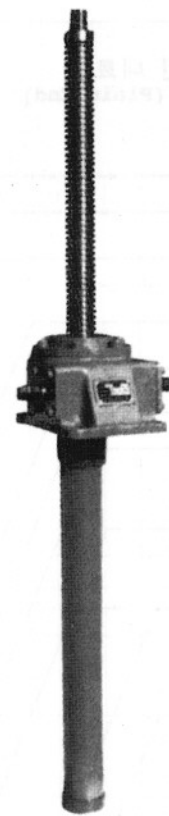


# Standard Specifications

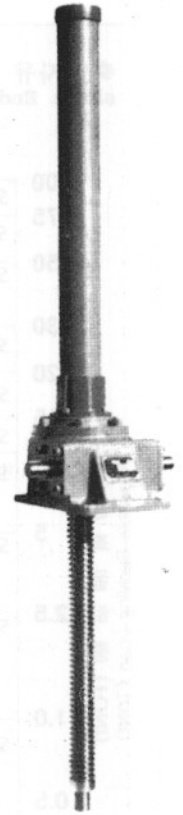
형 번 (Type)		SJ32	SJ44	SJ56	SJ66
기본용량 ( Capacity)	TONf	1	2.5	5	10
나사축경 (Lifting Screw Diameter)	mm	20	25	40	50
나사축 리이드 (Screw Shaft Lead)	mm	4	5	8	10
웜(Worm) 감속비 (Worm Gear Ratio)	H	5	6	6	8
	L	24	24	24	24
효율 (Efficiency)	H	0.21	0.21	0.21	0.20
	L	0.13	0.15	0.12	0.14
적 1대당 최대허용동력 (Max. Allowable Power)	kw	0.5	0.5	1.1	1.8
기본 용량에 대한 소요입력 토크 kgf-m (Required Input Torque)	H	0.6	1.6	5	10
	L	0.21	0.55	2.3	4.6
기본 용량에 대한 최대입력 회전수 RPM (Max. Input RPM)	H	600	230	140	140
	L	1665	600	300	290
허용 최대입력 회전수 RPM (Allowable Max. Input RPM)	H	1575	1150	915	870
	L	1730	1315	950	1055
중량 (Weight) kgf 행정 (Stroke) 100mm의 경우 (Stroke 100mm)	회전방지기 없음 (W/O Prevent Key)	3.6	9	15	25
	회전방지기 부착 (With Prevent Key)				32
그리스 (Grease) 봉입량 (Grease Charging Quantity)	kgf	0.1	0.4	0.6	1
회전방지기 토크 (Prevent Key Torque)	kgf-m	1.5	4.5	14	36
입력축 허용 Overhang 하중 (Input shaft Overhang Load)	kgf	30	45	70	120
입력축 무부하 토크 (Input Shaft No Load Torque) <sup>b</sup>	kgf-m	0.03	0.1	0.2	0.3
토크 계수 (Torque Coefficient) <sup>a</sup>	H	0.6	0.64	1	1
	L	0.21	0.27	0.45	0.46
속도계수 (Speed Coefficient) <sup>c</sup> 입력축 1회전당 행정의 진행 mm (Stroke/turn mm)	H	0.80	0.83	1.33	1.25
	L	0.17	0.21	0.33	0.42
나사축성형 (Lifting Screw Forming)	기계절삭 ( Machining)				
나사축 카바 재질 (Cover Material)	강(Steel)				
사용온도 범위 (Operational Temperature)	°C	-15 ~ +100			

· CASE에 압축지지 구조를 기준으로 설정.

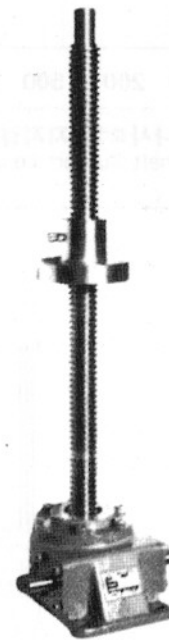
SJ66S	SJ73	SJ95	SJ135	SJ155	SJ190
15	20	30	50	75	100
55	63	85	118	132	150
10	12	16	16	16	20
8	8	10 <sup>2/3</sup>	10 <sup>2/3</sup>	10 <sup>2/3</sup>	12 <sup>2/3</sup>
24	24	32	32	38	36
0.18	0.18	0.18	0.13	0.13	0.13
0.14	0.14	0.12	0.09	0.08	0.08
2.8	4	6.5	11	15	17
16.1	26.5	40	89	137	180
7.5	11.5	19	45	62	105
140	135	130	90	75	75
290	300	255	190	160	125
870	810	795	535	530	510
1055	995	825	555	540	400
28	44	74	190	290	560
35	53	101	205	350	565
1.5	2	3	4	6	8
60	92	185	440	745	1120
120	120	220	250	250	300
0.4	0.5	1	2	3	4
1.07	1.22	1.22	1.6	1.75	1.62
0.5	0.55	0.62	0.84	0.8	0.96
1.25	1.5	1.5	1.5	1.5	1.58
0.42	0.5	0.5	0.5	0.42	0.56
기계절삭 (Machining)					
강(Steel)					
-15~ + 100					



상방향형  
Upright Type



하방향형  
Inverted Type



상방향형  
Upright Type



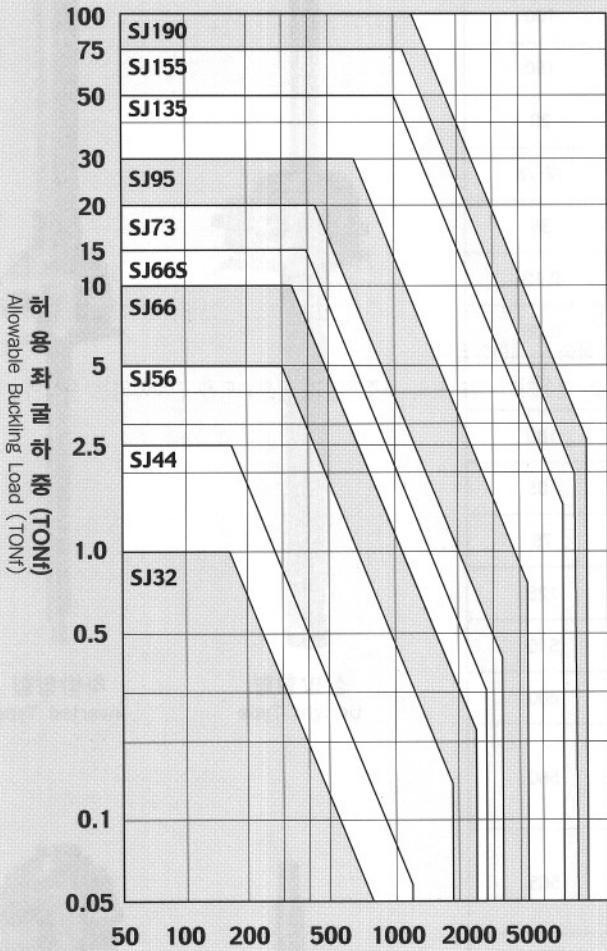
하방향형  
Inverted Type

SCREW JACKS

# Allowable Buckling Load

축단자유 (플레인 너트)  
shaft End Free (Plain End)

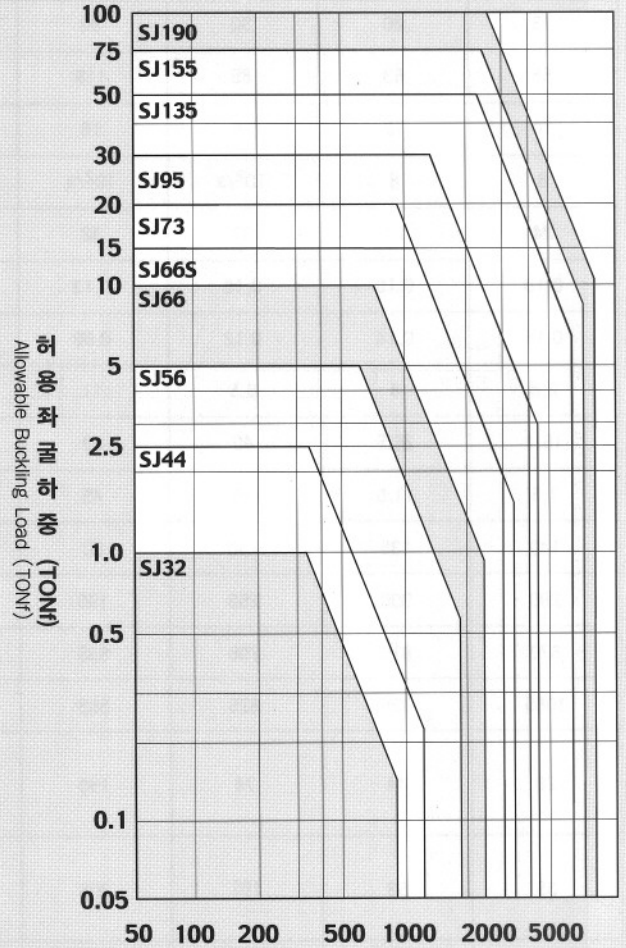
$n = 1/4$



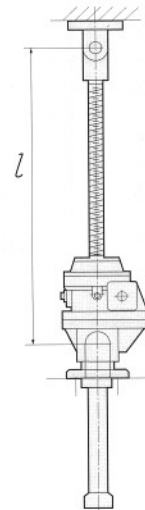
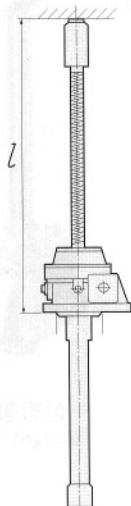
나사축의 지지길이 (mm)  
Shaft Support Length (mm)

축단지지 (크레비스)  
shaft End Support (Clevis)

$n = 1$

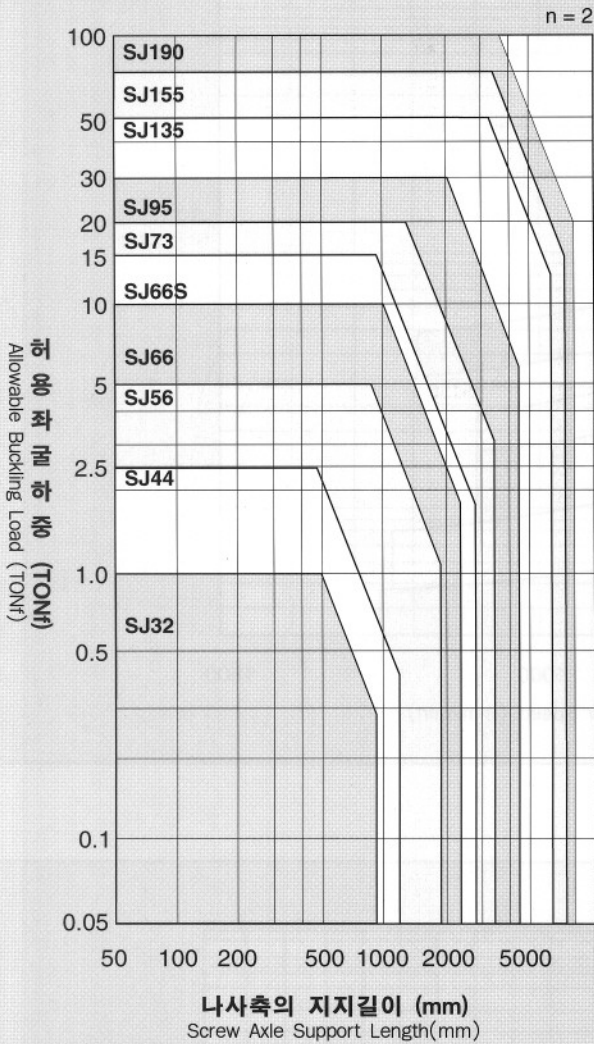


나사축의 지지길이 (mm)  
Shaft Support Length (mm)





축단지지 (플렌지, 크레비스)  
shaft End Support (Flange, Clevis)



그래프를 사용한 간편한 모델 선정방법

[1] 좌굴하중

잭을 압축하중으로 하는 경우, 행정 (STROKE)이 긴 경우에도 좌굴 현상이 일어납니다.

좌굴하중은 축단의 지지방법에 따라 다르므로 각각의 그래프를 참조하여 하중(중축)과 축길이 (횡축)의 교점으로 부터 그 이상의 형식번호를 선택하여 주십시오.

※잭을 인장하중으로 사용하는 경우에는 좌굴의 염려가 없습니다.

[2] 승강하중/승강속도관계 그래프

기본사양이 있는대로 잭 한대당의 최대 허용동력이 결정됩니다.

최대 동력으로 움직이는 하중이 크면 속도가 제한받고 속도를 높이면 하중이 제한받습니다.

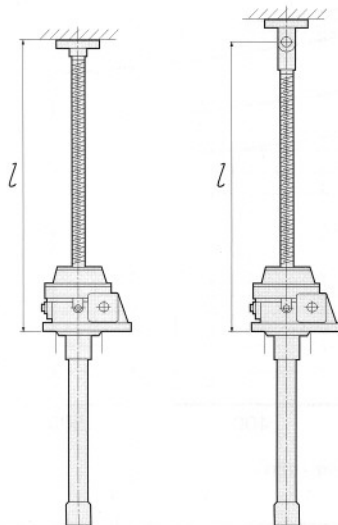
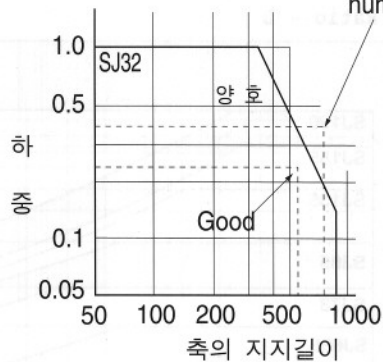
다음 페이지의 그래프의 하중조건과 필요속도를 만족시키는 형식번호를 선택하십시오.

[3] 허용횡하중

잭은 압축하중, 인장하중 및 축수직방향의 하중으로써 설계되면 좋습니다. 어쩔수 없이 횡으로 하중이 걸리는 경우에는 형식번호를 크게 할 필요가 있는 경우도 있습니다.

허용 횡하중의 표로써 확인을 하여 주십시오.

다음 상위기종을 사용  
Use a higher numbered Type

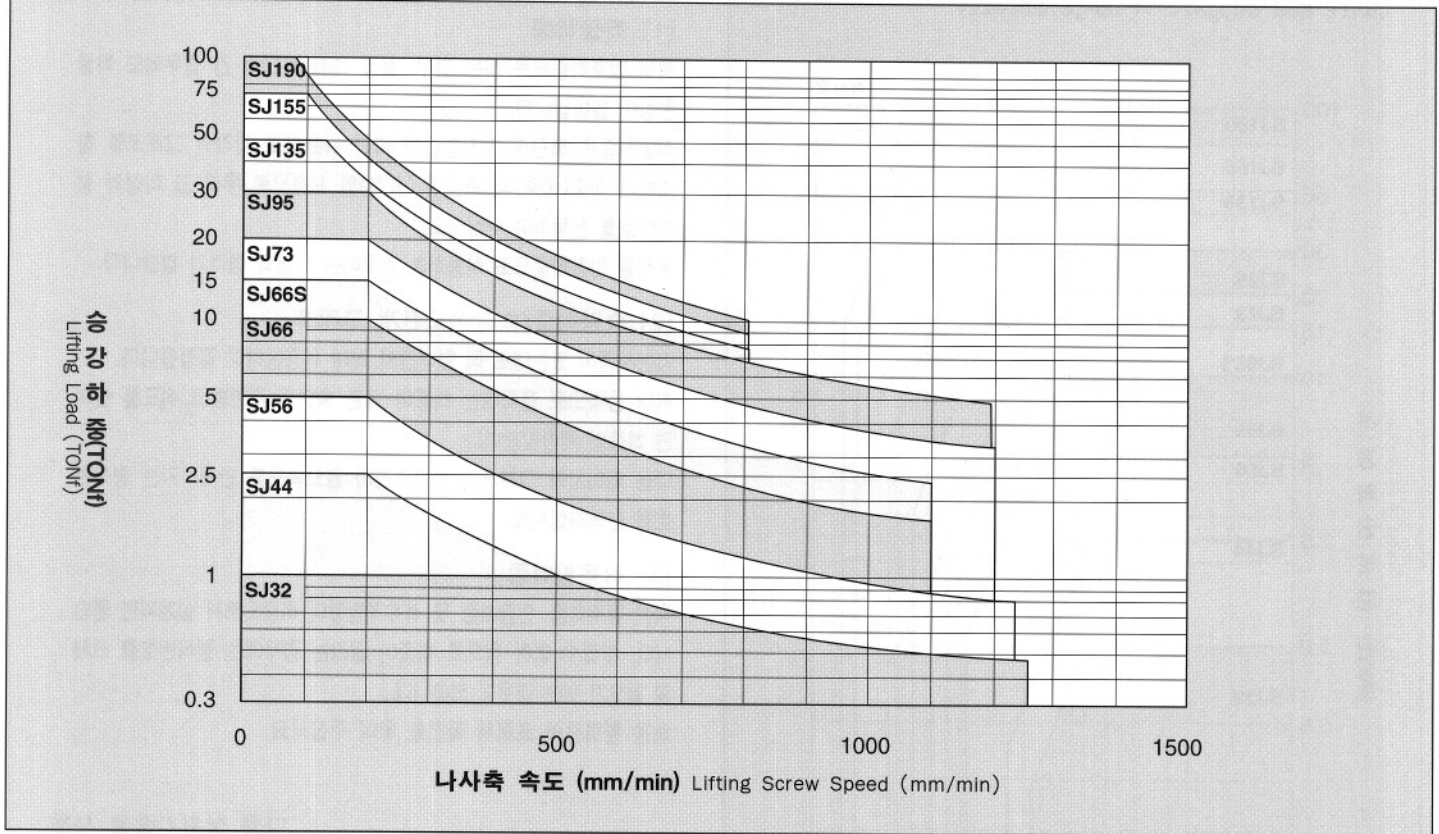


Type Selection Using Graphs

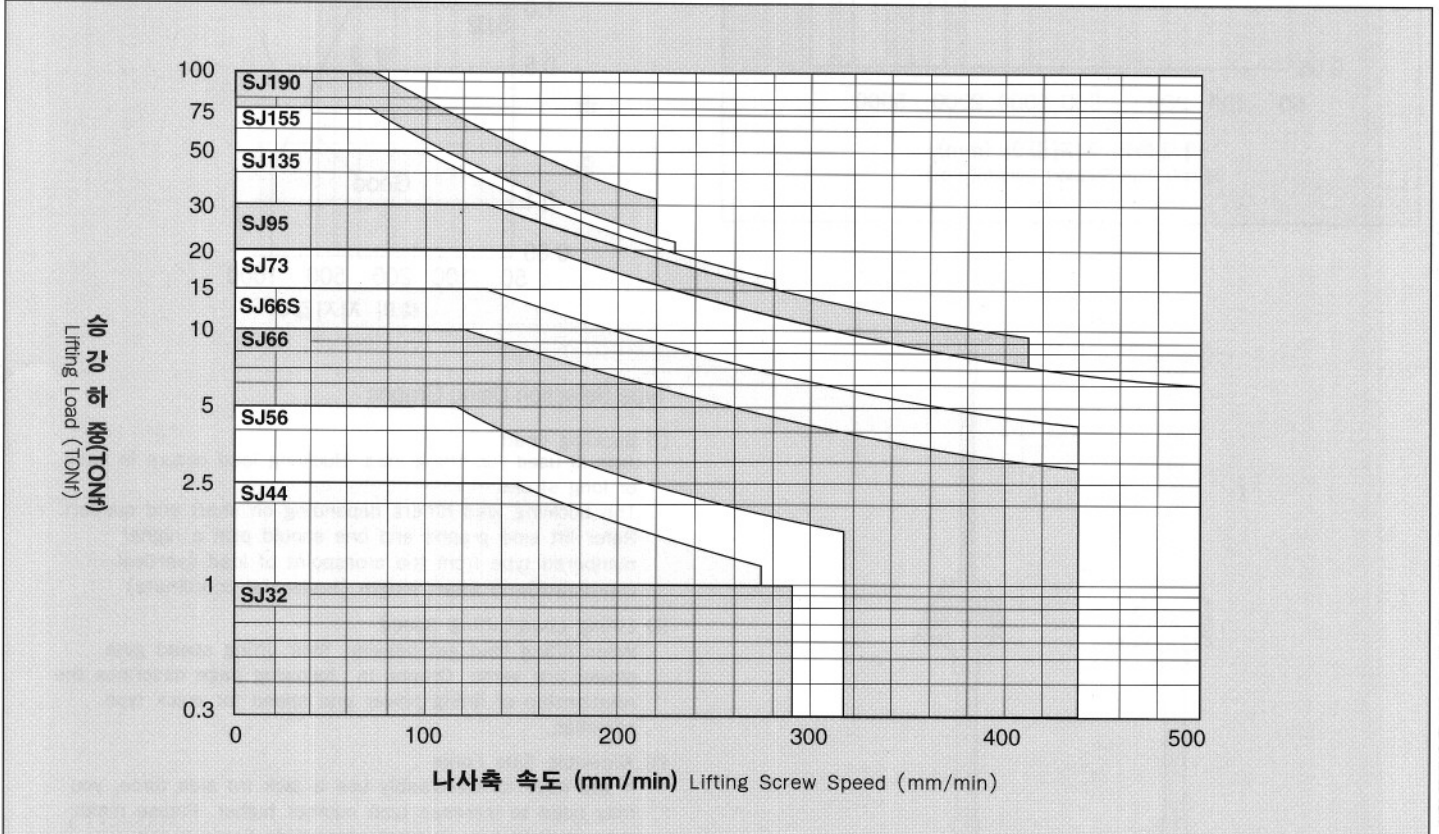
- (1) Buckling Load  
Jack is used for lifting load. Buckling load occurs in case of long stroke.  
The buckling load differs depending on shaft end support. Refer lift side graphs and one should pick a higher numbered type from the crosspoint of load (vertical coordinate) and Shaft length (horizontal coordinate)
- (2) Lifting Load/Lifting Speed  
When lifting load get heavier, their lifting speed gets slower, vice versa. Graphs in following page describes the relationship of lifting power and speed for quick type selection.
- (3) Allowable Side Force  
If you have to inavoidably use a jack fro side force, you may need to increase type number higher. Please make sure of right type number using Side Force graph.

# Lifting Load / Lifting Speed

감속비 Reduction Ratio - H



감속비 Reduction Ratio - L

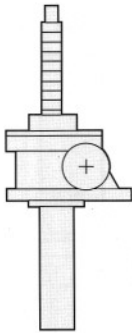


# Allowable Side Force

## 상방향형 Upright Lifting Type

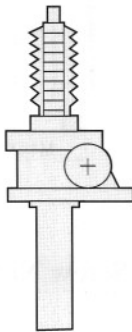
(kgf)

축 보호 카바 없음  
W/o Dustproof Bellow



형번(Type No) \ 행정(mm)Stroke	100	200	300	400	500	600	800	1000
SJ32	20	15	12	10	8	-	-	-
SJ44	70	40	30	21	17	14	11	-
SJ56	145	90	60	50	40	35	25	21
SJ66	130	80	60	45	35	30	24	20
SJ66S	170	110	80	65	50	45	35	30
SJ73	305	230	190	155	135	120	95	75
SJ95	475	390	320	270	225	190	150	120
SJ135	1265	915	675	565	470	405	320	260
SJ155	1590	1200	930	760	640	555	440	360
SJ190	1870	1375	1090	900	765	570	530	440

축 보호 카바 부착  
With Dustproof Bellow

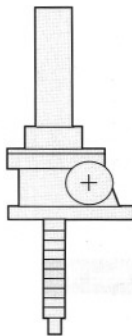


SJ32	15	12	10	8	-	-	-	-
SJ44	40	30	21	17	14	11	-	-
SJ56	90	60	50	40	35	25	21	-
SJ66	80	60	45	35	30	24	20	-
SJ66S	110	80	65	50	45	35	30	-
SJ73	230	190	155	135	120	95	75	-
SJ95	390	320	270	225	190	150	120	-
SJ135	915	675	565	470	405	320	260	-
SJ155	1200	930	760	640	555	440	360	-
SJ190	1375	1090	900	765	570	530	440	-

## 하방향형 Inverted Lifting Type

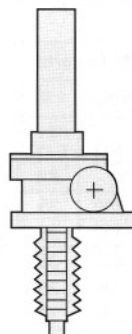
(kgf)

축 보호 카바 없음  
W/o Dustproof Bellow



형번(Type No) \ 행정(mm)Stroke	100	200	300	400	500	600	800	1000
SJ32	18	14	11	9	8	-	-	-
SJ44	45	40	25	20	17	14	11	-
SJ56	90	65	50	40	35	30	24	20
SJ66	80	60	45	35	30	25	22	18
SJ66S	100	75	60	50	45	40	30	25
SJ73	250	195	155	130	115	100	80	60
SJ95	365	285	235	200	175	155	125	105
SJ135	670	545	460	375	350	310	255	220
SJ155	845	700	600	525	465	420	350	300
SJ190	895	760	665	595	530	480	405	350

축 보호 카바 부착  
With Dustproof Bellow

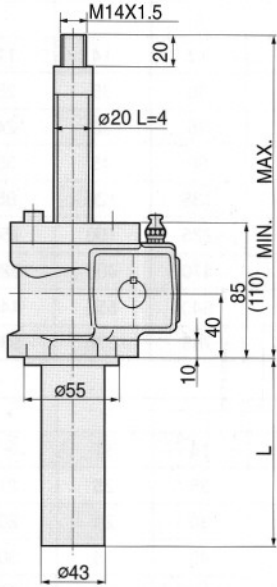


SJ32	14	11	9	8	-	-	-	-
SJ44	40	25	20	17	14	11	-	-
SJ56	65	50	40	35	30	24	20	-
SJ66	60	45	35	30	25	22	18	-
SJ66S	75	60	50	45	40	30	25	-
SJ73	195	155	130	115	100	80	60	-
SJ95	285	235	200	175	155	125	105	-
SJ135	545	460	375	350	310	255	220	-
SJ155	700	600	525	465	420	350	300	-
SJ190	760	665	595	530	480	405	350	-

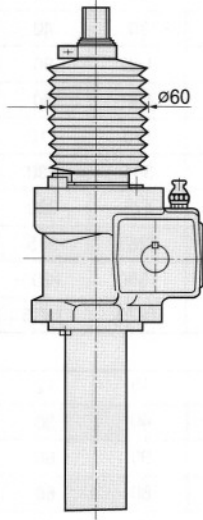


# SJ 32 • Traveling Shaft Type (축승강형)

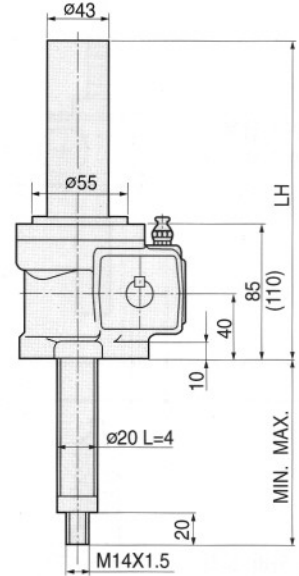
상방향형 Upright Traveling



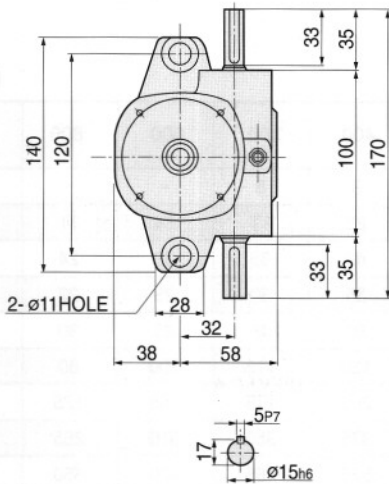
보호카바 Dustproof Bellow



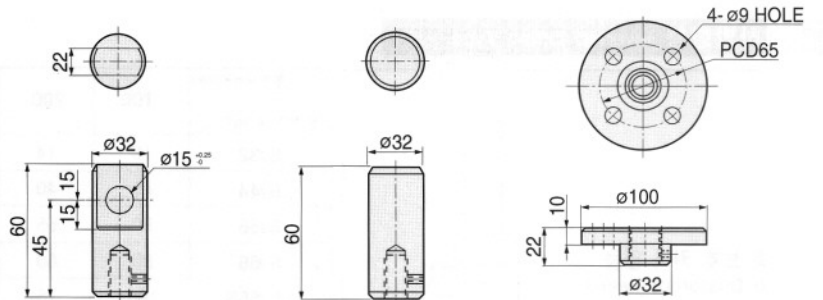
하방향형 Inverted Traveling



평면도 Plane Figure



Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

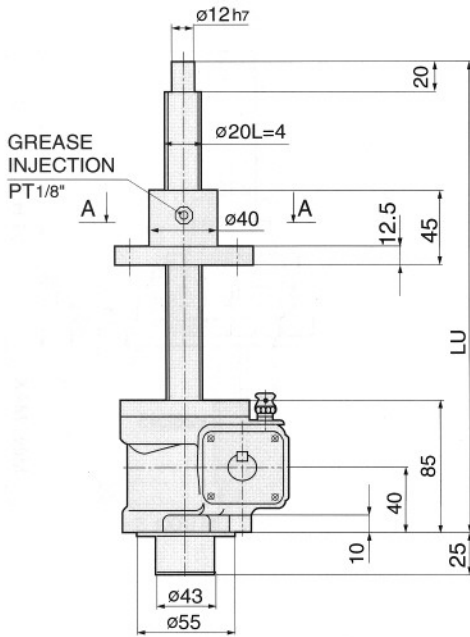
플렌지 너트 Flange Nut

## SJ32 Screw Jack

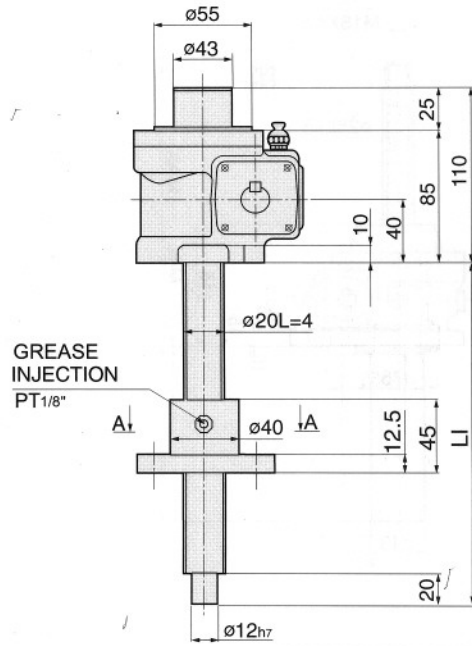
크 오 전 스 트 크	U 상방향형 (Upright Type)										I 하방향형 (Inverted Type)									
	N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)					N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)				
	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover		L	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover		L	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover		LH	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover		LH
	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX	
100	120	220	175	270	150	145	245	200	300	150	35	135	90	190	230	35	135	90	190	230
200	120	320	175	370	250	145	315	200	400	250	35	235	90	290	330	35	235	90	290	330
300	120	420	205	505	350	145	415	230	530	350	35	335	120	420	430	35	335	120	420	430
400	120	520	205	605	450	145	515	230	630	450	35	435	120	520	530	35	435	120	520	530
500	120	620	215	715	550	145	615	240	740	550	35	535	130	630	630	35	535	130	630	630
600	120	720	215	815	650	145	715	240	840	650	35	635	130	730	730	35	635	130	730	730
800	120	920	265	1060	850	145	915	290	1090	850	35	835	180	980	930	35	835	180	980	930

# SJ 32T • Traveling Nut Type (너트승강형)

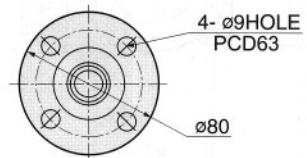
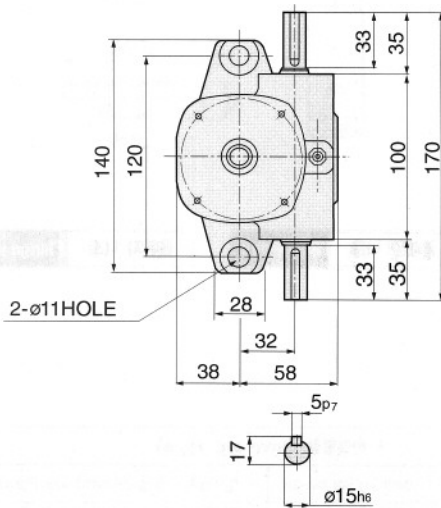
상방향형 Upright Traveling



하방향형 Inverted Traveling



평면도 Plane Figure



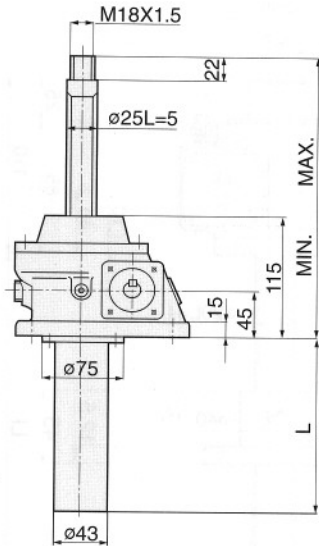
VIEW A-A

SJ32T

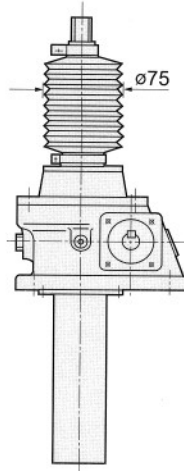
행 S T R O K E 장	너트승강형 Nut Traveling Type	
	U상방향형 Upright	L하방향형 Inverted
	LU	LI
100	290	205
200	390	305
300	490	405
400	590	505
500	690	605
600	790	705
800	990	905

# SJ 44 • Traveling Shaft Type (축승강형)

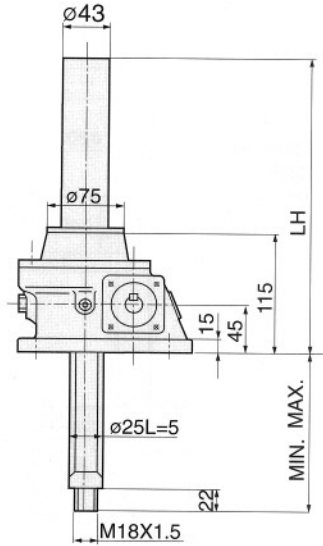
상방향형 Upright Traveling



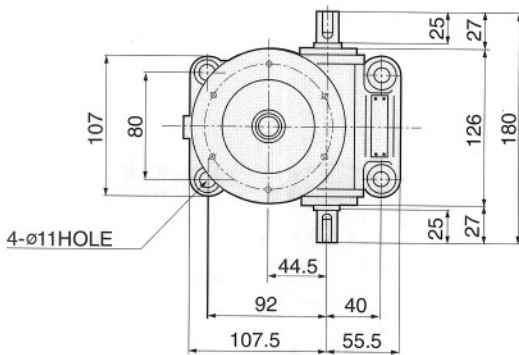
보호카바 Dustproof Bellow



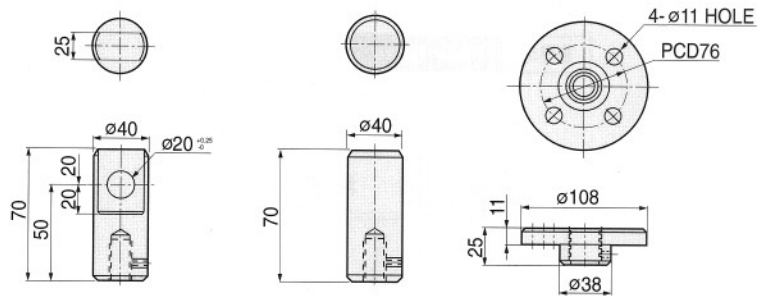
하방향형 Inverted Traveling



평면도 Plane Figure



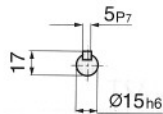
Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

플랜지 너트 Flange Nut

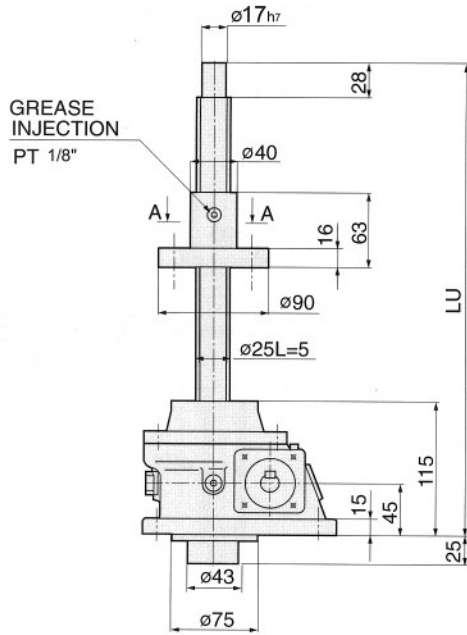


## SJ44 Screw Jack

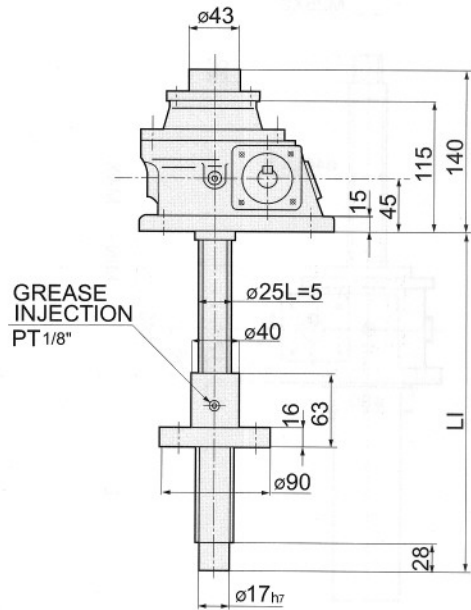
행 STROKE 장	U 상방향형 (Upright Type)										I 하방향형 (Inverted Type)													
	N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)					N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)								
	N 축보호카바없음 N: No Dustproof Cover		B 축보호카바부착 B: Dustproof Cover			L	N 축보호카바없음 N: No Dustproof Cover		B 축보호카바부착 B: Dustproof Cover			L	N 축보호카바없음 N: No Dustproof Cover		B 축보호카바부착 B: Dustproof Cover			LH	N 축보호카바없음 N: No Dustproof Cover		B 축보호카바부착 B: Dustproof Cover			LH
	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	
100	155	255	195	295	155	155	255	195	295	155	40	140	80	180	270	40	140	80	180	270				
200	155	355	195	395	255	155	355	195	395	255	40	240	80	280	370	40	240	80	280	370				
300	155	455	230	530	355	155	455	230	530	355	40	340	115	415	470	40	340	115	415	470				
400	155	555	230	630	455	155	555	230	630	455	40	440	115	515	570	40	440	115	515	570				
500	155	655	230	730	555	155	655	230	730	555	40	540	115	615	670	40	540	115	615	670				
600	155	755	270	870	655	155	755	270	870	655	40	640	155	755	770	40	640	155	755	770				
800	155	955	270	1070	855	155	955	270	1070	855	40	840	155	955	970	40	840	155	955	970				

# SJ44T • Traveling Nut Type (너트승강형)

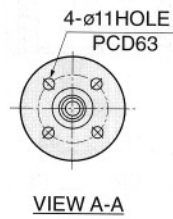
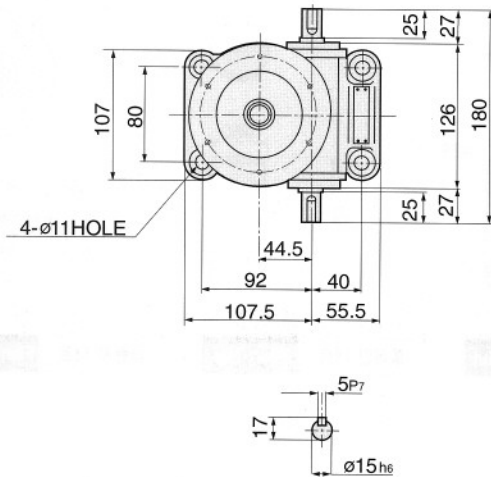
상방향형 Upright Traveling



하방향형 Inverted Traveling



평면도 Plane Figure



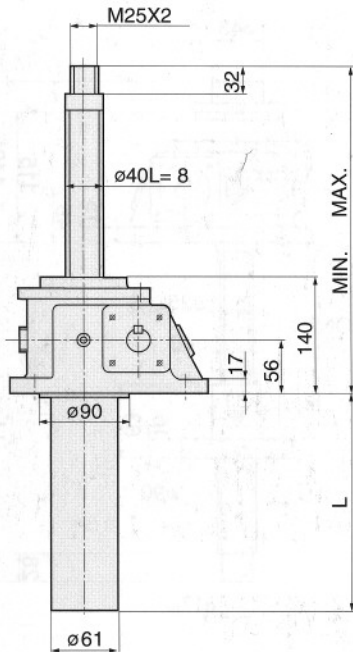
SJ44T

행 S T R O K E 정	너트승강형 Nut Traveling Type	
	U상방향형 Upright	L하방향형 Inverted
	LU	LI
100	350	260
200	450	360
300	550	460
400	650	560
500	750	660
600	850	760
800	1050	960

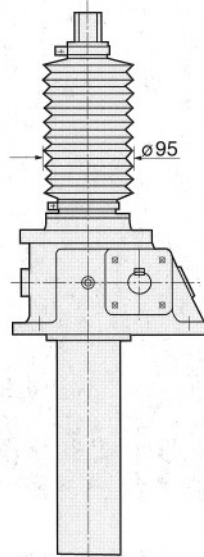


# SJ 56 • Traveling Shaft Type (축승강형)

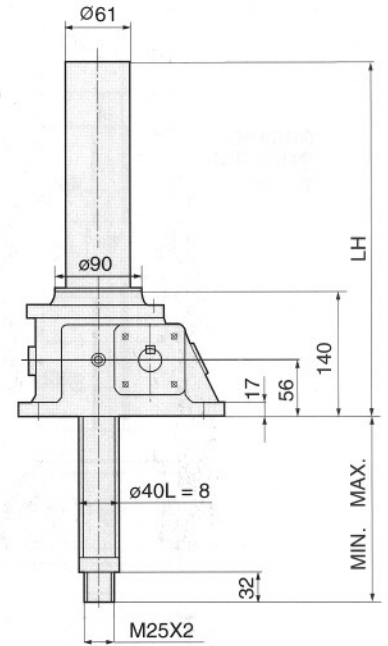
상방향형 Upright Traveling



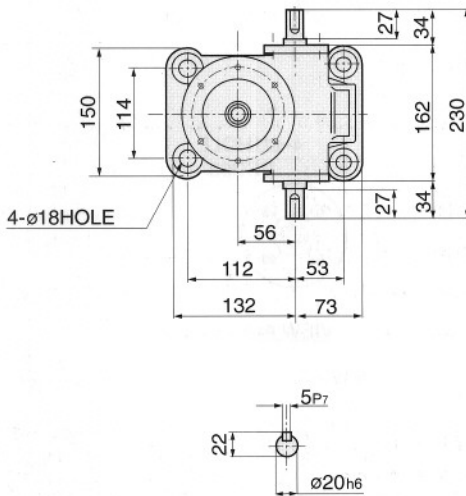
보호카바 Dustproof Bellow



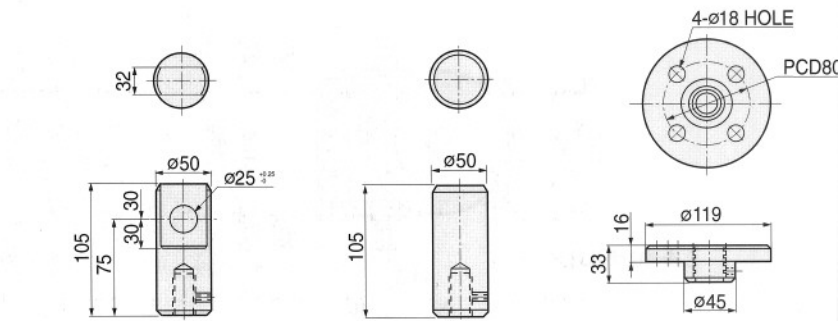
하방향형 Inverted Traveling



평면도 Plane Figure



Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

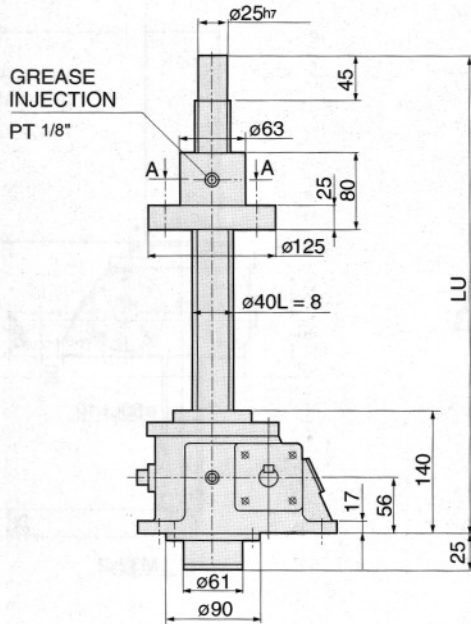
플렌지 너트 Flange Nut

## SJ56 Screw Jack

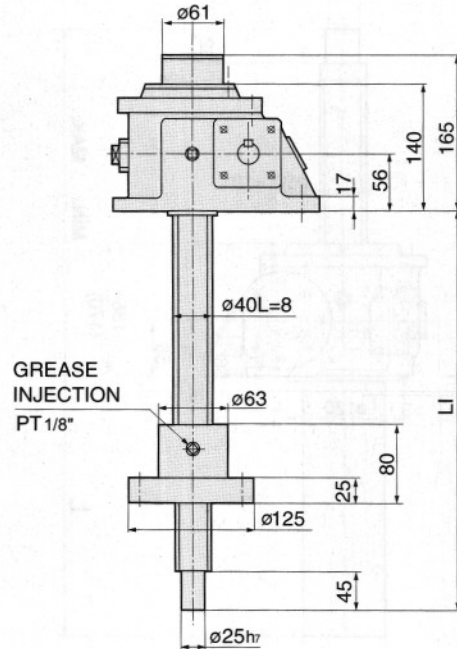
크 스 트 로 크	U 상방향형 (Upright Type)										I 하방향형 (Inverted Type)													
	N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)					N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)								
	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover			L	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover			L	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover			LH	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover			LH
	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX			
100	180	280	245	320	160	180	280	245	320	160	50	150	90	190	285	50	150	90	190	285				
200	180	380	245	420	260	180	380	245	420	260	50	250	90	290	385	50	250	90	290	385				
300	180	480	250	550	360	180	480	250	550	360	50	350	125	425	485	50	350	125	425	485				
400	180	580	250	650	460	180	580	250	650	460	50	450	125	525	585	50	450	125	525	585				
500	180	680	250	750	560	180	680	250	750	560	50	550	125	625	685	50	550	125	625	685				
600	180	780	290	890	660	180	780	290	890	660	50	650	165	765	785	50	650	165	765	785				
800	180	980	290	1090	860	180	980	290	1090	860	50	850	165	965	985	50	850	165	965	985				

# SJ56T • Traveling Nut Type (너트승강형)

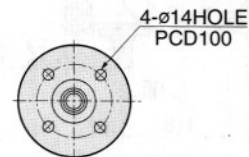
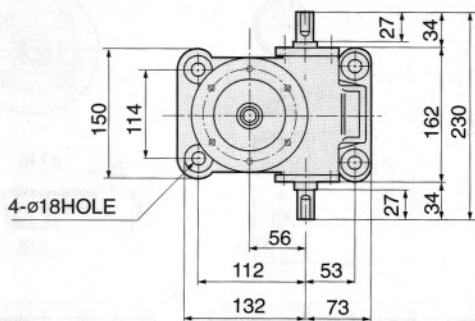
상방향형 Upright Traveling



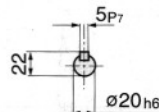
하방향형 Inverted Traveling



평면도 Plane Figure



VIEW A-A

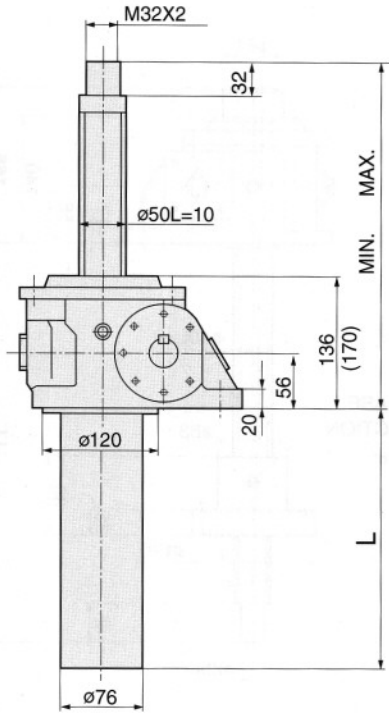


SJ56T

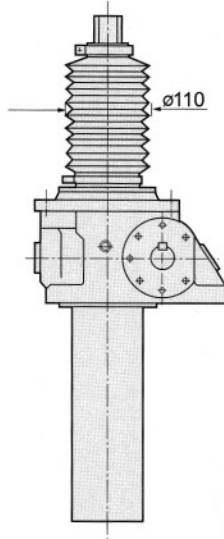
행 S T R O K E 정	너트승강형 Nut Traveling Type	
	U상방향형 Upright	L하방향형 Inverted
	LU	LI
100	390	280
200	490	380
300	590	480
400	690	580
500	790	680
600	890	780
800	1090	980

# SJ 66 • Traveling Shaft Type (축승강형)

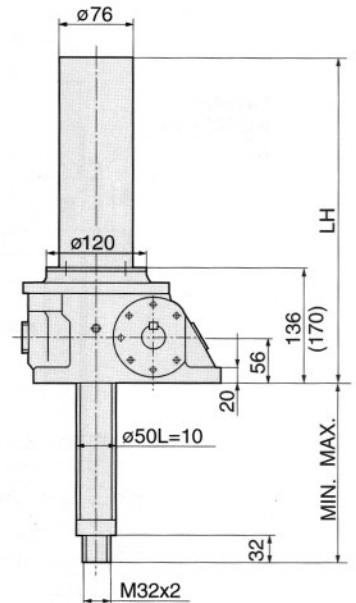
상방향형 Upright Traveling



보호카바 Dustproof Bellow

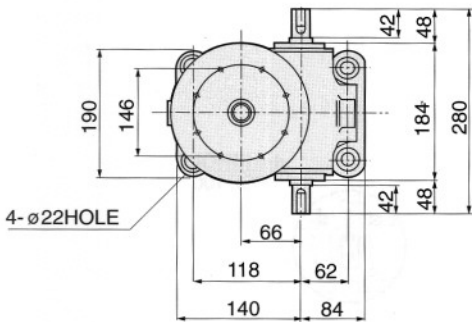


하방향형 Inverted Traveling

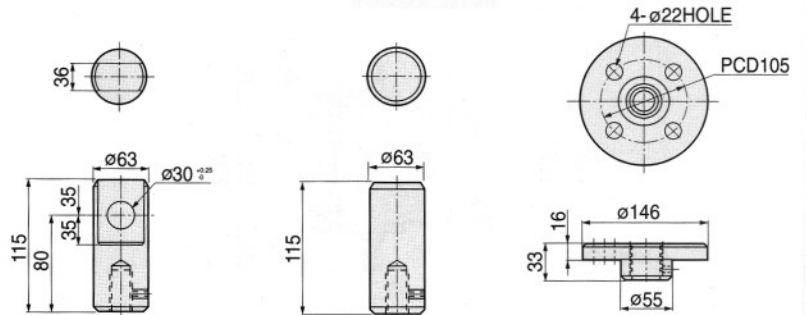


( ) : 회전방지키 설치시

평면도 Plane Figure



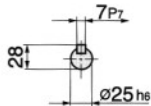
Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

플랜지 너트 Flange Nut



SJ66 Screw Jack

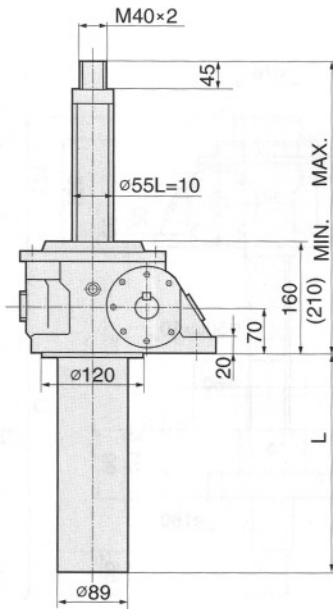
형 식	U 상방향형 (Upright Type)										I 하방향형 (Inverted Type)													
	N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)					N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)								
	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover			L	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover			L	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover			LH	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B: Dustproof Cover			LH
	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX		MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX			
100	185	285	225	325	160	220	320	260	360	160	50	150	90	190	295	50	150	90	190	330				
200	185	385	225	425	260	220	420	260	460	260	50	250	90	290	395	50	250	90	290	430				
300	185	485	260	560	360	220	520	295	595	360	50	350	125	425	495	50	350	125	425	530				
400	185	585	260	660	460	220	620	295	695	460	50	450	125	525	595	50	450	125	525	630				
500	185	685	260	760	560	220	720	295	795	560	50	550	125	625	695	50	550	125	625	730				
600	185	785	300	900	660	220	820	335	935	660	50	650	165	765	795	50	650	165	765	830				
800	185	985	300	1100	860	220	1020	335	1135	860	50	850	165	965	995	50	850	165	965	1030				



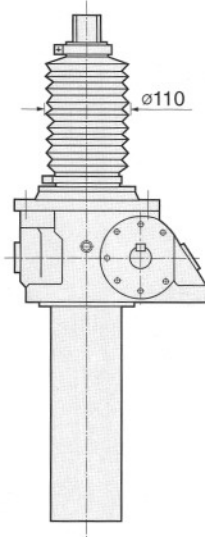


# SJ 66S • Traveling Shaft Type (축승강형)

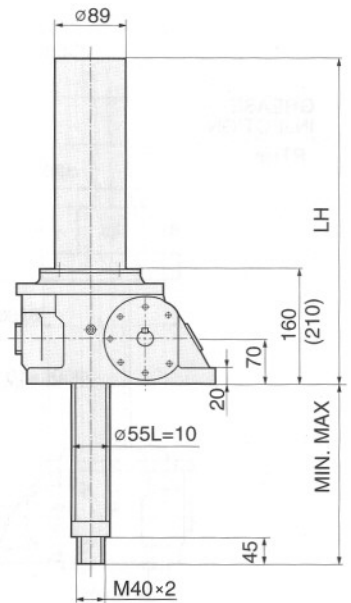
상방향형 Upright Traveling



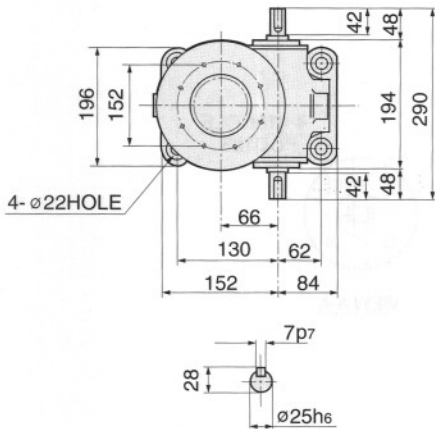
보호카바 Dustproof Bellow



하방향형 Inverted Traveling

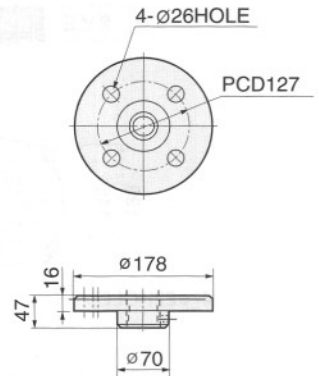
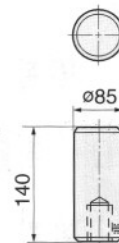
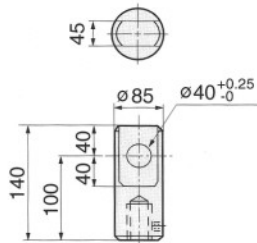


평면도 Plane Figure



( ) : 회전방지키 설치시

Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

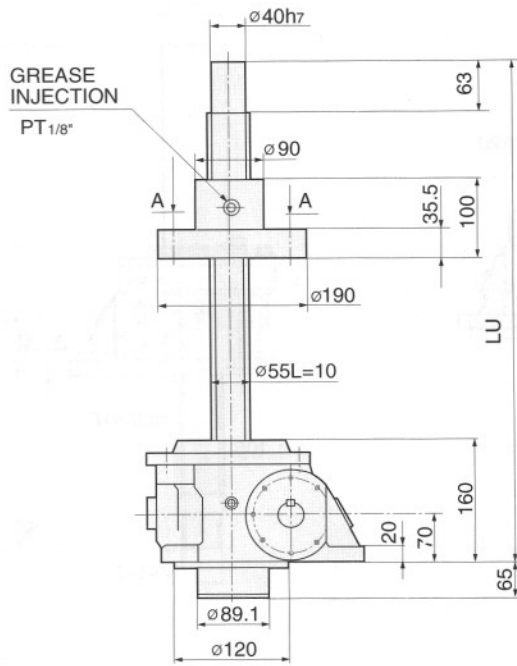
플랜지 너트 Flange Nut

## SJ66S Screw Jack

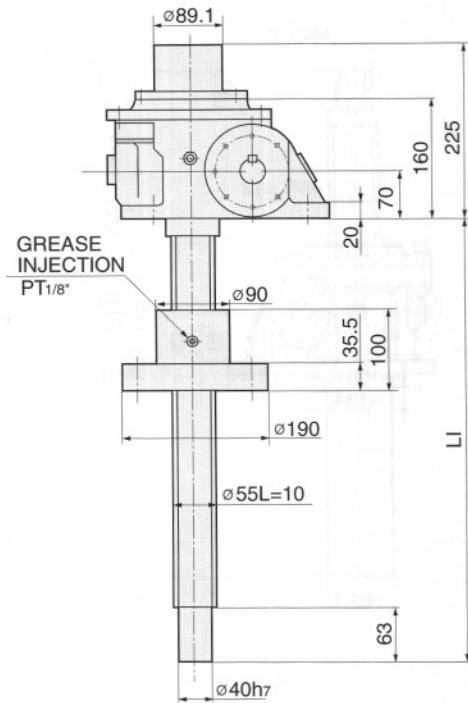
회 전 스 트 로 크	U 상방향형 (Upright Type)												I 하방향형 (Inverted Type)											
	N 회전방지키없음 (Prevent key Not Included)						k 회전방지키있음 (Prevent key Provided)						N 회전방지키없음 (Prevent key Not Included)						k 회전방지키있음 (Prevent key Provided)					
	N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover		
	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH
100	220	320	160	265	365	160	270	370	160	315	415	160	60	160	320	105	205	320	60	160	370	105	205	370
200	220	420	260	265	465	260	270	470	260	315	515	260	60	260	420	105	305	420	60	260	470	105	305	470
300	220	520	360	300	600	360	270	570	360	350	650	360	60	360	520	140	440	520	60	360	670	140	440	670
400	220	620	460	300	700	460	270	670	460	350	750	460	60	460	620	140	540	620	60	460	770	140	540	770
500	220	720	560	300	800	560	270	770	560	350	850	560	60	560	720	140	640	720	60	560	870	140	640	870
600	220	820	660	340	940	660	270	870	660	390	990	660	60	660	820	180	780	820	60	660	1070	180	780	1070
800	220	1020	860	340	1140	860	270	1070	860	390	1190	860	60	860	1020	180	980	1020	60	860	1270	180	980	1270

# SJ66ST • Traveling Nut Type (너트승강형)

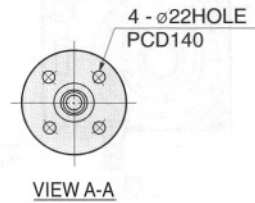
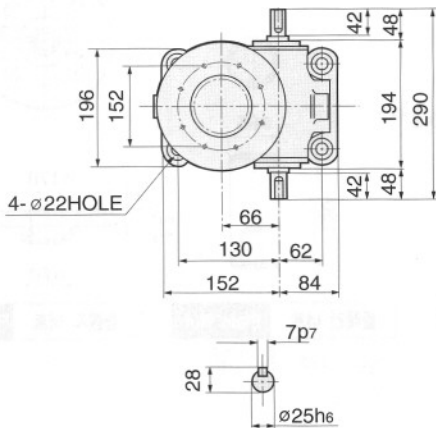
상방향형 Upright Traveling



하방향형 Inverted Traveling



평면도 Plane Figure



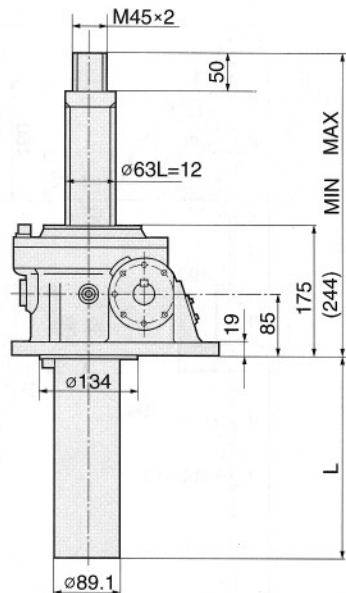
SJ66ST

행 STROKE 정	너트승강형 Nut Traveling Type	
	U상방향형 Upright	L하방향형 Inverted
	LU	LI
100	485	345
200	585	445
300	685	545
400	785	645
500	885	745
600	985	845
800	1185	1045

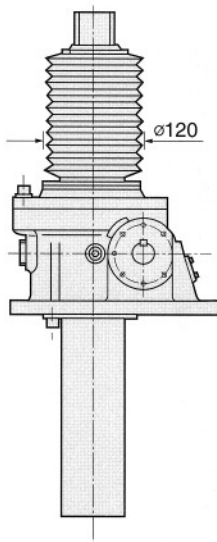


# SJ 73 • Traveling Shaft Type (축승강형)

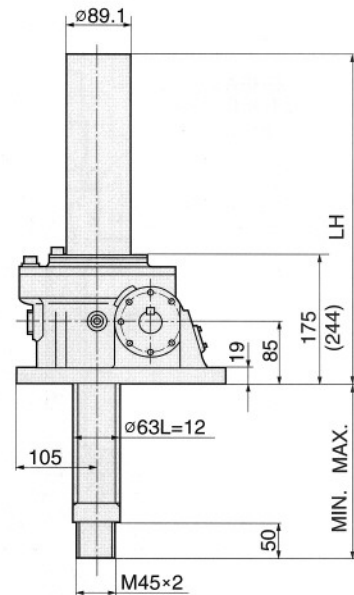
상방향형 Upright Traveling



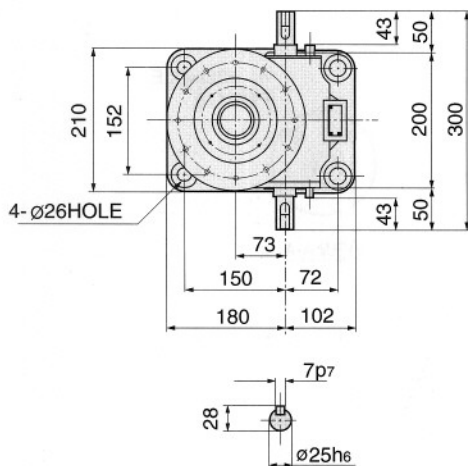
보호카바 Dustproof Bellow



하방향형 Inverted Traveling

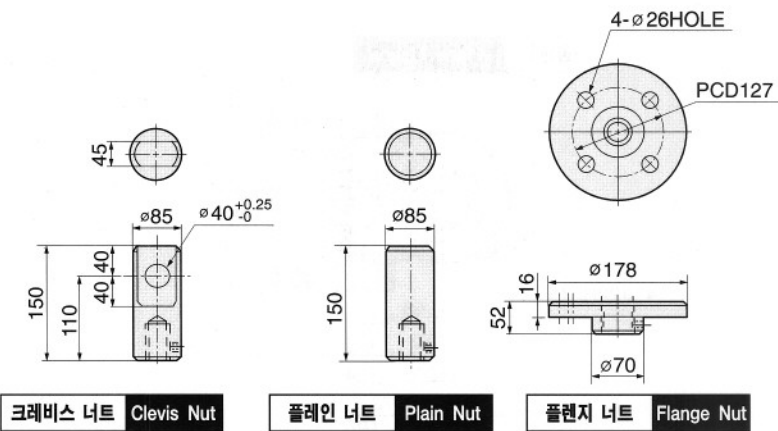


평면도 Plane Figure



( ) : 회전방지키 설치시

Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

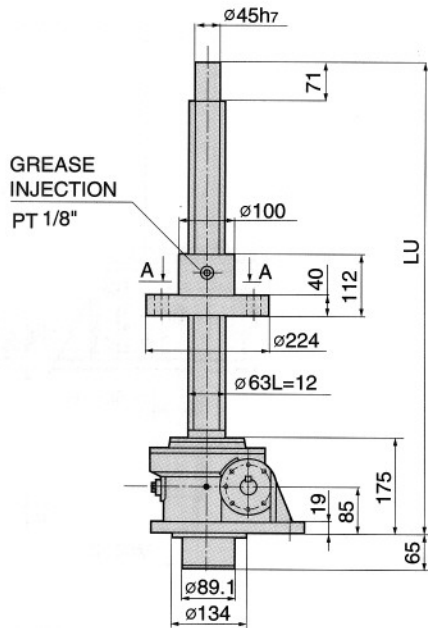
플랜지 너트 Flange Nut

## SJ73 Screw Jack

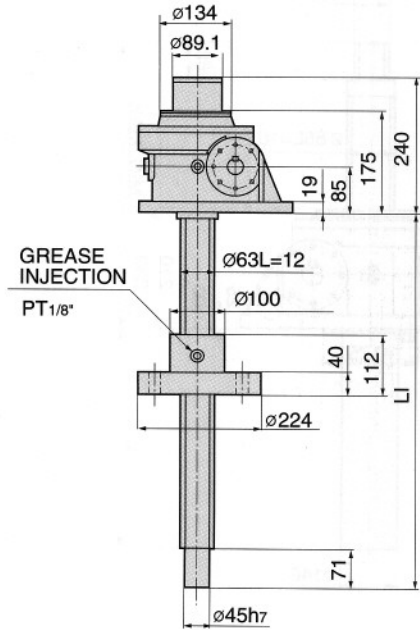
0.5 STROKE 0.2	U 상방향형 (Upright Type)												I 하방향형 (Inverted Type)													
	N 회전방지키없음 (Prevent key Not Included)						k 회전방지키있음 (Prevent key Provided)						N 회전방지키없음 (Prevent key Not Included)						k 회전방지키있음 (Prevent key Provided)							
	N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B: Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B: Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B: Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B: Dustproof Cover				
	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX
100	235	335	165	285	385	165	305	405	165	355	455	165	60	160	340	110	210	340	60	160	409	110	210	409		
200	235	435	265	285	485	265	305	505	265	355	555	265	60	260	440	110	310	440	60	260	509	110	310	509		
300	235	535	365	320	620	365	305	605	365	390	690	365	60	360	540	145	445	540	60	360	609	145	445	609		
400	235	635	465	320	720	465	305	705	465	390	790	465	60	460	640	145	545	640	60	460	709	145	545	709		
500	235	735	565	320	820	565	305	805	565	390	890	565	60	560	740	145	645	740	60	560	809	145	645	809		
600	235	835	665	360	960	665	305	905	665	430	1030	665	60	660	840	185	785	840	60	660	909	185	785	909		
800	235	1035	865	360	1160	865	305	1105	865	430	1230	865	60	860	1040	185	985	1040	60	860	1109	185	985	1109		

# SJ73T • Traveling Nut Type (너트승강형)

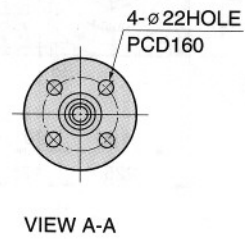
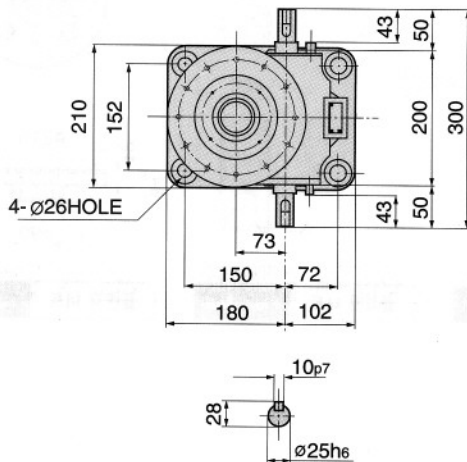
상방향형 Upright Traveling



하방향형 Inverted Traveling



평면도 Plane Figure

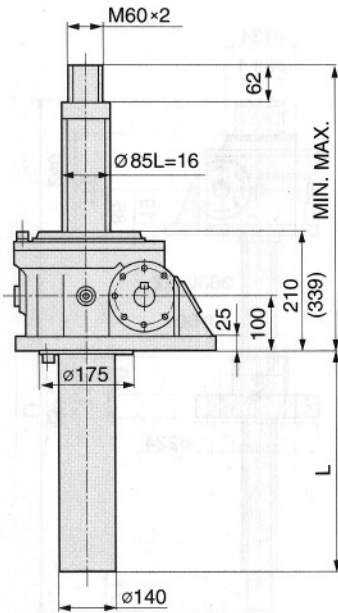


SJ73T

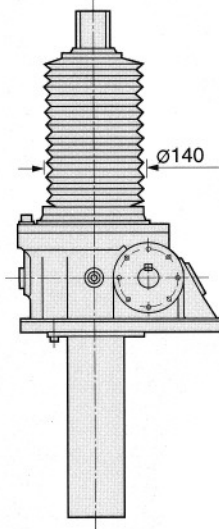
STROKE 인치	너트승강형 Nut Traveling Type	
	U상방향형 Upright	L하방향형 Inverted
	LU	LI
100	515	345
200	615	445
300	715	545
400	815	645
500	915	745
600	1015	845
800	1215	1045

# SJ95 • Traveling Shaft Type (축승강형)

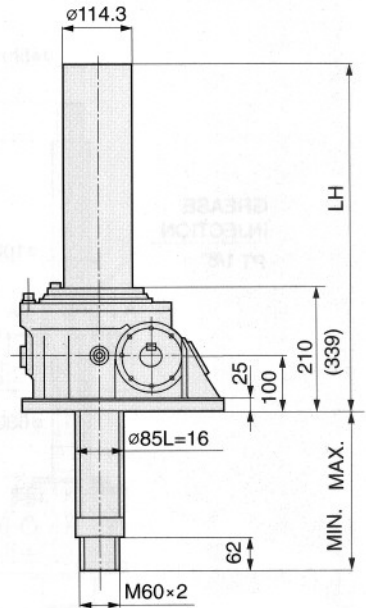
상방향형 Upright Traveling



보호카바 Dustproof Bellow

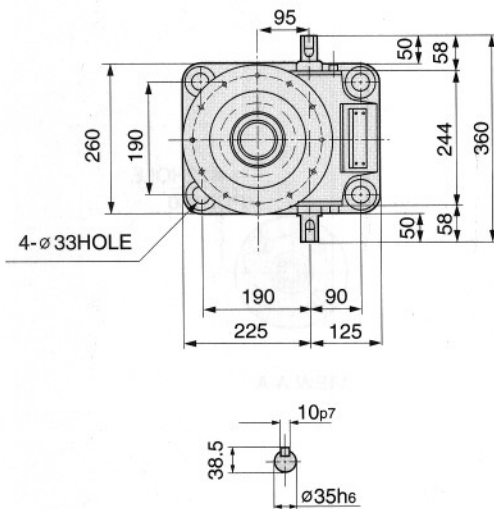


하방향형 Inverted Traveling

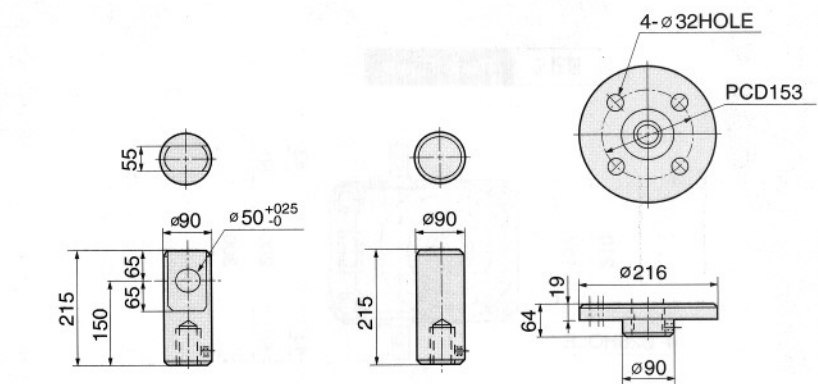


( ) : 회전방지키 설치시

평면도 Plane Figure



Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

플랜지 너트 Flange Nut

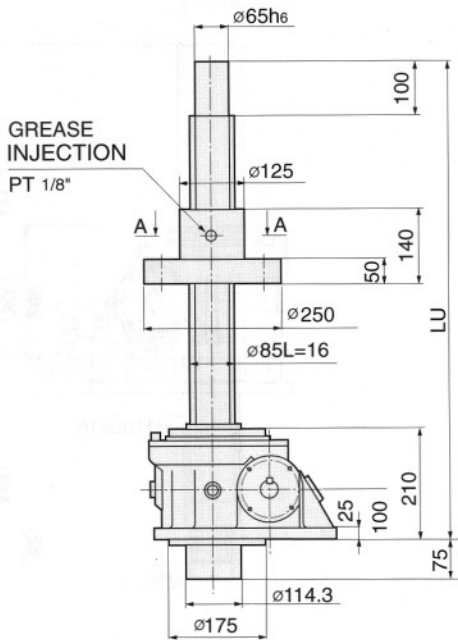
## SJ95 Screw Jack

스 트 로 크	U 상방향형 (Upright Type)										I 하방향형 (Inverted Type)													
	N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)					N 회전방지키없음 (Prevent key Not Included)					k 회전방지키있음 (Prevent key Provided)								
	N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover		B축보호카바부착 B:Dustproof Cover						
	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH
100	280	380	175	335	435	175	410	510	175	465	565	175	70	170	385	125	225	385	70	170	514	125	225	514
200	280	480	275	335	535	275	410	610	275	465	665	275	70	270	485	125	325	485	70	270	614	125	325	614
300	280	580	375	370	670	375	410	710	375	500	800	375	70	370	585	160	460	585	70	370	714	160	460	714
400	280	680	475	370	770	475	410	810	475	500	900	475	70	470	658	160	560	685	70	470	814	160	560	814
500	280	780	575	370	870	575	410	910	575	500	1000	575	70	570	785	160	660	785	70	570	914	160	660	914
600	280	880	675	410	1010	675	410	1010	675	540	1140	675	70	670	885	200	800	885	70	670	1014	200	800	1014
800	280	1080	875	410	1210	875	410	1210	875	540	1340	875	70	870	1085	200	1000	1085	70	870	1214	200	1000	1214

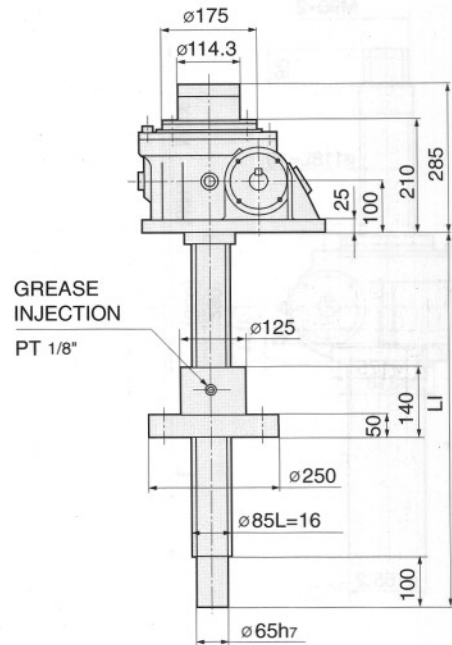


# SJ95T • Traveling Nut Type (너트승강형)

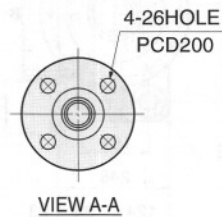
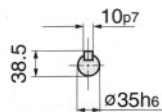
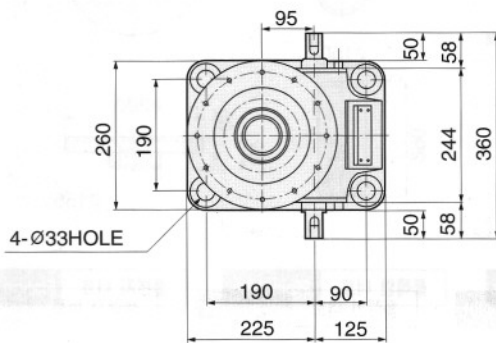
상방향형 Upright Traveling



하방향형 Inverted Traveling



평면도 Plane Figure

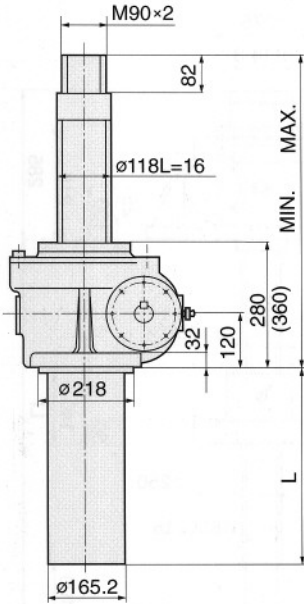


SJ95T

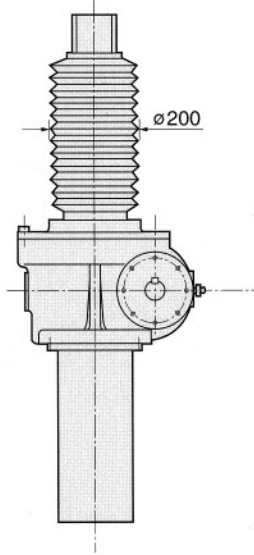
STROKE mm	너트승강형 Nut Traveling Type	
	U상방향형 Upright	L하방향형 Inverted
	LU	LI
100	600	400
200	700	500
300	800	600
400	900	700
500	1000	800
600	1100	900
800	1300	1100

# SJ135 • Traveling Shaft Type (축승강형)

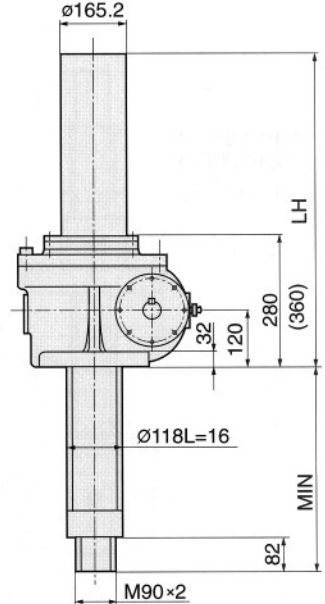
상방향형 Upright Traveling



보호카바 Dustproof Bellow

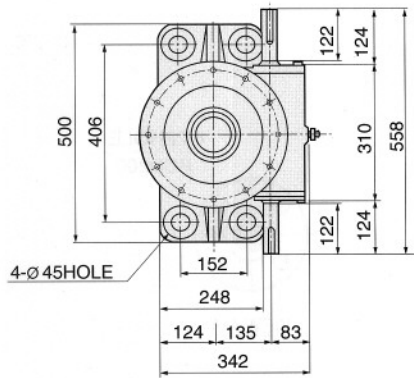


하방향형 Inverted Traveling

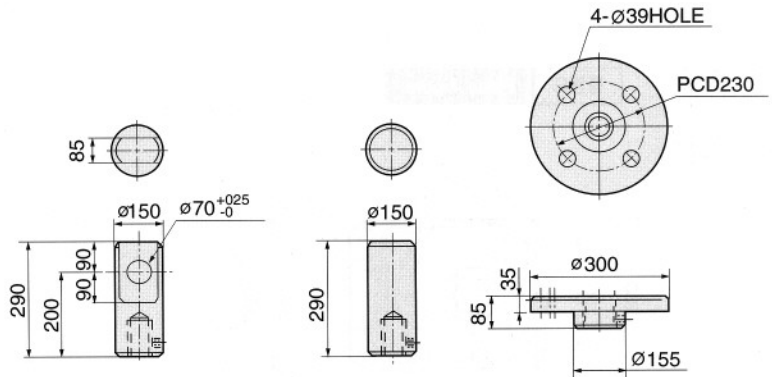


( ) : 회전방지키 설치시

평면도 Plane Figure



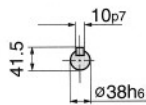
Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

플렌지 너트 Flange Nut

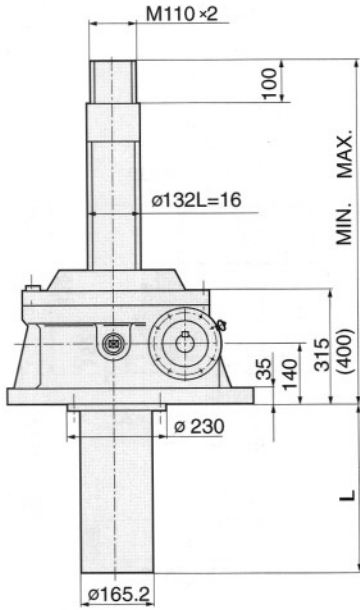


## SJ135 Screw Jack

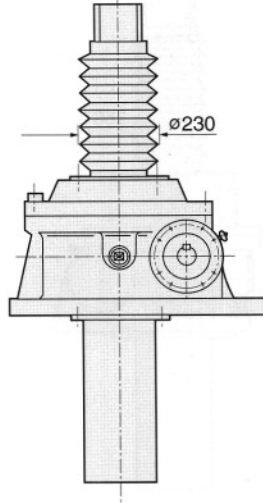
연 STRO 크 0지	U 상방향형 (Upright Type)												I 하방향형 (Inverted Type)											
	N 회전방지키없음 (Prevent key Not Included)						k 회전방지키있음 (Prevent key Provided)						N 회전방지키없음 (Prevent key Not Included)						k 회전방지키있음 (Prevent key Provided)					
	N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover		
	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH
100	370	470	200	425	525	200	450	550	200	505	605	200	90	190	480	145	245	480	90	190	560	145	245	560
200	370	570	300	425	625	300	450	650	300	505	705	300	90	290	580	145	345	580	90	290	660	145	345	660
300	370	670	400	460	760	400	450	750	400	540	840	400	90	390	680	180	480	680	90	390	760	180	480	760
400	370	770	500	460	860	500	450	850	500	540	940	500	90	490	780	180	580	780	90	490	860	180	580	860
500	370	870	600	460	960	600	450	950	600	540	1040	600	90	590	880	180	680	880	90	590	960	180	680	960
600	370	970	700	500	1100	700	450	1050	700	580	1180	700	90	690	980	220	820	980	90	690	1060	220	820	1060
800	370	1170	900	500	1300	900	450	1250	1100	580	1380	900	90	890	1180	220	1020	1180	90	890	1260	220	1020	1260

# SJ155 • Traveling Shaft Type (축승강형)

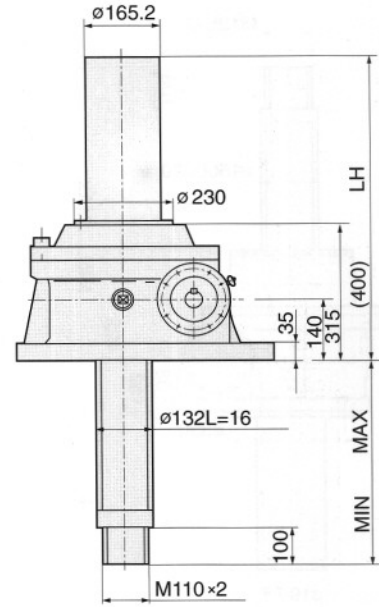
상방향형 Upright Traveling



보호카바 Dustproof Bellow

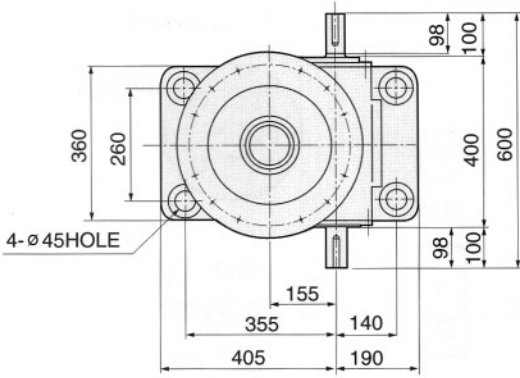


하방향형 Inverted Traveling

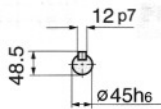
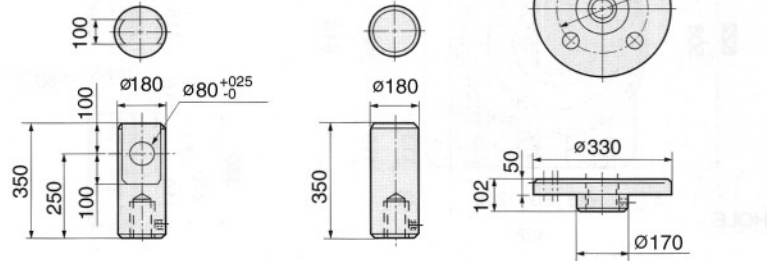


( ) : 회전방지기 설치시

평면도 Plane Figure



Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

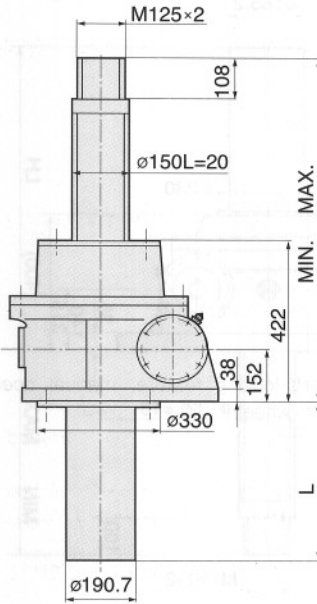
플렌지 너트 Flange Nut

## SJ155 Screw Jack

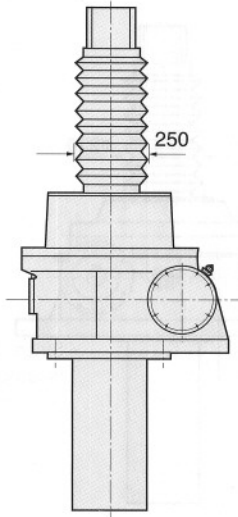
0 전 STROKE	U 상방향형 (Upright Type)												I 하방향형 (Inverted Type)											
	N 회전방지기없음 (Prevent key Not Included)						k 회전방지기있음 (Prevent key Provided)						N 회전방지기없음 (Prevent key Not Included)						k 회전방지기있음 (Prevent key Provided)					
	N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover			N축보호카바없음 N: No Dustproof Cover			B축보호카바부착 B:Dustproof Cover		
	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH
100	425	525	225	490	590	225	510	610	225	575	675	225	110	210	540	175	275	540	110	210	625	175	275	625
200	425	625	325	490	690	325	510	710	325	575	775	325	110	310	640	175	375	640	110	310	725	175	375	725
300	425	725	425	525	825	425	510	810	425	610	910	425	110	410	740	210	510	740	110	410	825	210	510	825
400	425	825	525	525	925	525	510	910	525	610	1010	525	110	510	840	210	610	840	110	510	925	210	610	925
500	425	925	625	525	1025	625	510	1010	625	610	1110	625	110	610	940	210	710	940	110	610	1025	210	710	1025
600	425	1025	725	565	1165	725	510	1110	725	650	1250	725	110	710	1040	250	850	1040	110	710	1325	250	850	1325
800	425	1225	925	565	1365	925	510	1310	925	650	1450	925	110	910	1240	250	1050	1240	110	910	1525	250	1050	1525

# SJ190 · Traveling Shaft Type (축승강형)

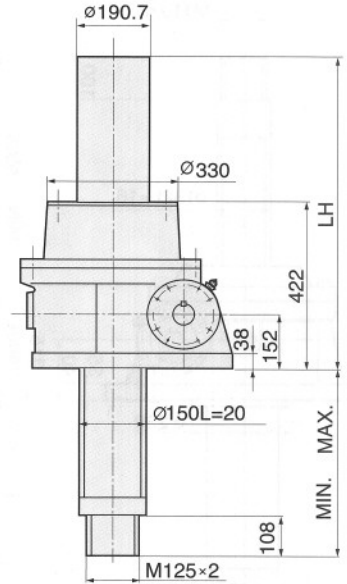
상방향형 Upright Traveling



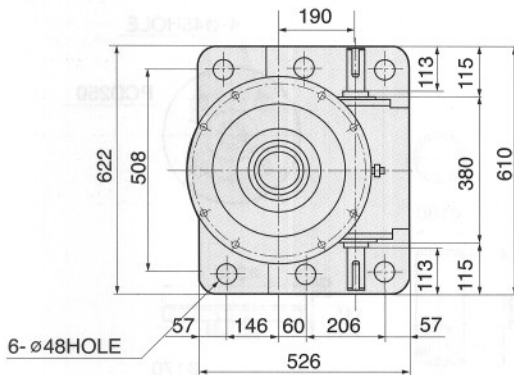
보호카바 Dustproof Bellow



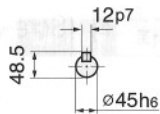
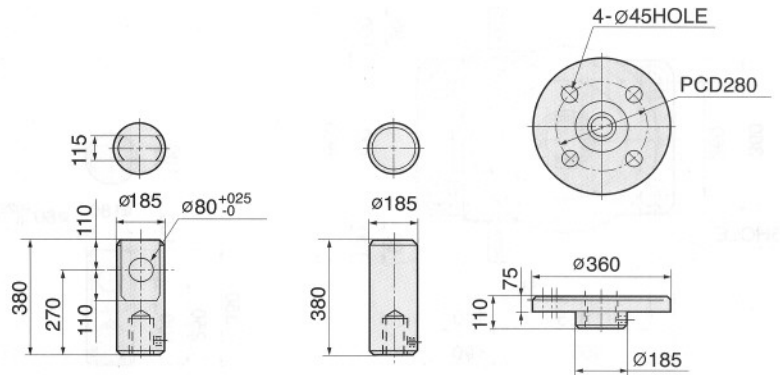
하방향형 Inverted Traveling



평면도 Plane Figure



Dimension of Screw Nut



크레비스 너트 Clevis Nut

플레인 너트 Plain Nut

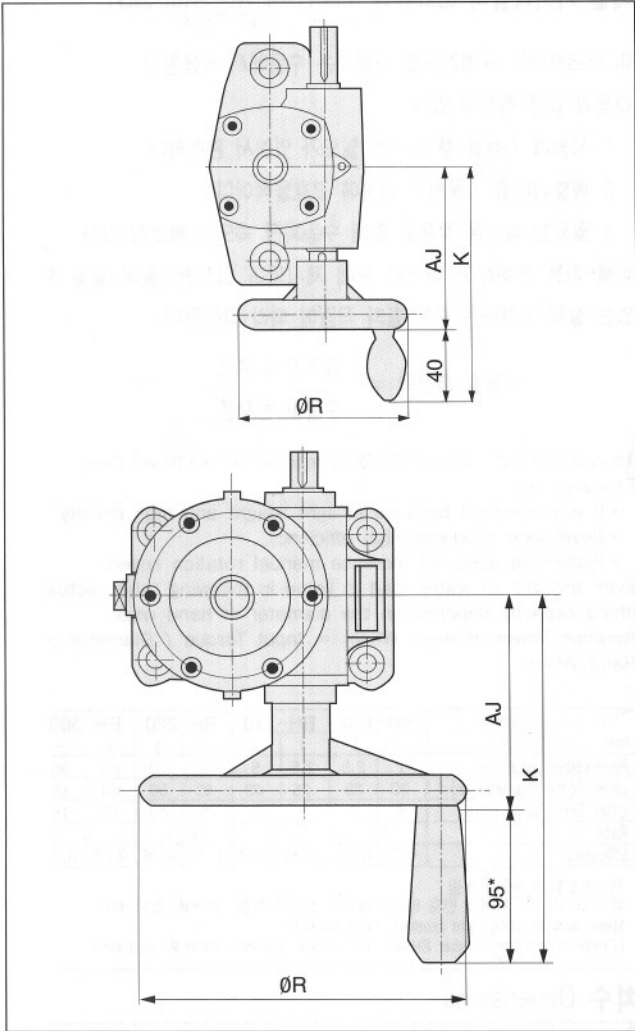
플랜지 너트 Flange Nut

## SJ190 Screw Jack

0.2 STR OKE 0.2	U 상방향형 (Upright Type)												I 하방향형 (Inverted Type)														
	N 회전방지키없음 (Prevent key Not Included)						k 회전방지키있음 (Prevent key Provided)						N 회전방지키없음 (Prevent key Not Included)						k 회전방지키있음 (Prevent key Provided)								
	N축보호커버없음 N: No Dustproof Cover			B축보호커버부착 B: Dustproof Cover			N축보호커버없음 N: No Dustproof Cover			B축보호커버부착 B: Dustproof Cover			N축보호커버없음 N: No Dustproof Cover			B축보호커버부착 B: Dustproof Cover			N축보호커버없음 N: No Dustproof Cover			B축보호커버부착 B: Dustproof Cover					
	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	L	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH	MIN	MAX	LH
100	540	640	250	600	700	250	540	640	250	600	700	250	118	218	672	180	280	672	118	218	672	180	280	672	118	218	672
200	540	740	350	600	800	350	540	740	350	600	800	350	118	318	772	180	380	772	118	318	772	180	380	772	118	318	772
300	540	840	450	635	935	450	540	840	450	635	935	450	118	418	872	215	515	872	118	418	872	215	515	872	118	418	872
400	540	940	550	635	1035	550	540	940	550	635	1035	550	118	518	972	215	615	972	118	518	972	215	615	972	118	518	972
500	540	1040	650	635	1135	650	540	1040	650	635	1135	650	118	618	1072	215	715	1072	118	618	1072	215	715	1072	118	618	1072
600	540	1140	750	675	1275	750	540	1140	750	675	1275	750	118	718	1172	255	855	1172	118	718	1172	255	855	1172	118	718	1172
800	540	1340	950	675	1475	950	540	1340	950	675	1475	950	118	918	1372	255	1055	1372	118	918	1372	255	1055	1372	118	918	1372



# Screw Jack with Hand Wheel



- 스크류 잭은 자체 셀프록킹이 가능하기 때문에 수동휠만 부착시키게 되면 수동의 운전이 가능하다.
- 수동휠의 회전력은 아래의 공식으로 값을 구할 수 있다.
- 추천하는바 힘안들이고 잭을 사용하려면 5 kg 이내의 회전력을 설정해야 한다.

$$\text{수동휠 회전력} = \frac{\text{입력된 토크}}{\text{수동휠 반지름}}$$

- 그래서 우리가 준비하는 것은 다양한 Size에 적합한 수동휠이다. 아래의 표에서 수동휠의 용적을 알아볼 수 있다.

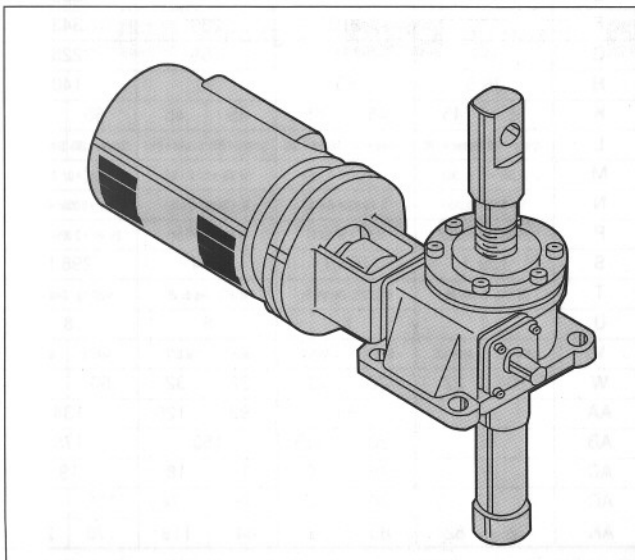
- Since Screw Jack has self-locking feature, manual operation is possible only with hand wheel.
- The rotation power of hand wheel can be obtained from following formula.
- 5 kg of rotation power is recommended for ease of use.
- Rotation power of Hand wheel = Input Torque ÷ Diameter of Hand Wheel
- Numerous size of hand wheel are available. Following table lists the capacity of hand wheel.

수동휠의 용적 (Table of Dimensions)

Size No.	Type 100			Type 200			Type 300			Type 400		
	R	K	AJ	R	K	AJ	R	K	AJ	R	K	AJ
SJ132	100	135	95	-	-	-	-	-	-	-	-	-
SJ144	100	140	100	200	210	115	-	-	-	-	-	-
SJ156	-	-	-	-	-	-	300	275	180	-	-	-
SJ166	-	-	-	-	-	-	300	285	190	450	290	195

\* The grip size for Type 100 only is 40.

# Screw Jack with Motor



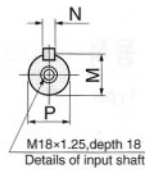
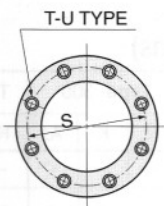
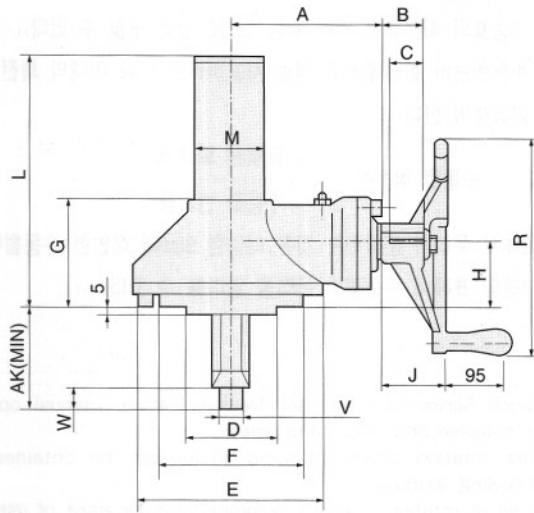
모터부착형 스크류 잭 (Screw Jack with Motor)

- 고효율 모터가 잭에 부착될 수 있다.
- 커플링을 하지 않고도 스크류잭은 사용가능하다.
- 스크류잭이 물체를 들어서 올리는 속도는 용도에 따라 다르기 때문에 필요에 따라 모터속도조절이 필수적이다.

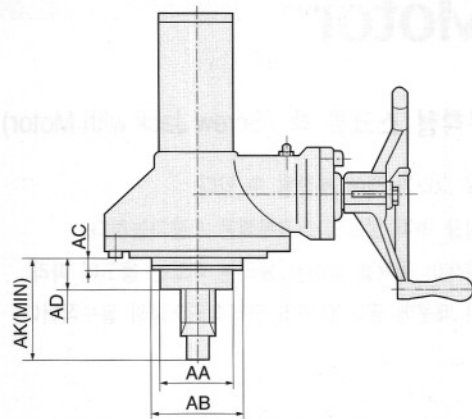
- High efficient motor can be attached to screw jack.
- Screw jack can be used without coupling.
- Since the speed of lifting object depends on the use of screw jack, the control of motor speed is necessary.

# Bevel Gear Type Screw Jack

보호키 없이 NO Protection Key



보호키 있게 with Protection Key



Size	Type 12	Type 18	Type 24
Symbol			
R	310	460	610
J	92	97	122

## 베벨 기어타입의 스크류잭 (Bevel Gear Type Screw Jack)

이 스크류잭은 베벨기어를 사용하는 수동에서 사용된다.

다음과 같은 특징이 있다.

1. 사용에 가벼울 뿐 아니라 밀도가 있어서 편리하다.
2. 베벨기어를 사용하기 때문에 고효율적이다.
3. 필요한 피스톤 작용을 할때 수동회전 속도가 빠르지 않다.

비록 가용 부하량이 아래의 표에 제시되어 있지만, 들어 올릴 수 있는 실제 부하량은 수동 휠의 직경에 따라 결정된다.

$$\text{수동휠 회전력} = \frac{\text{입력된 토크}}{\text{수동휠 반지름}}$$

This screw jack can be used in manual wheel Bevel Gear. Features are:

- It is convenient because of light weight and high density.
- Bevel gear produces high efficiency.
- Pistoning does not increase manual rotation speed.

Even though allowable load is listed in following table, actual lifting capacity depends on the diameter of hand wheel.

Rotation Power of Hand Wheel = Input Torque / Diameter of Hand Wheel

Item	Size No		BH-150		BH-170		BH-220		BH-300	
	Type		0	1	1	2	2	3	4	5
Permissible Load (Ton)			1	2.5	2.5	5	5	10	20	30
Lifter Screw Diameter (φ)			20	25	25	40	40	50	63	85
Lifter Screw Lead (mm)			4	5	5	8	8	10	12	16
Ratio			2.5		3		4.11		6	
Efficiency			0.27	0.26	0.26	0.27	0.27	0.26	0.23	0.23

코드번호를 지켜주기 바람  
 예) "BH-00-0" "사이즈 번호 BH-00 리프터 스크류 직경 20mmφ, 리드 4mm  
 Make sure of using right product Code number.  
 (EX)BH-00-0=Size number BH-00, Lifter screw diameter 20mmφ, Lead 4mm

## 치수 Dimensions

Size type	BH-150		BH-170		BH-220		BH-300	
	0	1	1	2	2	3	4	5
A	154		171		226		305	
B	60		60		60		60	
C	45		45		45		45	
D	95.2(+0/-0.05)		127(+0/-0.076)		152.4(+0/0.076)		177.8(+0/-0.075)	
E	-		-		-		386	
F	178		210		289		343	
G	122		135		155		225	
H	76.5		85		95		140	
K	35	45	45	45	45	45	65	75
L	Stroke+170	Stroke+170	Stroke+180	Stroke+180	Stroke+200	Stroke+210	Stroke+285	Stroke+275
M	31.56(+0/-0.136)		31.56(+0/-0.136)		31.56(+0/-0.136)		35.5(+0/-0.136)	
N	7(+0.030/-0.015)		7(+0.030/-0.015)		7(+0.030/-0.015)		10(+0.030/-0.015)	
P	28.56(+0/-0.015)		28.56(+0/-0.04)		28.56(+0/-0.04)		28.56(+0.009/-0.034)	
S	139.7		165.1		254		298.5	
T	M16*2, Depth 25		M20*2.5, Depth 25		M16*2, Depth 25		M20*2.5, Depth 31	
U	4		4		8		8	
V	M14*1.5	M18*1.5	M18*1.5	M25*2	M25*2	M32*2	M45*2	M60*2
W	20	22	22	32	32	32	50	62
AA	60		85		92	120	134	
AB	95		120	125	150		175	
AC	-		15	20	17	18	19	
AD	37		40	32	39	74	105	160
AK	72	82	85	77	84	119	170	235

# Worm Screw Jack System

## 연동운전시의 소요동력 Gearing Operation of Necessary Power

복수의 JACK을 연동시켜 사용할 경우는, 우측의 전달효율을 참고하여 소요동력을 결정하여 주십시오.

$$\text{소요동력} = \frac{\text{JACK 1대당 소요동력} \times \text{사용대수}}{\text{전달효율}}$$

Gearing Operation of Necessary Power  
When multiple jacks are used, Compute necessary power using right side of transfer efficiency table.

$$\text{Required Power} = \frac{\text{Required Power per jack} \times \text{Number of Jacks}}{\text{Transfer Efficiency}}$$

JACK 연동수 No. of Jacks	2대 2 Units	3대 3 Units	4대 4 Units	n대 n Units
전달효율 Transfer Efficiency	0.94	0.91	0.88	(0.97) <sup>n</sup>

• 상기의 계산에는 구동용 감속기, 축방향 변환용 Gear Box의 효율은 포함되어 있지 않으므로 참고할 필요가 있습니다.

## 허용입력축 토크 Input Torque

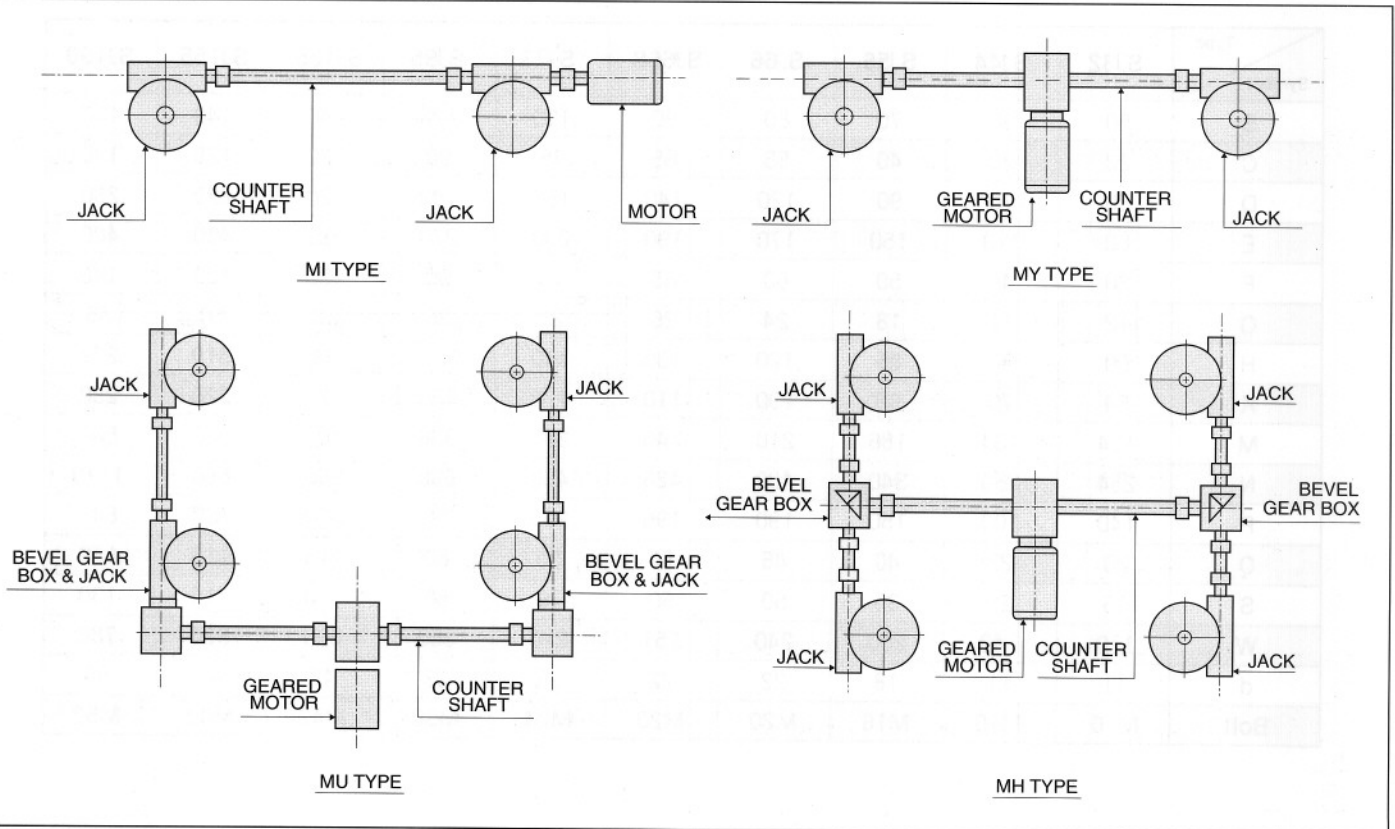
형번 Type Number	45	56	66	73	95	135
허용입력축 토크 Input Torque	4.3	7.4	13	30	60	85

kg-m

주: Jack 연동운동시 입력축 Torque가 상가치를 넘지 않는 범위내에서 사용하십시오.

Note: When multiple jacks are daisy chained, input torque should not exceed the data above table.

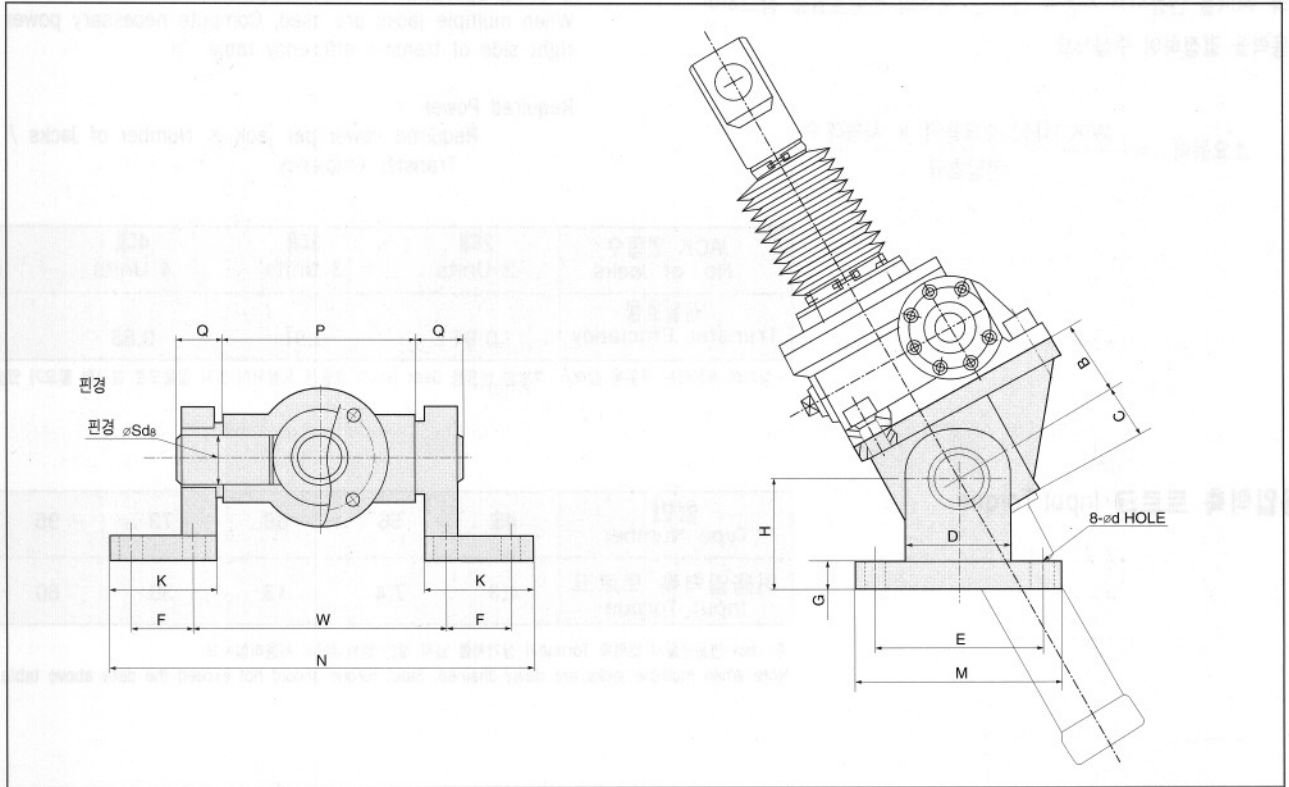
## SYSTEM 예 System Example



# Screw Jack with Trunnion Base

Tilting 장비나 Opening Dampers 등에는 트러니언 베이스의 사용을 권합니다.

Trunnion Base is recommended for use with tilting equipped and opening dampers.



Type	SJ32	SJ44	SJ56	SJ66	SJ66S	SJ73	SJ95	SJ135	SJ155	SJ190
Symbol										
B	50	60	70	80	90	100	120	140	140	160
C	22	20	40	55	65	75	90	120	120	140
D	50	70	90	120	140	160	180	220	220	260
E	80	110	150	170	190	230	270	320	400	400
F	30	40	50	60	65	70	90	120	120	140
G	12	12	18	24	26	28	36	50	50	55
H	60	80	85	120	130	140	170	200	310	270
K	54	70	90	100	110	120	150	220	220	250
M	104	134	186	210	240	280	330	400	500	500
N	254	250	340	400	426	460	600	960	860	1170
P	140	100	150	190	196	205	280	500	400	640
Q	20	22	40	45	50	50	80	115	115	150
S	15	25	35	50	60	70	80	110	110	130
W	170	140	200	240	251	270	360	620	520	780
d	11	11	18	22	22	26	33	45	45	55
Bolt	M10	M10	M16	M20	M20	M24	M30	M42	M42	M52



# Calculation Formula

잭의 형번은 장치, 기기가 필요로 하는 승강시의 하중과 승강속도 등 소요동력을 계산할 때에 각 형번의 사양의 검토하십시오.

## 계산식보기

예) 필요한 승강하중 : 3 TONf  
 필요한 승강속도 : 650mm / min

공식 1) 임의로 SJ56형번과 감속비를 H로 선택을 하고 n의 값을 구한다.

$$n = V \div C$$

V: 승강속도 mm / min n: 입력축 회전수 RPM

C: 속도계수(사양표 참조)

계수 : 1.33  $n = 650 / 1.33 = 488.7$  RPM

SJ56형번에서 허용할 수 있는 INPUT RPM 은 915 RPM이다.

따라서 n 은 받아들일 수 있다.

공식 2) 소요입력 토크 계산식

$$T = a \times w + b$$

T: 소요입력축 토크 kgf-m a: 토크 계수 (사양표 참조)

b: 입력축 무부하 토크 kgf-m

w: 승강하중 ton(사양표 참조)

계수: a = 1.0, b = 0.2

결과 :  $T = 1.0 \times 3 + 0.2 = 3.2$  kgf-m

공식 3) 소요동력 kw 계산식

$$P = (n \times T) / 974$$

P: 소요동력 kw n: 입력축 회전수 RPM

T: 소요입력축 토크 kgf-m

결과 :  $P = (488.7 \times 3.2) / 974 = 1.61$  kw

SJ56형번의 잭당 최대동력은 1.1kw 이므로 SJ56형번 감속비 H 는 부적합합니다. 따라서 잭 형번을 SJ66, 감속비는 H로 하여 재검토 하십시오.

When one computes lifting load, lifting speed, required power and so forth, Please note of type specifications.

## Calculation Example

Given: Required Lifting Load : 3 Ton

Required Lifting Speed : 650 mm/min

### Formula 1

We, for instance, use SJ56 screw jack type and H reduction ratio.

Then, we compute value n:

$$n = V \div C,$$

Where

V: Lifting Speed (mm/min)

n: Input Shaft RPM

C: Speed Coefficient (Refer specifications)

C = 1.33 for SJ56

$$n = 650 \div 1.33 = 488.7 \text{ RPM}$$

Since SJ56 type allows maximum 195 input RPM, n (= 488.7) is acceptable.

### Formula 2

Required Input Torque

$$T = a \times W + b,$$

Where

T: Required Input Shaft Torque (kgf-m)

a: Torque Coefficient (Refer Specification)

b: Input Shaft No Load Torque (kgf-m)

w: Lifting Load (Ton, Refer Specification)

$$a = 1.0, b = 0.2$$

$$\text{Therefore, } T = 1.8 \times 3 + 0.2 = 3.2 \text{ kgf-m}$$

### Formula 3

Required Power (kw)

$$P = (n \times T) \div 974,$$

Where

p: Required Power (kw)

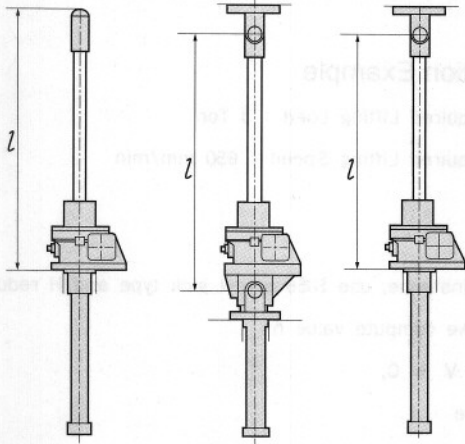
n: Input Shaft RPM

T: Required Input Shaft Torque (kgf-m)

$$P = (488.7 \times 3.2) \div 974 = 1.61 \text{ KW}$$

Since the required power of SJ56 is 1.1kw, the reduction ratio H is not appropriate in this case. Therefore, one needs to compute required power using H of SJ66.

# Formula for Buckling Load



## 좌굴하중의 계산식

$$\text{계수 } a = 1.00 \quad b = 0.3 \quad c = 1.25$$

$$n = 650 \div 1.25 = 520 \text{RPM}$$

$$T = 1.00 \times 3 + 0.3 = 3.3 \text{kgf-m}$$

$$p = (520 \times 3.3) \div 974 = 1.75 \text{kw}$$

재검토: SJ66의 최대동력은 1.8kw이므로 채용할 수 있습니다.

SJ66 Type:

$$a = 1.0, b = 0.3, c = 1.25$$

$$n = 650 \div 1.25 = 520 \text{RPM}$$

$$T = (1.0 \times 3) + 0.3 = 3.3 \text{kgf-m}$$

$$p = (520 \times 3.3) \div 974 = 1.75 \text{kw}$$

Since the maximum power of SJ66 is 1.8kw, it can be used.

잭의 나사축에 미치는 좌굴하중은 나사축경과 행정 (Stroke)에 따라 허용치수가 결정됩니다. 또 잭 및 나사축단의 취부상태에 따라서도 허용치수가 변합니다.

$$P_{cr} = n\pi^2 E(k/l)^2 \cdot A \cdot \alpha \text{kgf}$$

n : 축단지지 계수 잭고정-축단자유 : n = 1/4

잭지지-축단지지 : n = 1

잭고정-축단지지 : n = 2

E : 종탄성 계수  $2.1 \times 10^4 \text{ kgf/mm}^2$

$d_1$  : 나사곡경 SJ32 : 16

SJ44 : 20

SJ56 : 32

SJ66S : 45.5

SJ73 : 50.5

SJ95 : 68

SJ135 : 101

SJ155 : 115

SJ190 : 129

K : 최소2차반경  $K = d_1 / 4$

l : 축의 지지길이 (mm)

A : 나사축의 단면적  $A = \pi(d_1)^2 / 4$

$\alpha$  : 안전계수  $\alpha = 0.25$

Buckling load of screw jack is determined by both shaft length and stroke.

Also, end fitting of shaft affects the buckling load capacity.

$$P_{cr} = n\pi^2 E(k/l)^2 \cdot A \cdot \alpha \text{kgf}$$

where,

n : Shaft end support

Jack fixed & Shaft End Free- : = 1/4

Jack supported & Shaft End Supported : 1

Jack fixed & Shaft End Supported : 2

E :  $2.1 \times 10^4 \text{ kgf/mm}^2$

$d_1$  : Screw Curvature

SJ32 : 16

SJ44 : 20

SJ56 : 32

SJ66 : 39.5

SJ66S : 45.5

SJ73 : 50.5

SJ95 : 68

SJ135 : 101

SJ155 : 115

SJ190 : 129

K : Minimal Secondary Diameter =  $d_1 / 4$

l : Shaft Support Length (mm)

A : Shaft Cross-Sectional Area  $A = \pi(d_1)^2 / 4$

$\alpha$  : Safety Coefficient = 0.25

# Formula for Overhang Load

잭의 입력축과 동력원과의 연결에 풀리(Pulley)나 스프라게크 (Sprocket), 기어 등을 사용하면 입력축에 Overhang 하중이 걸립니다.

사양표를 참조하여 허용치 이내에 되도록 사용하십시오.

When one uses pulley, sprocket or gear between input shaft and power source, overhang load occurs.

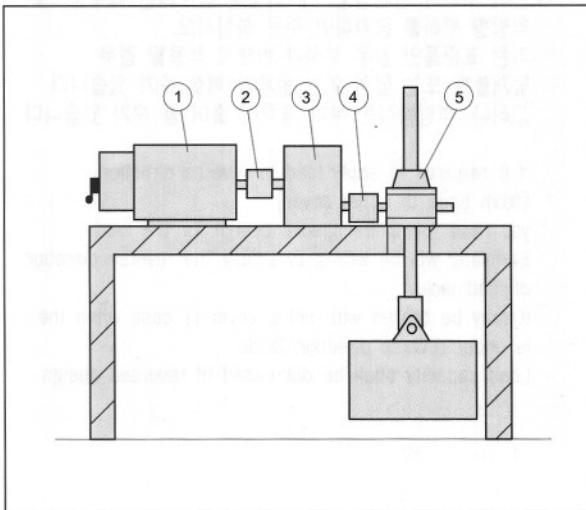
Please make sure that the overhang load will be within specification.

$$L_r = \frac{T}{R} \cdot f$$

L<sub>r</sub> : Overhang 하중 (kgf) (Overhang Load / kgf)  
 T : 입력축 Torque (kgf-m) (Input Shaft Torque/kgf-m)  
 R : Pulley Sprocket 등의 반경 (Diameter of pulley Sprocket)  
 f : Overhang 계수 (Overhang Coefficient)  
 Pulley : 1 Gear : 1.25

## About Brake

기본배치도  
Basic Layout



1. 브레이크가 부착된 모터
2. 모터측 카플링
3. 중간감속기
4. 잭측카플링
5. 잭

- 1: Motor with brake
- 2: Motor side coupling
- 3: Intermediate Speed reducer
- 4: Jack Side Coupling
- 5: Jack

잭의 운동을 정확히 정지시키기 위해서는 브레이크가 필요합니다. 스크류잭은 자동조임장치가 작용하기 때문에 브레이크가 필요없는 경우가 있습니다만 고정밀의 정확한 치수동작이나 정지시의 하중유지를 확실하게 하기 위해서는 브레이크를 설치하십시오.

볼 스크류 잭은 극히 효율이 높은 반면 자동조임 장치가 작동되지 않기 때문에 브레이크 장치가 반드시 필요합니다.

볼 스크류 잭을 정지시켜 놓는 경우 항상 유지 토오르크를 상회하는 브레이크 토오르크를 입력축에 작용시켜 놓는 것이 필요합니다.

잭을 사용한 직선운동은 구동계의 브레이크를 사용하여 정지시키는 경우 전원을 끊고나서 몇 mm 내에 정지시키는지에 따라서 정지에 요구 되는 시간 계산이 가능합니다. 또한 정지시간과 구동계 회전체의 GD<sup>2</sup> 로 부터 필요한 브레이크 토오르크가 계산됩니다. 그리고 볼 스크류 잭의 경우 정지후에 하중을 지지하는 유지 토오르크가 필요합니다.

Brakes are necessary for accurately stopping the motion of jacks. Screw jacks do not require the use of brakes in some cases because they are self-locking. However,brakes must be used for high-accuracy operation and for positive retention of loads at the time of stop.

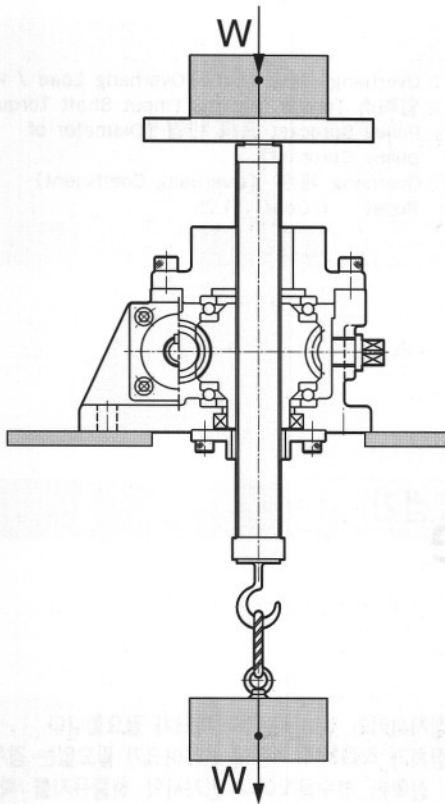
Ball screw jacks have very high efficiency but are not self-locking, so motors with brakes or other braking devices are indispensable for them.

When linear motion effected using a jack is to be stopped by brakes in the driving system, the time required for stop is calculated according to the number of millimeters within the motion must be stopped after the power supply is turned off.

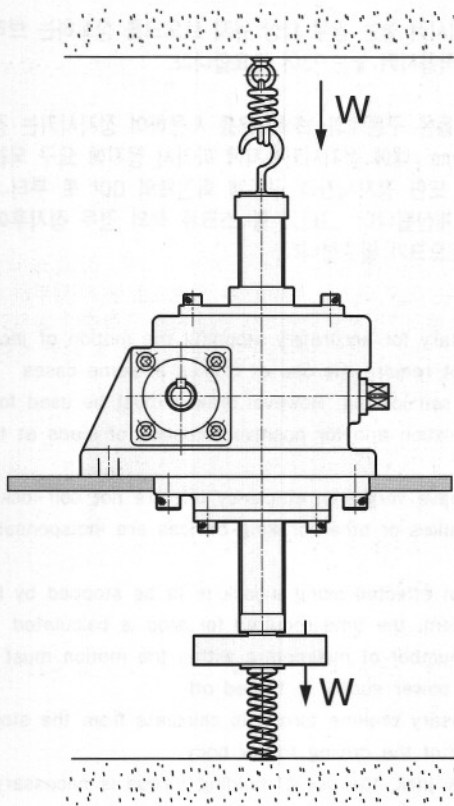
Further, the necessary braking torque is calculate from the stop time and the CD<sup>2</sup> of the driving rotary body.

In case of a screw jack, the use of holding torque is necessary for supporting the load after stopping.

# Directions of Load



[정방향식]



[역방향식]

## 부하/하중 방향 정렬의 지침 (Directions of Load)

- 부하의 방향은 기본적으로 Jack Case의 상부에서 바닥 방향으로 힘을 받도록 되어 있습니다.

Load in basically should be applied in direction from upper cover to the base to maximize full load capacity.

- 만약 부하가 반대방향으로 작용될 경우에는 특수형으로 역방향 부하를 명기하여 주문 하십시오.  
기존 표준품인 경우 부하가 반대로 적용될 경우 덮개볼트 또는 덮개 또는 몸체가 깨질 수가 있습니다.  
그러나, 역방향식은 부하 능력이 줄어 들 수가 있습니다.

If it requires to apply load in reverse direction (from base to upper cover) you have to inquire special design for the load. Samyang will be willing to supply the reverse direction of load jacks.

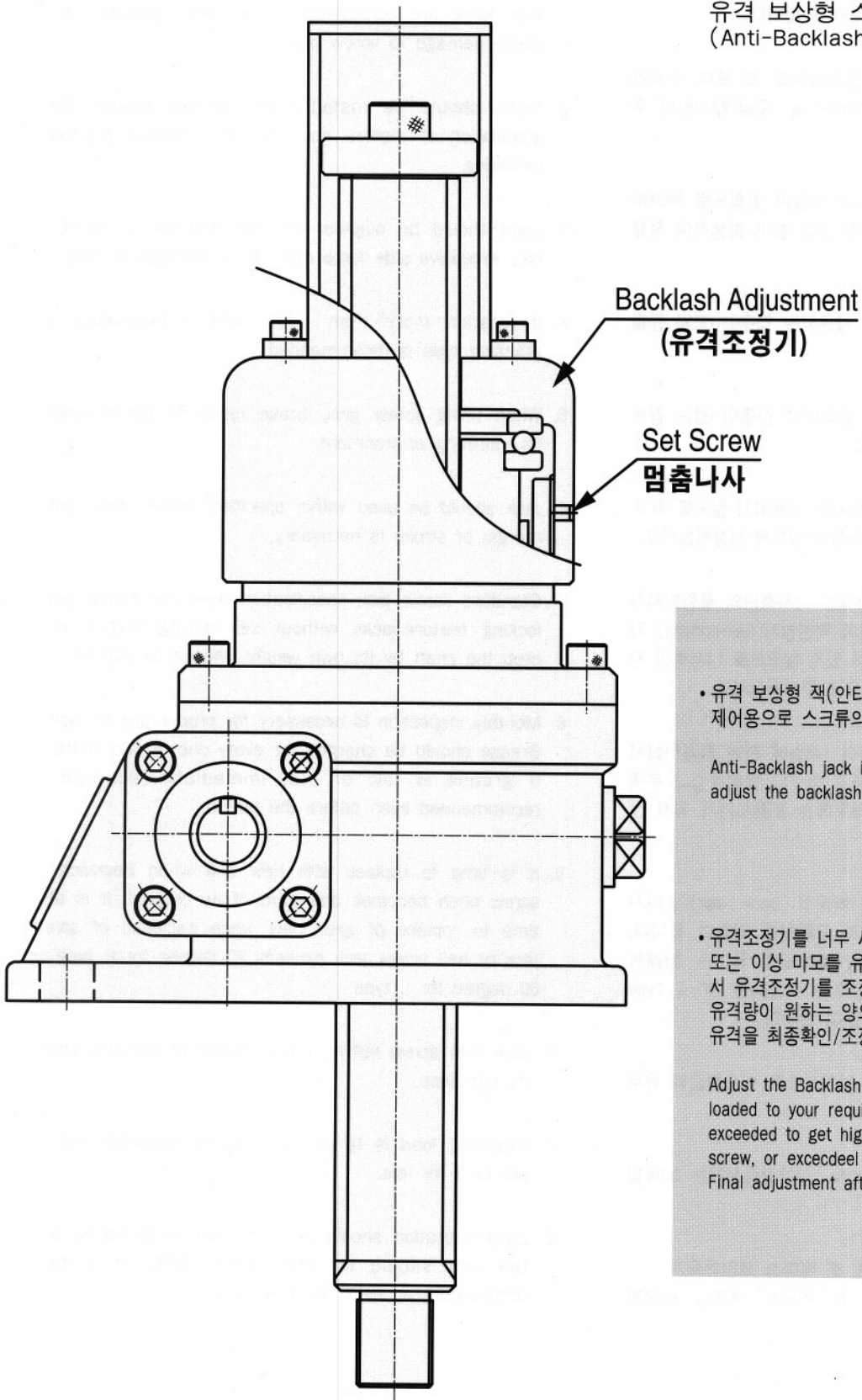
It may be broken with bolts, cover or case when the jack is under reverse direction loads.

Load capacity shall be decreased of reversed design.



# Anti-Backlash Screw Jack

유격 보상형 스크류잭  
(Anti-Backlash Screw Jack)



- 유격 보상형 잭(안티 백래시 잭-Anti Backlash Jack)은 위치 제어용으로 스크류의 유격을 맞출수가 있습니다.

Anti-Backlash jack is for position controllable system to adjust the backlash of screw.

- 유격조정기를 너무 세게 조이면 과다에압이 걸려 작동불능 또는 이상 마모를 유발할 수 있으므로 초기 무부하 상태에서 유격조정기를 조정하여 원활하게 입력축이 회전되면서 유격량이 원하는 양으로 되게끔 조절한 후 설치, 시운전시에 유격을 최종확인/조정하십시오.

Adjust the Backlash Adjustment for the first with free loaded to your requirements. Do not tighten the bolt exceeded to get high pre-stress may cause early wear of screw, or exceeded friction of torque.  
Final adjustment after installing the jack, during test run.

# Cautions

1. 분류번호 선정시에는 모터용량, 승강하중, 나사축 속도, 허용좌굴하중, 허용횡하중 등에 유의하십시오. 카다로그 범위 외에서 선정하면 잭뿐만 아니라 장치에도 손상을 줍니다.
  2. 설치시는 강성이 높은 평판대에 고정하십시오. 또 모터, 감속기 등의 취부에는 적절하게 센터링 (Centering: 중심내기)하여 주십시오.
  3. 잭에 가해지는 하중은 나사축 중심과 동일한 방향으로 배려하고 편심하중이 잭에 가해지면 과대한 굽힘 힘이 발생하여 잭을 손상시킵니다.
  4. 입력회전수가 1,000 RPM 이상으로 사용되는 경우는 오일 윤활식이 적용됩니다.
  5. 스크류 잭 (Screw Jack) 사용시에 충격이나 진동이 있는 경우에는 브레이크 사용을 검토하십시오.
  6. Jack은 정해진 행정(Stroke) 범위 밖에서는 사용되지 않도록 하고, 또 사용되는 행정(Stroke)에 대하여 여유가 있도록 선정하십시오.
  7. 스크류 잭 (Screw Jack)의 표준 사양에는 나사축단의 풀림방지가 되어 있지 않습니다. 스크류잭과 같이 역전방지(Self-Locking) 기능이 없는 잭에서는 풀림방지가 되어 있지 않으므로 나사축이 자중에 의해 빠져 떨어지는 것도 있으므로 주의하십시오.
  8. 잭을 항상 정상으로 사용하기 위하여 1개월에 한번 점검하십시오. 또 1~2년마다 윤활유를 교환하고 더구나 윤활유량이 부족하거나, 윤활유가 노화되어 있는 경우에는 교환시기가 되지 않았어도 보급 또는 교환하십시오.
  9. 잭 사용중에 스크류 잭의 나사부분 백래쉬 (Back Lash)가 나사 피치의 1/3 을 초월할 때가 신제품과 교환하는 기준이 됩니다. 또 기어부에 관하여는 스크류 잭, 볼스크류 잭이든 백래쉬 (Back Lash)가 입력축 회전각 환산으로 H Type은 20°, L Type은 60° 을 초과한 때가 교환의 기준이 됩니다.
  10. 스크류 너트가 부착된 잭의 경우 정기적으로 느슨해짐의 유무를 점검하여 주십시오.
  11. 과부하 용량은 동작하중시에는 10%, 정지하중시에는 30%입니다.
  12. 1일당의 총 운전시간은 3시간이내, 또 케이스 표면온도가 「주변온도 + 50°C 이내, 동시에 최고온도는 130°C」 비슷한 곳에 사용하십시오.
1. When one selects type, motor capacity, factors like lifting load, shaft speed, buckling load and allowable side force are considered. Outer range selection may cause damage to screw jack.
  2. Jacks should be installed on durable board. Also, installation of motors and reducers requires a proper centering.
  3. Load should be aligned with the direction of shaft. If not, excessive side force may cause damage to jack.
  4. If rotation more than 1,000 RPM is necessary, oil greasing type is recommended.
  5. When using screw jack, brake model is recommended for vibrating environment.
  6. Jack should be used within specified stroke, Also, some margin of stroke is necessary.
  7. Standard screw jack specification does not include self-locking feature. Jacks without self-locking feature may drop the shaft by its own weight. Please be careful.
  8. Monthly inspection is necessary for proper use of jack. Grease should be charged for every one or two years. If grease is low or old, immediate recharge is recommended even before the period.
  9. It is time to replace with new one when backlash of screw pitch becomes one third of its original. It is also time to replace of gear part when backlash of screw jack or ball screw jack exceeds 20 degree for H type or 60 degree for L type.
  10. Jack with screw nut is recommended to regularly check its tightness.
  11. Overhang load is 10 per cent during operation and 30 per cent for idle.
  12. Daily operation should be less than three hours, and the unit should be kept within 50°C of surface temperature or 150°C for cold time.