

CREATIVE AND INNOVATIVE

AIR RUNNER SERIES

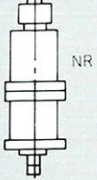
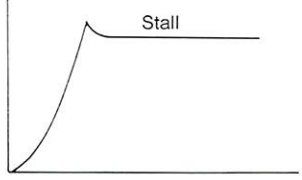

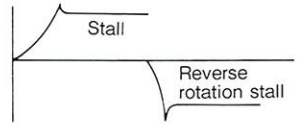
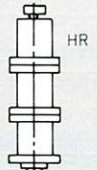
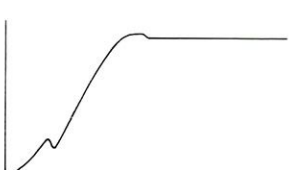
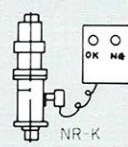
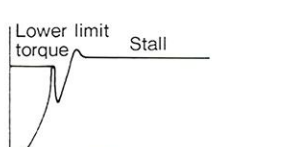
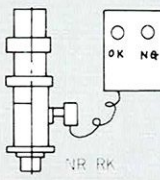
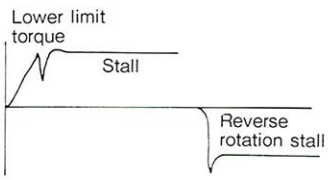
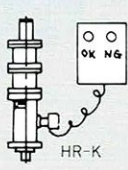
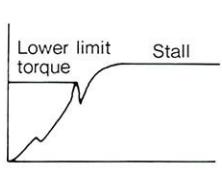
FOR SCREW TIGHTENING

AIR
POWER
MOTOR-UNIT
'88-11



技研 GIKEN

Models of nut runners and their tightening methods

Model of nut runner		Features and torque accuracy (approximate values)	Construction	Torque element and waveform
1	One-speed stall nut runner NR-8S~NR-200	1. Light, compact and inexpensive 2. $\pm 10\% \sim \pm 15\%$		
2	One-speed, dual-rotation stall nut runner NR-8SR~NR-200R	1. Forward and reverse rotation		
3	Two-speed stall nut runner HR-10S~HR-500	1. Light and compact 2. Low energy consumption 3. Low inertia 4. $\pm 6\% \sim \pm 10\%$		
4	One-speed stall nut runner with lower limit torque checking unit NR-K	1. Lower limit torque check 2. Tightening lamp indication 3. $\pm 10\% \sim \pm 15\%$		
5	One-speed, dual-rotation stall nut runner with lower limit torque checking unit NR-RK	1. Lower limit torque check 2. Forward and reverse rotation 3. Tightening lamp indication		
6	Two-speed stall nut runner with lower limit torque checking unit HR-K HR-T	1. Lower limit torque check 2. Tightening lamp indication 3. $\pm 6\% \sim \pm 10\%$		

NR type nut runner

(stall type)

The NR type stall nut runner is an economical motor unit developed through our extensive experience in production of pneumatic assembly equipment.

Precautions during use

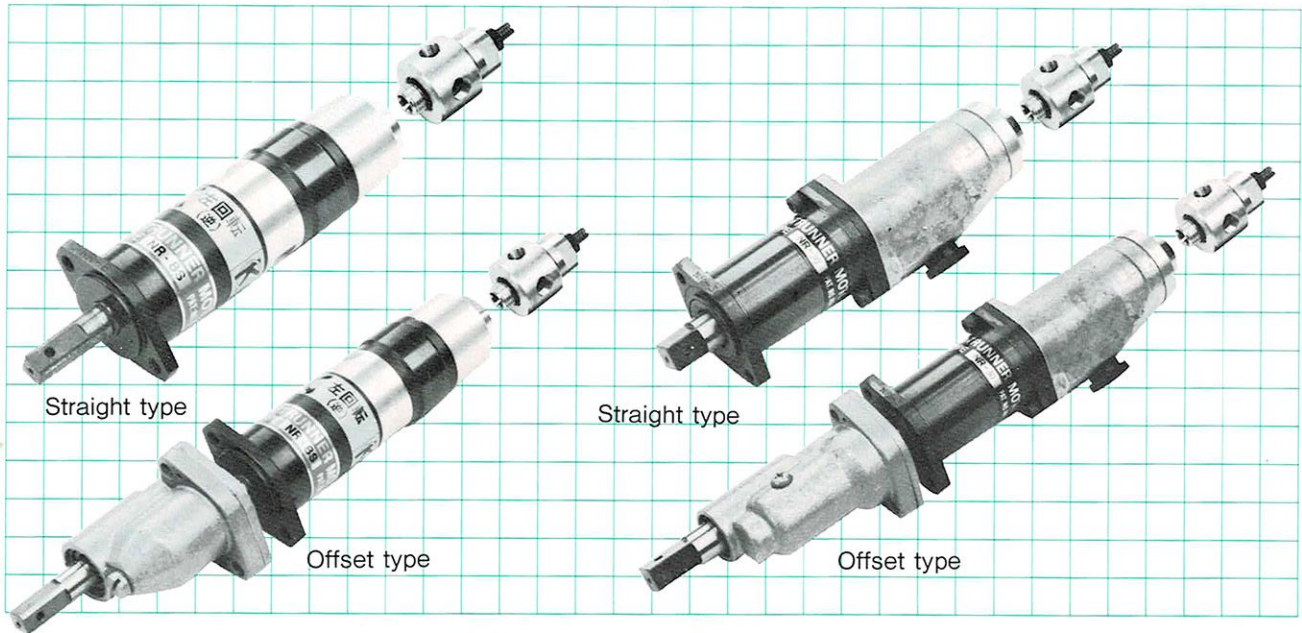
1. The pressure and capacity of the air supply must be constant and optimal at all times. Connect a reducing valve (regulator) where nut runners are operated to prevent air pressure from changing.
2. Be sure to use an air filter to supply clean air. Foreign matter may adversely affect rotation and may cause abrasion and other potential damage.
3. Sufficiently lubricate the pneumatic equipment. Insufficient lubrication may cause uneven or reduced torque. An oiler should be installed in the piping.

Features of the nut runner motor unit

1. This unit has been designed to deliver a high output of torque. The motor mechanism ensures even tightening torque and high reliability.
2. The number of axes can be increased almost infinitely using a multi-system to ensure highly efficient assembly.
3. A reduction mechanism can be employed to reduce speed without the danger of impact. This ensures low abrasion of the mechanism and protection of products in assembly.
4. No impact is directly applied to screws. This prevents them from being deformed or damaged.
5. The operator can operate the runner without fatigue, because of its minimum vibration and impact.
6. Torque adjustment is easy. It is possible to tighten screws at even torque within a specified period.
7. A multi-system can easily be incorporated. This allows the machine, including these units, to remain compact and easily maintained.
8. Low noise
9. The tightening torque can be checked with a lower limit torque checking attachment.
10. Oil in exhaust mist can be recovered by connecting the exhaust port to the exhaust cleaner via a hose.

Performance

Air regulator (optional)



The offset type is ideal for tightening bolts spaced at smaller pitches.

(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m³/min)	Hose connection screw size (PF)	Weight (kg)	
					Straight type	Offset type
NR-8S (L)	520	0.75	0.25	1/4"	0.6	1.2
NR-13S(L)	290	1.4				
NR-24 (L)	300	2.5	0.33		1.0	1.5
NR-30 (L)	230	3.0			1.1	1.7
NR-43 (L)	390	4.1	0.65	3/8"	2.0	2.7
NR-52 (L)	320	4.9				2.9
NR-65 (L)	260	6.1				
NR-75 (L)	230	7.0			0.90	3/8"
NR-88 (L)	260	8.5				
NR-100 (L)	220	10.0				
NR-130 (L)	180	12.5	4.1	6.0		
NR-160 (L)	145	15.2				
NR-200 (L)	115	19.5				

*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

*When the air pressure is 5 kg/cm², the torque values increase by approximately 25% and the speed increases by approximately 12%.

Notes:

- If you wish to use a unit with a counterclockwise rotation motor, please specify.
- The no-load speed may drop depending on the piping conditions, usage and torque adjustment.
- The air pressure should be set at a constant value at all times to maintain the standard tightening torque.
- The standard tightening torque is adjustable.
- The torque may differ depending on workpiece conditions.
- The air consumption values listed above are necessary for each axis. The actual values, however, are generally smaller than the listed values.

● Straight type

NR-8S~NR-75 NR-88~NR-200

(Unit: mm)

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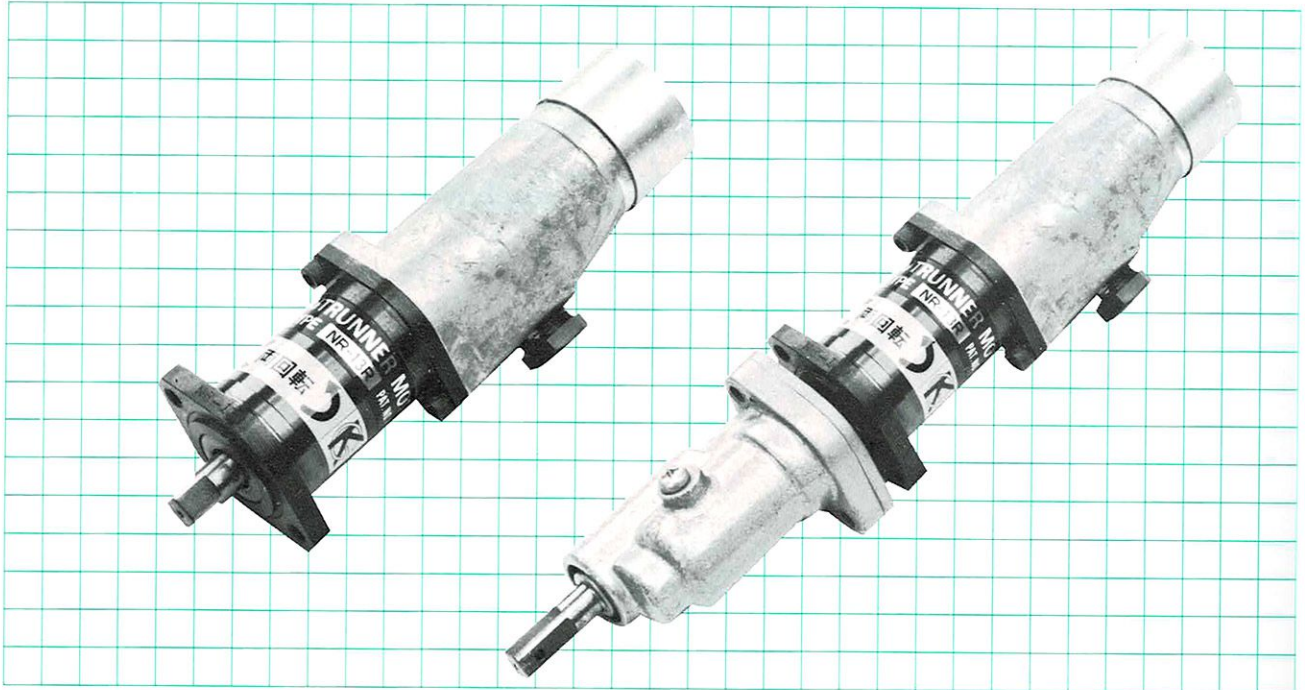
● Offset type (Model L)

NR-8LS~NR-75L NR-88L~NR-200L

(Unit: mm)

Model number	A	B ϕ	C ϕ	D ϕ	E	F	G ϕ	H	I	J	K	L	M	N	O	P	Q	R	S ϕ	T	ℓ	EX																	
NR-8SL	9.52	11.5	36	32	2-M6	7.5	3.2	89	21	32	2	223.5	36	45	57	22	20	13.5	3		126.5	PT ³ / ₈																	
NR-13SL																																							
NR-24L	12.7	16.5	42	34		9	4.2	117	24	36		285	43	51	64	25	18.75	14.5	4		160	PT ³ / ₈																	
NR-30L																																							
NR-43L	15.87	19.5	51	44	2-M8	9.5		132	26	39.5	3	341	52	62	76	30	24	17.5		8	201	PT ¹ / ₂																	
NR-52L																																							
NR-65L																																							
NR-75L							5.2		118					327					30																				
NR-88L																																							
NR-100L	19.05	24	64	58	3-M8	10.5		132	31	45.5		389	65	76	90	35	28	20	5		249	PT ¹ / ₂																	
NR-130L																																							
NR-160L																																							
NR-200L			70					156				413	71	82	96		35	24																					

NR-R type reversible nut runner (stall type)



The NR-R type reversible stall nut runner, a modified version of the NR type nut runner, is capable of rotating in both directions.

Precautions during use

1. Be sure to use a reducing valve or a speed controller (by the meter-in method) in the clockwise rotation air supply circuit for torque adjustment.
2. Air is exhausted from the counterclockwise rotation air supply circuit during clockwise rotation. On the contrary, air is exhausted from the clockwise rotation air supply circuit during counterclockwise rotation. Therefore, pay special attention to the exhaustion setting. If the exhaustion setting is improper, torque and speed may drop.

Features and applications

1. The nut runner can be rotated clockwise and counterclockwise by switching the air supply circuits.
2. Bolt installation is possible without damaging thread. This feature is ideal for installation of stud bolts.
3. A single nut runner is capable of clamping and unclamping pallets.
4. The speed is approximately 75% of the NR type, due to use of a dual-rotation motor.
5. The torque is approximately 65% of the NR type, due to use of a dual-rotation motor.

■Performance

(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m ³ /min)	Hose connection screw size (PT)	Weight (kg)	
					Straight type	Offset type
NR-8R (L)	820	0.5	0.33	2-1/8	1.4	1.9
NR-13R (L)	430	0.95				
NR-24R (L)	240	1.6			1.5	2.1
NR-30R (L)	185	1.9				
NR-43R (L)	310	2.6	0.65	2-1/4	2.5	3.2
NR-52R (L)	250	3.1				3.4
NR-65R (L)	210	3.8				
NR-75R (L)	185	4.4				
NR-88R (L)	210	5.3	0.90	2-3/8	4.2	5.3
NR-100R(L)	175	6.3				
NR-130R(L)	145	7.8				
NR-160R(L)	115	9.5			4.4	6.3
NR-200R(L)	90	12.2				

*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

*When the air pressure is 5 kg/cm², the torque values increase by approximately 25% and the speed increases by approximately 12%.

■Performance

(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m ³ /min)	Hose connection screw size (PT)	Weight (kg)	
					Straight type	Offset type
NR-8SR (L)	420	0.5	0.25	2-1/8	1.1	1.7
NR-13SR(L)	230	0.95				

*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

*When the air pressure is 5 kg/cm², the torque values increase by approximately 25% and the speed increases by approximately 12%.

● Straight type

NR-8R~NR-75R NR-38R~NR-200R

(Unit: mm)

[illegible]

● Offset type

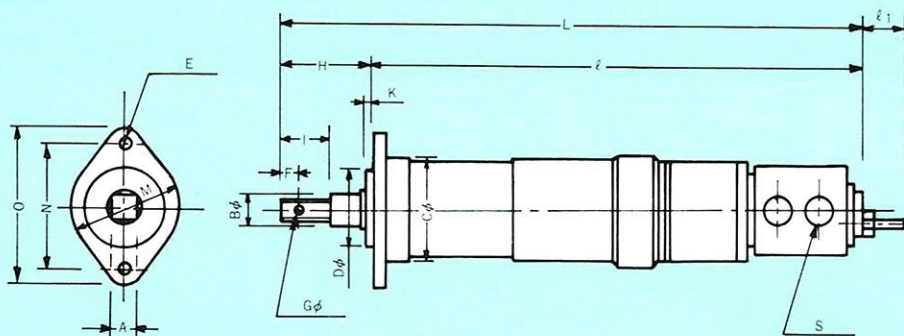
NR-8RL~NR-75RL NR-88RL~NR-200RL

(Unit: mm)

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■Major dimensions (with optional regulator)

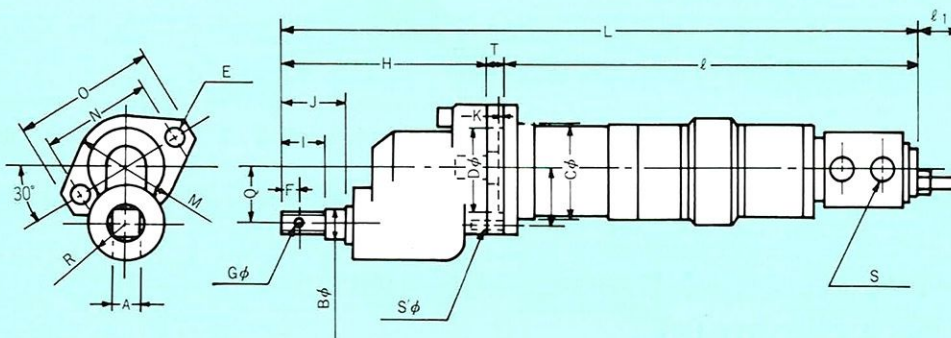
- Straight type



(Unit: mm)

Model number	A	B ϕ	C ϕ	D ϕ	E	F	G ϕ	H	I	K	L	M	N	O	ℓ	ℓ_1	S
NR-8SR	9.52	11.5	36	32	2-M6	7.5	3.2	35	21	2	210	36	45	57	175	10	2-PT. $\frac{1}{8}$
NR-13SR																	

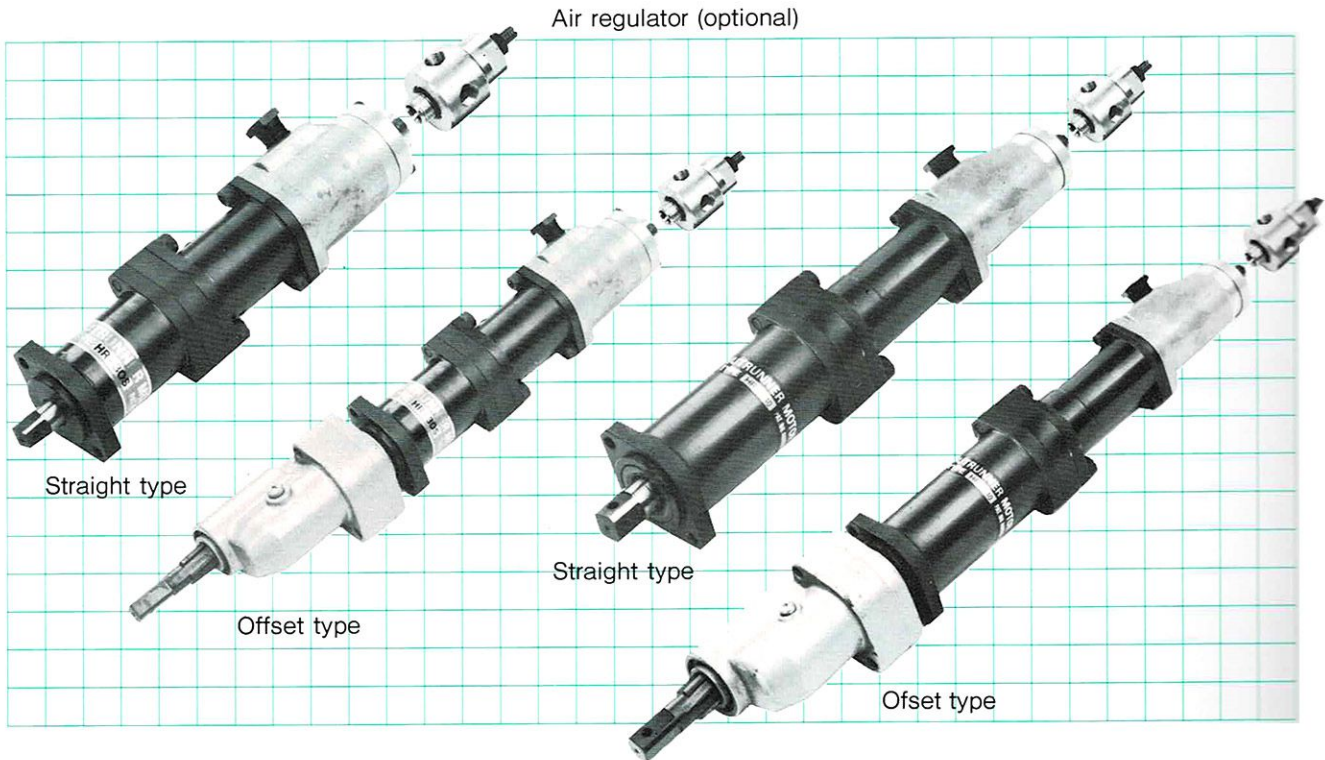
- Offset type (Model L)



(Unit: mm)

Model number	A	B ϕ	C ϕ	D ϕ	E	F	G ϕ	H	I	J	K	L	M	N	O	P	Q	R	S' ϕ	T	ℓ	S	ℓ_1
NR-8SRL	9.52	11.5	36	32	2-M6	7.5	3.2	89	21	32	2	272	36	45	57	30	20	13.5	3	8	175	2-PT $\frac{1}{8}$	10
NR-13SRL																							

HR type nut runner (two-speed runner)



- Utility model No. 1305778 Rotation speed change unit
- Utility model pending 1. Two-speed mechanism
2. Air supply adjustment unit
- Design registration No. 460520 (Resemblance Nos. 1 and 2)

With the HR type nut runner, the inertia at the time of stall is reduced to a minimum.

The HR-series has an automatic two-speed unit. The runner rotates at high speed until the seating surface of the screw head reaches the mating surface. Once the screw head reaches the mating surface, low speed is selected automatically and immediately. In other words, the screw is tightened at high speed and low torque when tightening resistance is low, and at low speed and high torque when tightening resistance is high. To accomplish this operation properly, inertia, which may change output torque, is minimized. The result is accurate and even tightening torque.

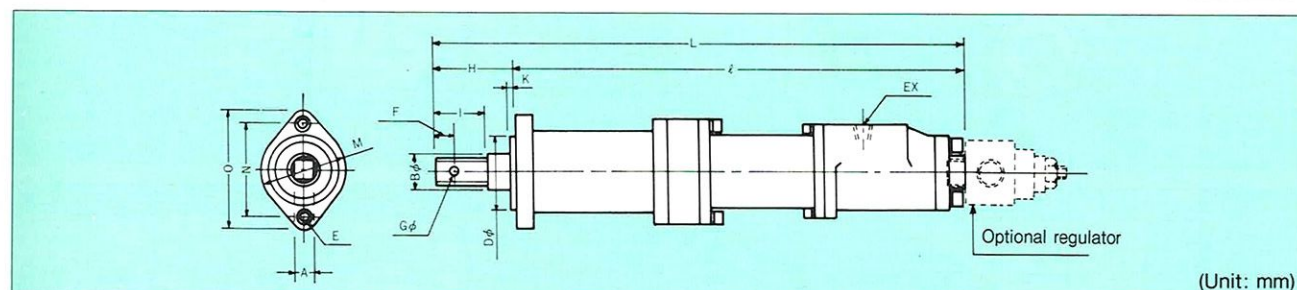
Features

1. The automatic two-speed change type ensures efficient operation and highly accurate torque.
2. Inertia of the tightening mechanism is minimized to ensure even tightening torque.
3. The air consumption is minimal. Noise is low (75 phones) due to use of a silencer.
4. The automatic two-speed unit incorporates a reliable, trouble-free mechanism to reduce the speed. The construction is simplified for easy operation.
5. Low in weight, yet high in output. Moreover, maintenance is easy.
6. Undesirable self-locking, which may otherwise be caused, is completely eliminated by means of a lead cushion joint.

Miniature S Series (HR-10S, HR-15S, HR-30S, HR-50S, HR-80S)

(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m³/min)	Weight (kg)	Hose connection screw size (PF)
HR-10S	Approx. 540	1.1	0.15	1.2	¼"
HR-15S	Approx. 540	2.4	0.2		
HR-30S	Approx. 540	3.0			
HR-50S	Approx. 430	5.0	0.25	1.5	
HR-80S	Approx. 290	8.0		2.2	

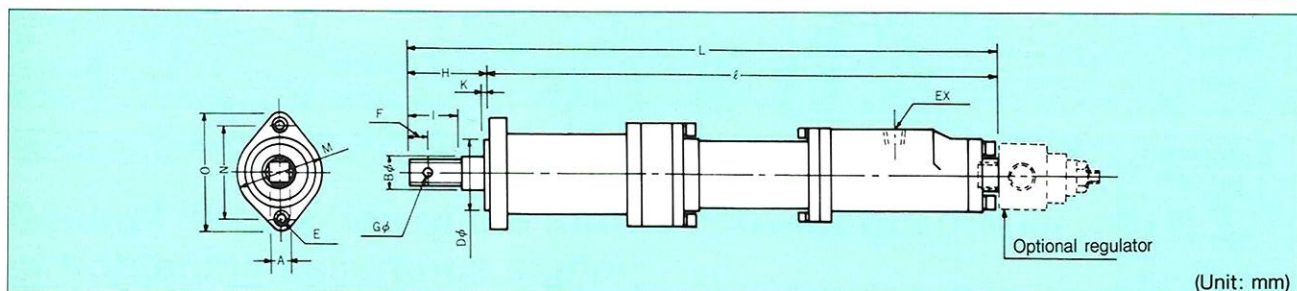


型式番号	A	Bφ	Dφ	E	F	Gφ	H	I	K	L	M	N	O	ℓ	EK
HR-10S	9.52	12	32	2-M6	5	3.2	21	11	3	210	39	45	57	189	PT. 1/4
HR-15S										216				195	
HR-30S										240				214	
HR-50S	12.7	17	34	2-M8	8	4.2	26	16		248	54	62	76	217	
HR-80S	15.87	19	44		9	5.2	31	18							

[HR-110 and HR-140]

(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m ³ /min)	Weight (kg)	Hose connection screw size (PF)
HR-110	Approx. 300	10.5	0.33	Approx. 3.4	1/4"
HR-140	Approx. 230	13.0			



型式番号	A	Bφ	Cφ	E	F	Gφ	H	I	K	L	M	N	O	ℓ	EX
HR-110	15.87	19	44	2-M8	9	5.2	31	18	3	341	54	62	76	310	PT. 3/8
HR-140										352				321	

*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

*When the air pressure is 5 kg/cm², the torque values increase by approximately 25% and the speed increases by approximately 12%.

Notes:

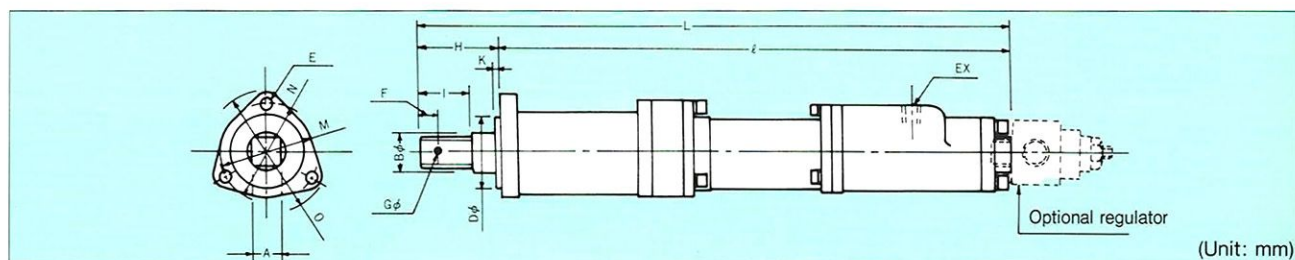
- If you wish to use a unit with a counterclockwise rotation motor, please specify.
- The no-load speed may drop depending on the piping conditions, usage and torque adjustment.
- The air pressure should be set at a constant value at all times to maintain the standard tightening torque.
- The standard tightening torque is adjustable.
- The torque may differ depending on workpiece conditions.
- The air consumption values listed above are necessary for each axis. The actual values, however, are generally smaller than the listed values.

■ Specifications are subject to change without notice.

■Performance and major dimensions(HR-160,HR-200,HR-240,HR-270)

(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m³/min)	Weight (kg)	Hose connection screw size (PF)	
HR-160	Approx. 320	16.0	0.65	Approx. 5.0	3/8"	
HR-200	Approx. 260	20.0				
HR-240	Approx. 220	23.0		Approx. 5.5		
HR-270	Approx. 180	28.0				

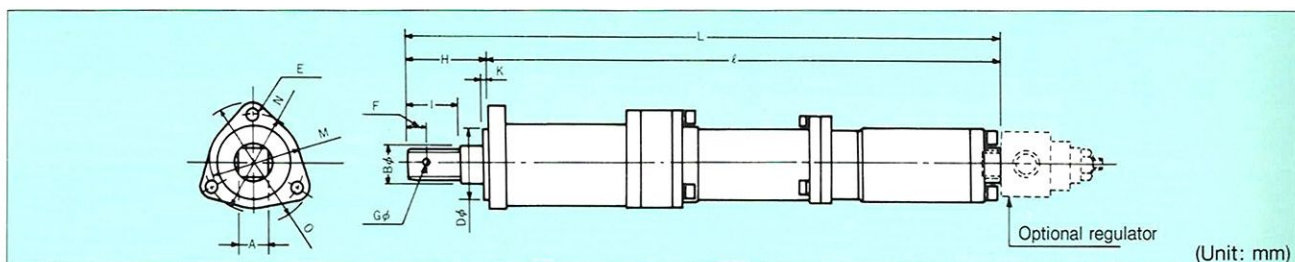


Model number	A	Bφ	Dφ	E	F	Gφ	H	I	K	L	M	N	O	ℓ	EX
HR-160	19.05	24	50	3-M8	13	5.2	39	25	3	398	62	68	82	359	PT. $\frac{1}{2}$
HR-200															
HR-240															
HR-270															

[HR-300, HR-340, HR-420, HR-500, HR-700]

(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m ³ /min)	Weight (kg)	Hose connection screw size (PF)
HR-300	Approx. 260	30.0	0.9	Approx. 10.2	$\frac{3}{8}$ "
HR-340	Approx. 200	34.0			
HR-420	Approx. 180	42.5		Approx. 10.6	
HR-500	Approx. 145	51.0			
HR-700	Approx. 140	79.0		Approx. 13	

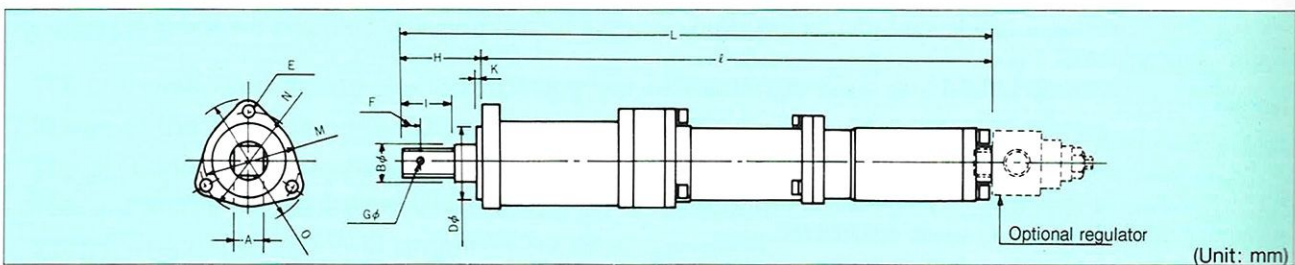


Model number	A	Bφ	Dφ	E	F	Gφ	H	I	K	L	M	N	O	ℓ
HR-300	26	32	58	3-M10	14.5	6.3	48	30	4	496	78	82	102	448
HR-340														
HR-420														
HR-500														
HR-700	26	32	58	3-M10	14.5	6.3	48	30	4	497	115	82	140	449

[HR-1200]

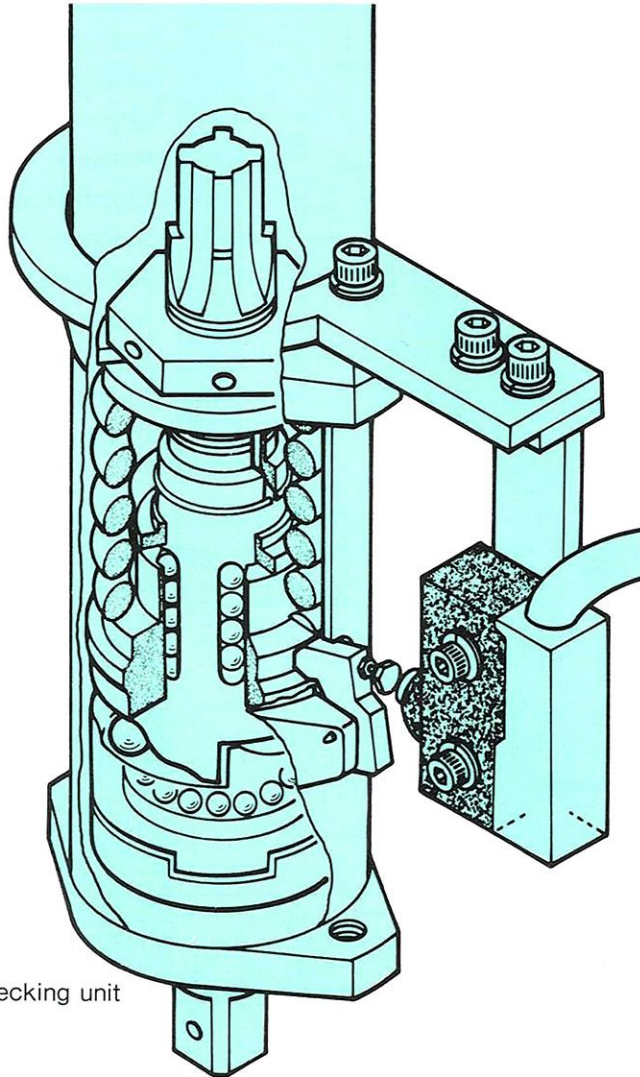
(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m ³ /min)	Weight (kg)	Hose connection screw size (PF)
HR-1200	Approx. 110	113	Approx. 1.4	Approx. 22	$\frac{3}{4}$ "



Model number	A	Bφ	Dφ	E	F	Gφ	H	I	K	L	M	N	O	ℓ
HR-1200	32	39.5	60	3-M12	14.5	6.3	50	30	4	595	104	108	130	545

NR-K/HR-K torque checker nut runner (with lower limit checking system)

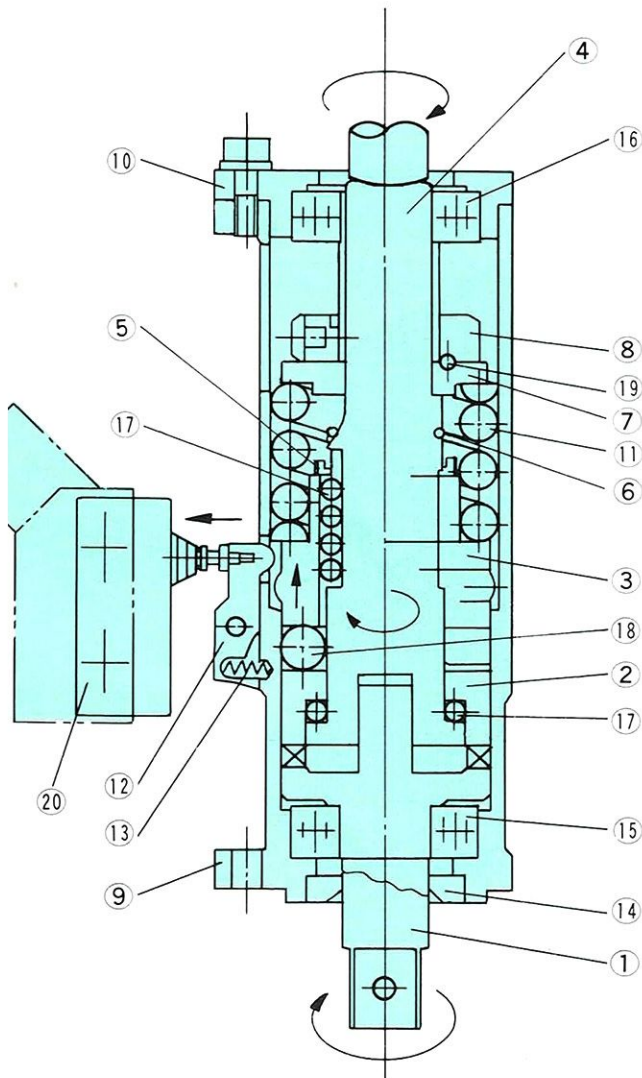


Mechanism of the checking unit

General description of the torque checker nut runner and check of tightening assurance signal

- The torque checker nut runner is a combination of a stall nut runner and a torque checking unit. It is capable of tightening screws and checking torque simultaneously.
- Our original torque checking mechanism ensures highly reliable torque check. A tightening assurance signal is generated when the torque reaches the desired value $\pm 5\%$.
- The limit switch signal generated after activation of the torque checking mechanism can be used for interlock with various devices to prevent insufficient torque and thread breakage.
- Since this nut runner is secured, it has no inertia. Therefore, unlike a reaction type unit, this checking unit has high accuracy.
- A number of these compact, light, integrated units can easily be set on a mounting plate at smaller pitches.

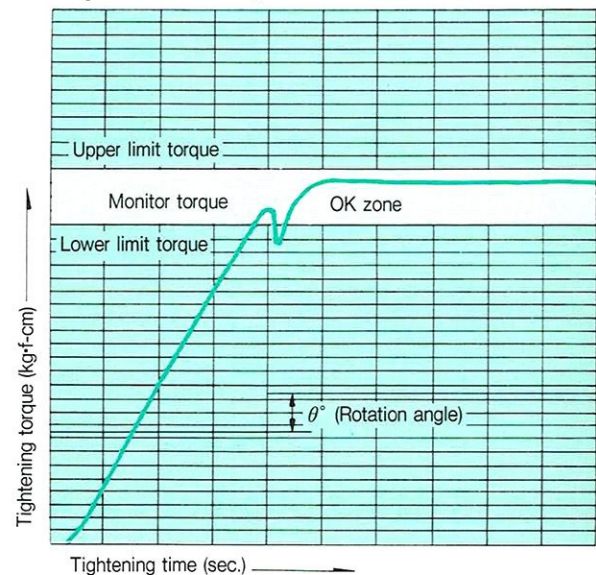
struction of torque checking unit



■Parts list

No.	Part name	No.	Part name
1	Main shaft	11	Torque check spring
2	Lower clutch	12	LS dog
3	Upper clutch	13	LS spring
3'	Retainer	14	Oil seal
4	Clutch shaft	15	Ball bearing
5	Stopper	16	Ball bearing
6	Retaining ring	17	Ball
7	Adjustment washer	18	Ball
8	Adjustment lock nut	19	Ball
9	Clutch case	20	Microswitch
10	Clutch case cover		

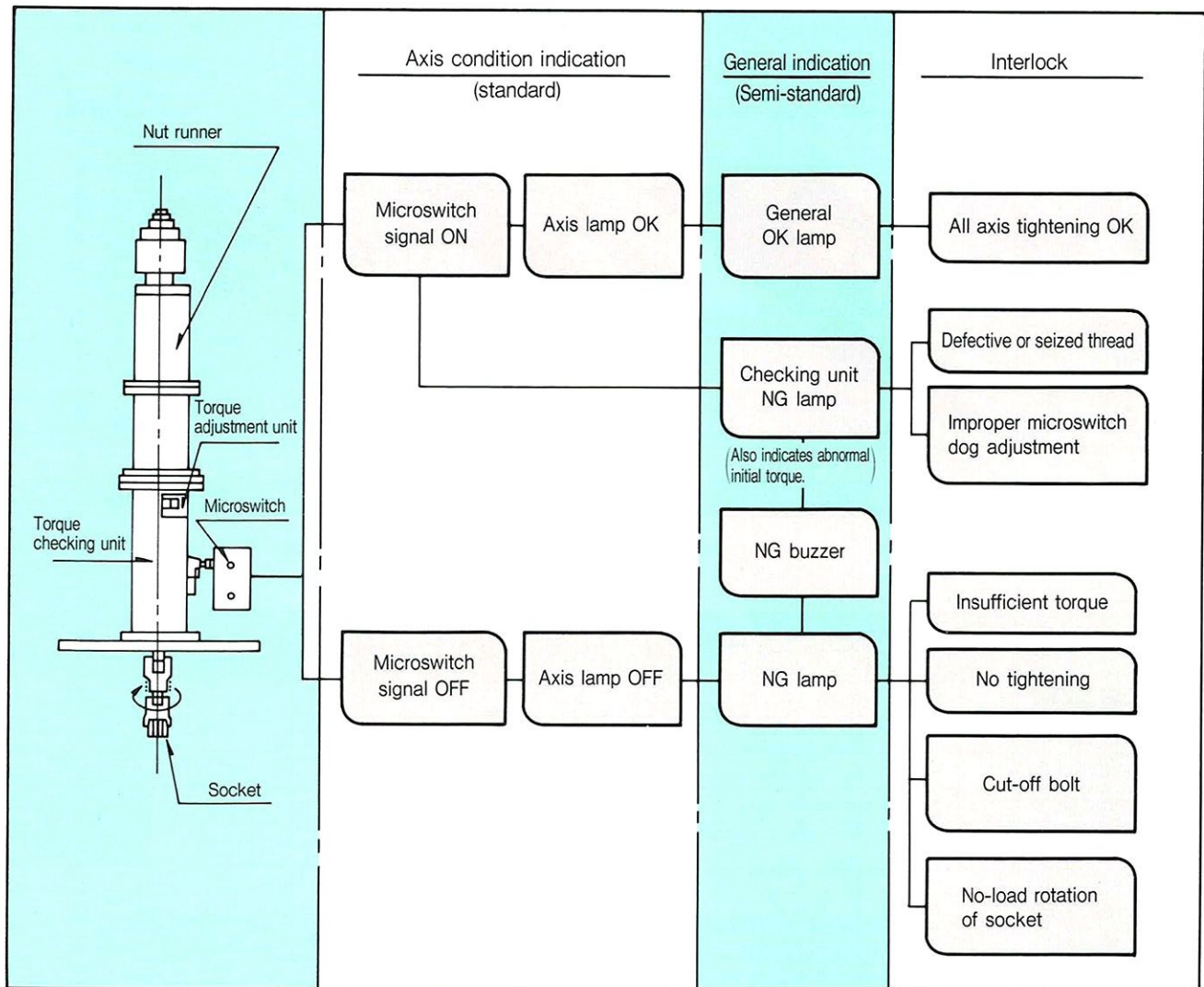
■Characteristic curve of the nut runner torque checking unit



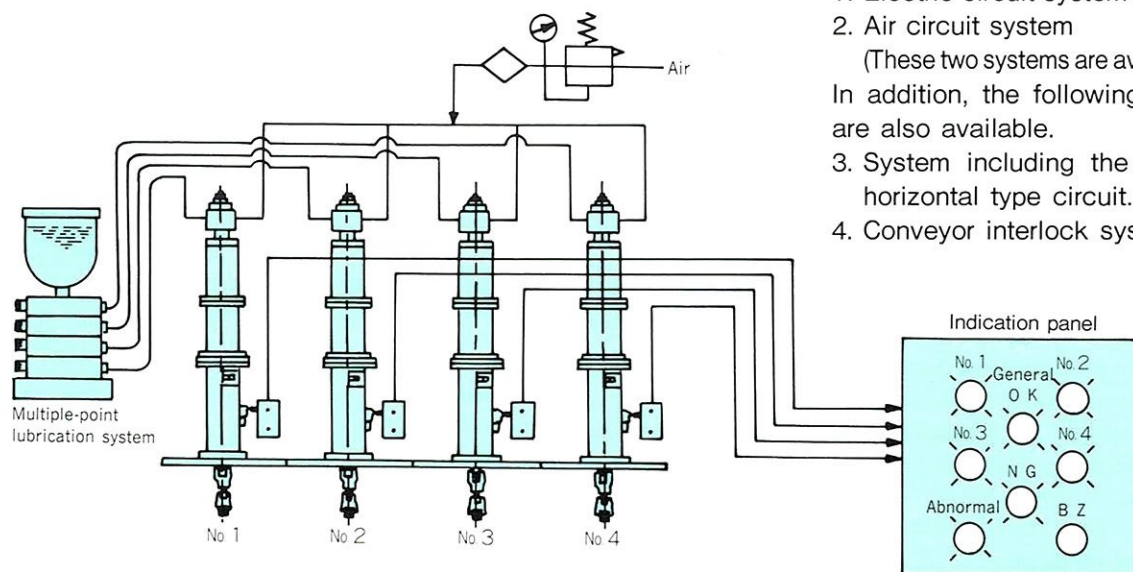
The above left figure shows the torque checking unit. When the nut runner rotates, torque is transmitted to the clutch shaft (4), the upper clutch (3), the ball (18), the lower clutch (2) and the main shaft (1). When the preset torque is reached, the ball (18) moves and the upper clutch (3) is shifted in the thrust direction. By this shifting, the microswitch (20) is activated by the LS dog (12) and generates a signal indicating that the preset torque has been reached.

The checking unit operates continuously until stall torque is reached. The upper limit torque is adjustable by means of the nut runner adjustment valve.

■Torque checker nut runner signal check and interlock

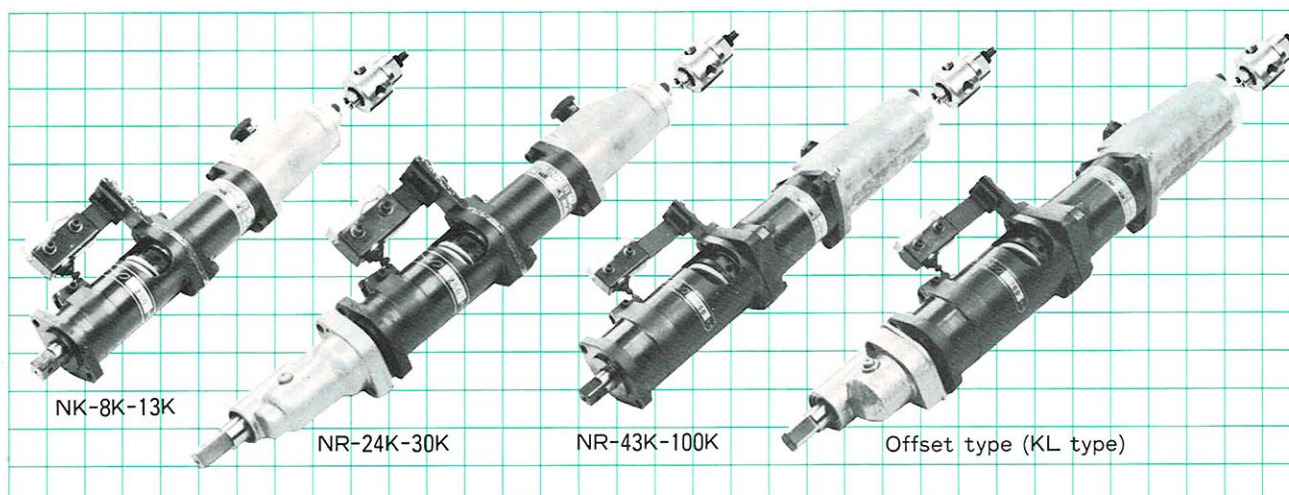


■Torque checker nut runner system diagram



1. Electric circuit system (standard)
 2. Air circuit system
(These two systems are available.)
- In addition, the following systems are also available.
3. System including the vertical/horizontal type circuit.
 4. Conveyor interlock system.

■Performance



The offset type is ideal for tightening bolts spaced at smaller pitches.

(The following values apply at 4.0 kg/cm² of air pressure.)

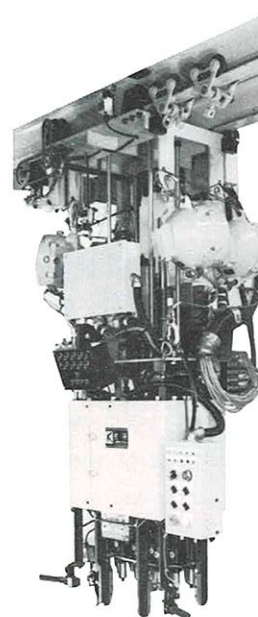
Model number	No-load speed (R.P.M.)	Lower limit check torque range (kg-m)	Tightening torque (kg-m)	Air consumption (m³/min)	Hose connection screw size (PF)	Weight (kg)	
						Straight type	Offset type
NR-8K(KL)	520	0.3~0.75	7.5	0.25	1/4"	1.6	2.2
NR-13K(KL)	290	0.5~1.3	1.4				
NR-24K(KL)	300	1.1~2.5	2.5	0.33		2.2	2.9
NR-30K(KL)	230	1.8~2.5	3.0			2.2	3.0
NR-43K(KL)	390	2.5~4.1	4.1	0.65	3/8"	3.9	4.5
NR-52K(KL)	320	3.5~4.9	4.9			3.9	4.8
NR-65K(KL)	260	4.5~6.1	6.1			3.9	4.8
NR-75K(KL)	230	5.5~7.0	7.0			4.8	5.9
NR-88K(KL)	260	6.5~8.5	8.5	0.90	3/8"	6.3	7.5
NR-100K(KL)	220	7.5~9.0	10.0			6.3	7.5

*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

*When the air pressure is 5 kg/cm², the torque values increase by approximately 25%.

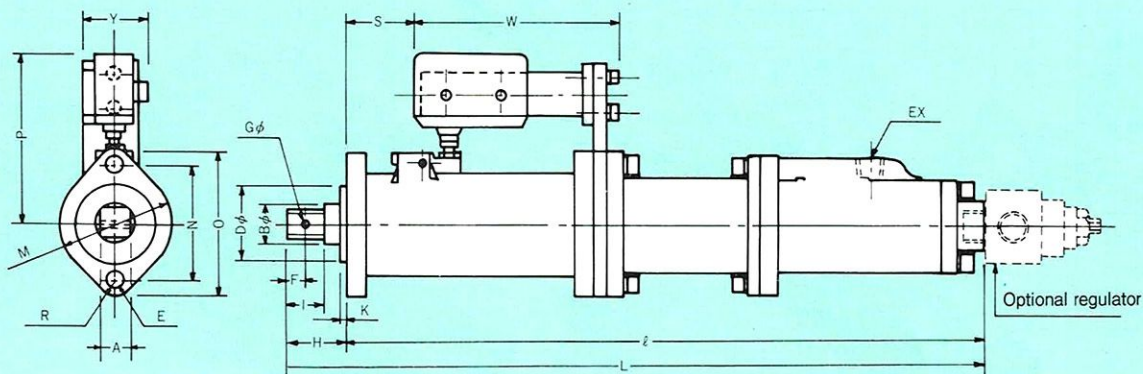
Note:

- When ordering, please specify the torque value to be preset on the lower limit torque checking unit. We will preset the value before shipment.
- Please specify either an electric or pneumatic check switch.
- If you wish to use a unit with a counterclockwise rotation motor, please specify.
- The no-load speed may drop depending on the piping conditions, usage and torque adjustment.
- The air pressure should be set at a constant value at all times to maintain the standard tightening torque.
- The standard tightening torque is adjustable.
- The torque may differ depending on workpiece conditions.
- The air consumption values listed above are necessary for each axis. The actual values, however, are generally smaller than the listed values.
- Centralized exhaustion is possible by using an optional centralized exhaustion muffler (applicable to NR-8K, NR-13K and NR-100K only).
- Connect a hose from the exhaust port to the exhaust cleaner in the case of centralized exhaustion.



■ Major dimensions

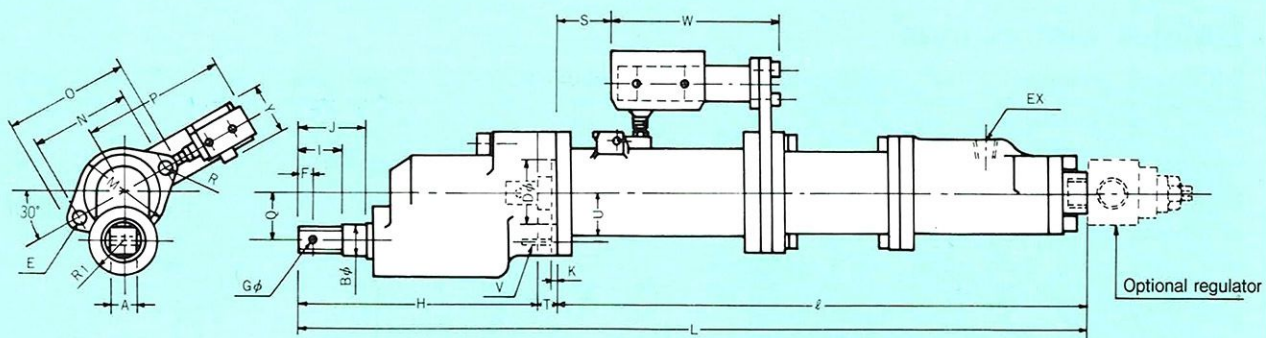
- Straight type



(Unit: mm)

[illegible]

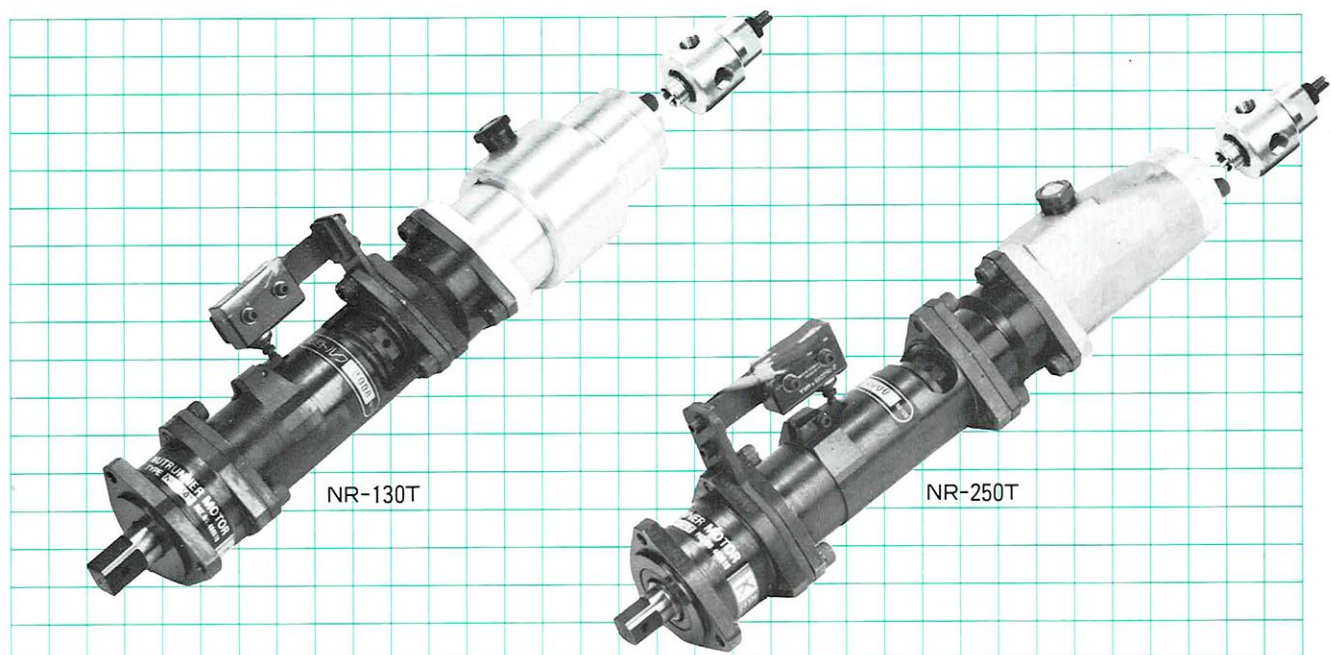
- Offset type



(Unit: mm)

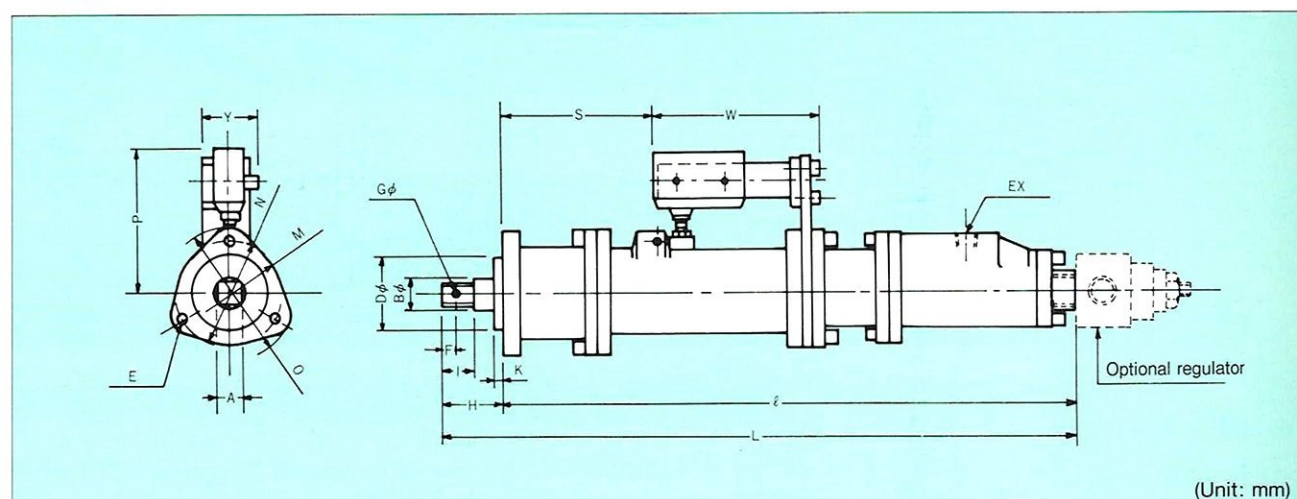
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NR-T large torque checker unit runner T series



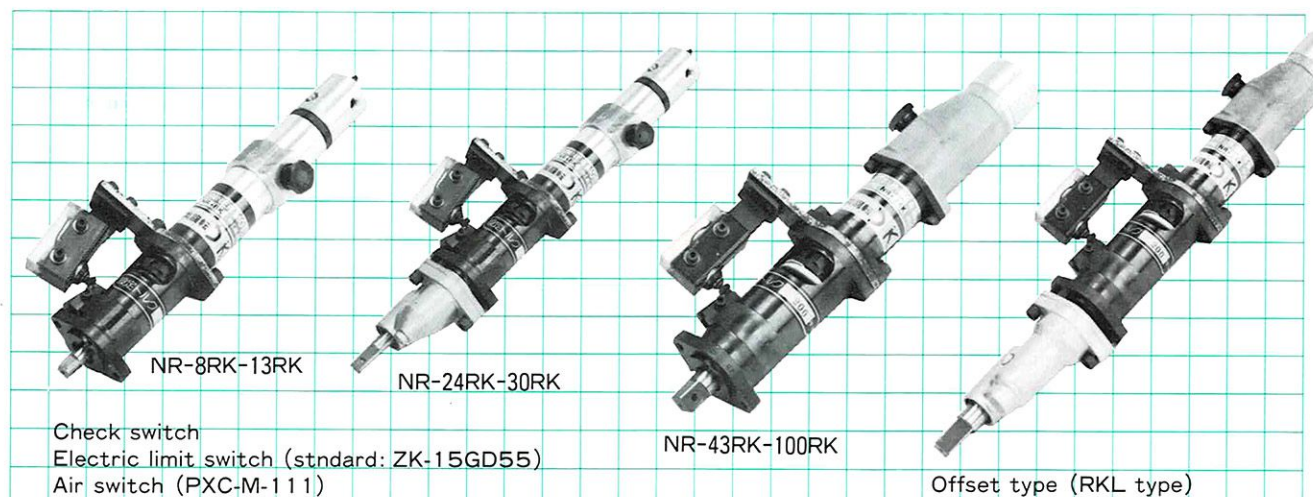
Model number	No-load speed (R.P.M.)		Tightening torque (kg-m)		Lower limit check torque range (kg-m)	Air consumption (m³/min)	Weight (kg)	Hose connection screw size (PF)
	3.0kg/cm²	4.0kg/cm²	3.0kg/cm²	4.0kg/cm²				
NR-130T	100	180	9.8	12.5	9.0~12.0	0.9	5.7	3/8"
NR-160T	130	145	12.0	15.2	12.0~14.0			
NR-200T	100	115	15.0	19.2	14.0~18.0		6.1	
NR-250T	120	130	18.0	23.0	15.0~24.0	1.3	10.0	1/2"

Major dimensions



Model number	A	B	D	E	F	G	H	I	K	L	ℓ	M	N	O	P	S	W	Y	EX
NR-130T	15.87	19	58	3-M8	9	5.2	31	18	3	453	422	65	76	90	84	50	98	28	PT. 1/2
NR-160T	19.05	24			13		39	25		432	393	70	82	96		103	98		
NR-200T										446	407								
NR-250T										463	424	71							

NR-RK dual rotation stall nut runner with lower limit checking unit



The offset type is ideal for tightening bolts spaced at smaller pitches.

Model number	No-load speed (R.P.M.)		Tightening torque (kg-m)		Lower limit check torque range (kg-m)	Air consumption (m ³ /min)	Hose connection screw size (PF)	Weight (kg)	
	3.0kg/cm ²	4.0kg/cm ²	3.0kg/cm ²	4.0kg/cm ²				Straight type	Offset type
NR-8RK	360	420	0.40	0.50	0.2~0.45	0.25	2-1/8"	2.0	2.6
NR-13RK	200	230	0.72	0.95	0.5~0.8				
NR-8RKH	720	820	0.40	0.50	0.2~0.45	0.33	2-1/4"	2.6	3.3
NR-13RKH	370	430	0.72	0.95	0.5~0.8		2-1/4"	2.6	3.3
NR-24RK	260	240	1.3	1.6	0.8~1.5			2.6	3.3
NR-30RK	200	185	1.6	1.9	1.5~1.8			2.7	3.4
NR-43RK	270	310	2.1	2.6	1.6~2.5	0.65	2-1/4"	4.4	5.0
NR-52RK	220	250	2.6	3.1	2.4~2.9			4.4	5.0
NR-65RK	190	210	3.2	3.8	3.0~3.7			4.4	5.0
NR-75RK	160	185	3.6	4.4	3.4~4.2			5.3	6.4
NR-88RK	190	210	4.6	5.3	4.2~5.3	0.90	2-3/8"	6.8	8.0
NR-100RK	160	175	5.2	6.3	5.0~6.2			6.8	8.0

*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

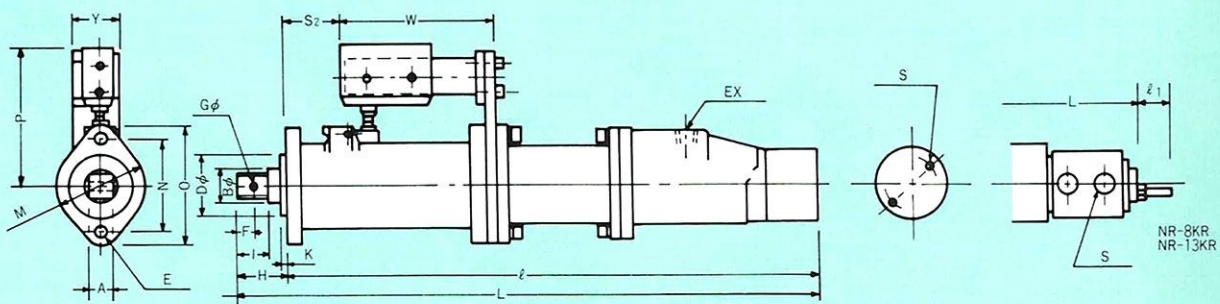
*When the air pressure is 5 kg/cm², the torque values increase by approximately 25% and the speed increases by approximately 12%.

Notes:

- When ordering, please specify the torque value to be preset on the lower limit torque checking unit. We will preset the value before shipment.
- Please specify either an electric or pneumatic check switch.
- If you wish to use a unit with a counterclockwise rotation motor, please specify.
- The no-load speed may drop depending on the piping conditions, usage and torque adjustment.
- The air pressure should be set at a constant value at all times to maintain the standard tightening torque.
- The standard tightening torque is adjustable.
- The torque may differ depending on workpiece conditions.
- The air consumption values listed above are necessary for each axis. The actual values, however, are generally smaller than the listed values.
- Centralized exhaustion is possible by using an optional centralized exhaustion muffler (applicable to NR-8KR, NR-13KR, NR-88KR, and NR-100KR only.)
- Be sure to use a reducing valve or a speed controller in the clockwise rotation air supply circuit for torque adjustment.
- Air is exhausted from the counterclockwise rotation air supply circuit during clockwise rotation. On the contrary, air is exhausted from the clockwise rotation air supply circuit during counterclockwise rotation. Therefore, pay special attention to the exhaustion setting. If the exhaustion setting is improper, torque and speed may drop.

■ Major dimensions

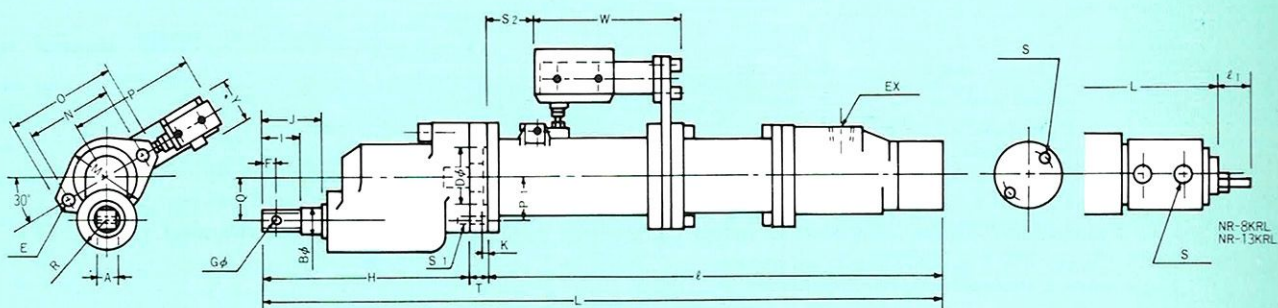
- Straight type



(Unit: mm)

[illegible]

- Offset type

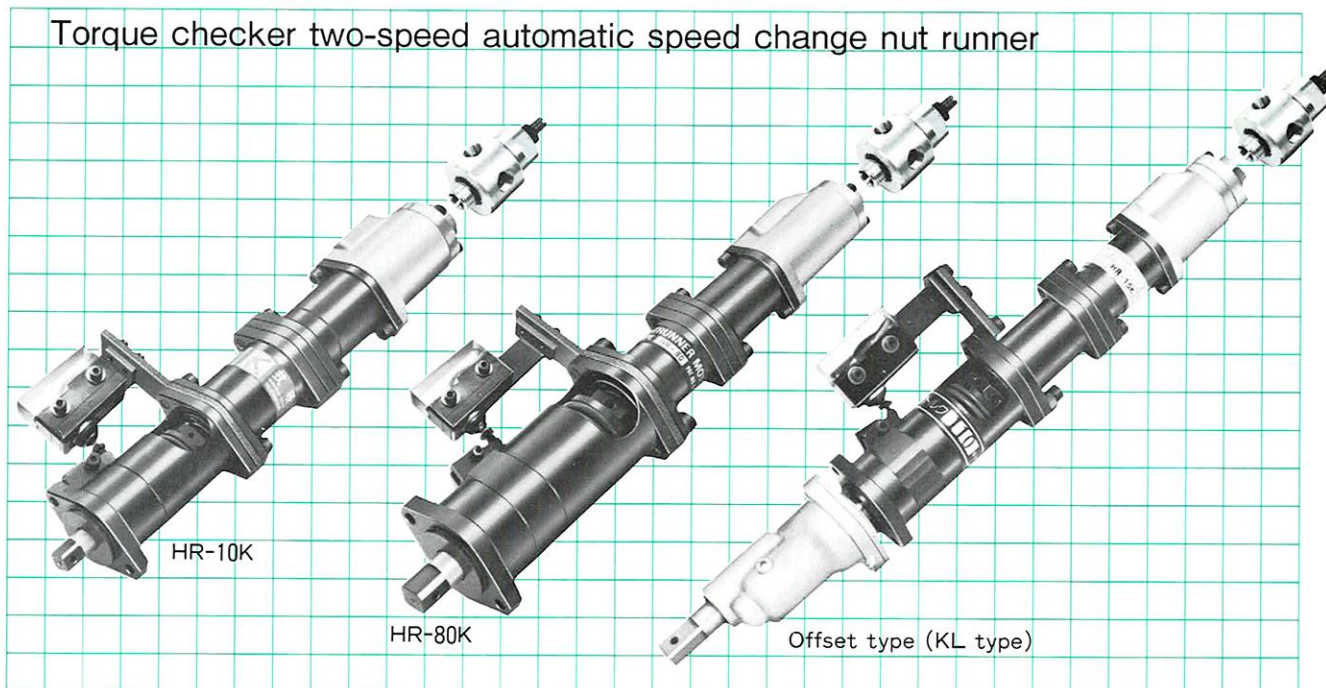


(Unit: mm)

Model number	A	B ϕ	D ϕ	E	F	G ϕ	H	I	J	K	L	ℓ	M	N	O	P	Q	R	W	T	P	S ₁	S	ℓ_1	EX	S ₂	Y
NR-8KRL	9.52	11.5	32	2-M6	7.5	3.2	89	21	32		356	259	39	48	60	73	20	13.5	75		30	3	2-PT. $\frac{1}{8}$	10	PT. $\frac{3}{8}$	21	28
NR-13KRL					9	4.2	126	24	36		415	281	45	51	64	76	18.75	14.5	90		25	4		PT. $\frac{3}{8}$	31	28	
NR-24KRL	12.7	16.5	34		9	4.2	126	24	36		427	293	45	51	64	76	18.75	14.5	90		25	4	PT. $\frac{3}{8}$	31	28		
NR-30KRL					9	4.2	126	24	36		427	293	45	51	64	76	18.75	14.5	90		25	4	PT. $\frac{3}{8}$	31	28		
NR-43KRL	15.87	19.5	44	2-M8	9.5	5.2	118	26	39.5	3	494	354	57	66	80	84	24	17.5	97	8	30	5	2-PT. $\frac{1}{4}$	—	PT. $\frac{1}{2}$	51	28
NR-52KRL											480						382	66							80	30	20
NR-65KRL											480	382	66			80	30	20	35		2-PT. $\frac{3}{8}$				54	28	
NR-75KRL											480	382	66			80	30	20	35		2-PT. $\frac{3}{8}$				54	28	
NR-88KRL											480	382	66			80	30	20	35		2-PT. $\frac{3}{8}$				54	28	
NR-100KRL											480	382	66			80	30	20	35		2-PT. $\frac{3}{8}$				54	28	

■Performance

Torque checker two-speed automatic speed change nut runner



The offset type is ideal for tightening bolts spaced at smaller pitches.

(The following values apply at 4.0 kg/cm² of air pressure.)

Model number	No-load speed (R.P.M.)	Lower limit check torque range (kg-m)	Standard tightening torque (kg-m)	Air consumption (m ³ /min)	Weight (kg)	Hose connection screw size (PF)
HR-10K	540	0.3~1.0	1.1	0.15	1.9	1/4"
HR-15K	540	1.0~2.0	2.4	0.2	2.6	
HR-30K	540	1.5~2.5	3.0		4.0	
HR-50K	430	2.5~5.0	5.0	0.25	4.8	
HR-80K	290	5.0~7.5	8.0			

*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

*When the air pressure is 5 kg/cm², the torque values increase by approximately 25% and the speed increases by approximately 12%.

Notes:

- When ordering, please specify the torque value to be preset on the lower limit torque checking unit. We will preset the value before shipment.
- Please specify either an electric or pneumatic check switch.
- If you wish to use a unit with a counterclockwise rotation motor, please specify.
- The no-load speed may drop depending on the piping conditions, usage and torque adjustment.
- The air pressure should be set at a constant value at all times to maintain the standard tightening torque.
- The standard tightening torque is adjustable.
- The torque may differ depending on workpiece conditions.
- The air consumption values listed above are necessary for each axis. The actual values, however, are generally smaller than the listed values.
- Centralized exhaustion is possible by connecting a hose to the exhaustion port of the motor case.

