# CREATIVE AND INNOVATIVE AIR RUNNER SERIES

FOR SCREW TIGHTENING





### 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. ±10%~±15%	NR NR	Stall
2	One-speed, dual-rotation stall nut runner NR-8SR~NR-200R	1. Forward and reverse rotation	NR-R	Stall  Reverse rotation stall
3	Two-speed stall nut runner HR-10S~HR-500	<ol> <li>Light and compact</li> <li>Low energy consumption</li> <li>Low inertia</li> <li>±6%~±10%</li> </ol>	HR	
4	One-speed stall nut runner with lower limit torque checking unit	<ol> <li>Lower limit torque check</li> <li>Tightening lamp indication</li> <li>±10%~±15%</li> </ol>	NR-K	Lower limit torque Stall
5	One-speed, dual-rotatio stall nut runner with lower limit torque checking unit NR-RK	<ol> <li>Lower limit torque check</li> <li>Forward and reverse rotation</li> <li>Tightening lamp indication</li> </ol>	O O O O N N N N N N R R K	Lower limit torque  Stall  Reverse rotation stall
6	Two-speed stall nut runner with lower limit torque checking unit HR-K HR-T	<ol> <li>Lower limit torque check</li> <li>Tightening lamp indication</li> <li>±6%~±10%</li> </ol>	HR-K	Lower limit Stall torque

# 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

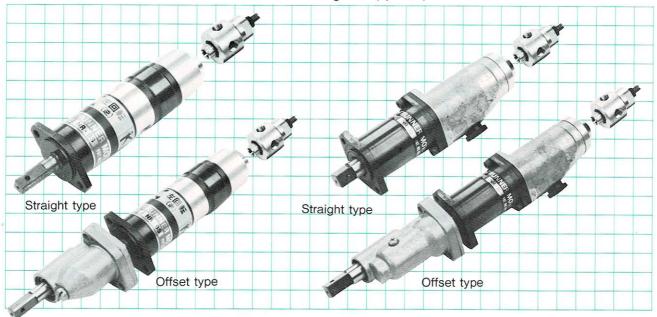
- 1. The pressure and capacity of the air supply must be constant and optimal at all times. Connect a reducing valve (regulator) where nut runners are operated to prevent air pressure from changing.
- 2. Be sure to use an air filter to supply clean air. Foreign matter may adversely affect rotation and may cause abrasion and other potential damage.
- 3. Sufficiently lubricate the pneumatic equipment. Insufficient Inbrication 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 fatique, 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 st smaller pitches.

(The following values apply at 4.0 kg/cm<sup>2</sup> of air pressure.)

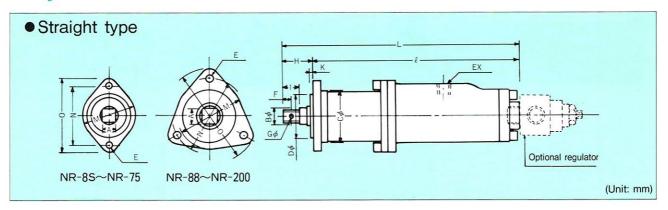
		1	(THE TOHO)	villig values app	ly at 4.0 kg/cm²	
Model number	No-load speed (R.P.M.)	Standard tightening torque	Air consumption (m³/min)	Hose connection screw size		ght g)
	(realive)	(kg-m)	(111711111)	(PF)	Straight type	Offset type
NR-8S (L)	520	0.75	0.05		0.0	
NR-13S(L)	290	1.4	0.25	1 /4"	0.6	1.2
NR-24 (L)	300	2.5	0.22	1/4"	1.0	1.5
NR-30 (L)	230	3.0	0.33		1.1	1.7
NR-43 (L)	390	4.1				2.7
NR-52 (L)	320	4.9	0.65	2./0"	2.0	2.7
NR-65 (L)	260	6.1	0.65	3/8"	2.0	2.0
NR-75 (L)	230	7.0				2.9
NR-88 (L)	260	8.5				
NR-100 (L)	220	10.0			3.7	4.8
NR-130 (L)	180	12.5	0.90	3/8"		
NR-160 (L)	145	15.2				6.0
NR-200 (L)	115	19.5			4.1	6.0

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

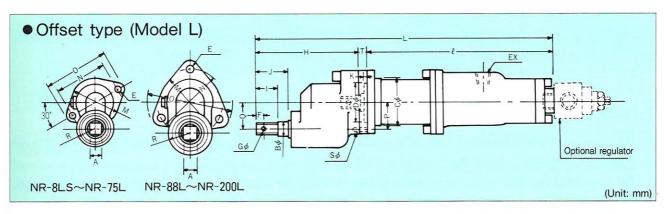
### Notes:

- 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 depnding 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.

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

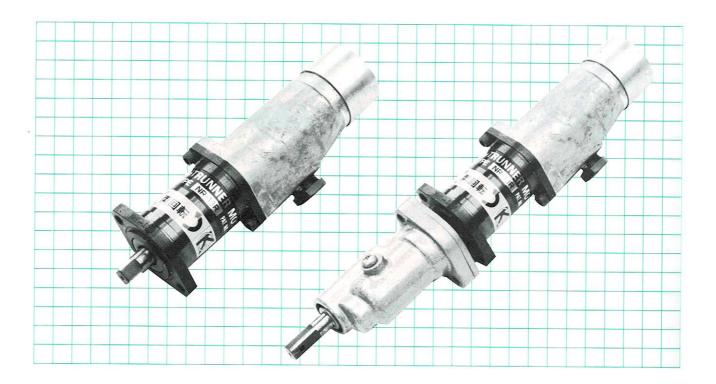


Model number	Α	Вφ	Сф	$D\phi$	E	F	Gφ	Н	1	K	L	M	N	0	l	EX
NR-8S		11 5	36	32		7.5		35	21		161.5	36	45	57	126.5	PT.3/8
NR-13S	9.52	11.5	30	32	2-M6	7.5	3.2	33	41	2	101.5	30	45	31	120.5	F 1. /8
NR-24		12	42	34	2-1010	5		21	11		181	43	51	64	160	PT.3/8
NR-30	12.7	17	42	34		8	4.2	26	16		198	43	JI	04	172	F 1. /8
NR-43																
NR-52			51	44	2-M8						232	52	62	76	201	PT.1/2
NR-65			51	44	2-1010						232	JZ	02	70	201	F 1./2
NR-75	15.87	19			1	9		31	18							
NR-88							5.2			3						
NR-100			64								280	65	76	90		
NR-130				58	3-M8										249	PT.1/2
NR-160	19.05	24	70			13		39	25		288	71	82	96		
NR-200	19.05	24	70			13		29	25		200	11	02	30		



Model number	Α	Вφ	Cφ	Dφ	Ε	F	Gφ	Н	1	J	K	L	М	N	0	Р	Q	R	Sφ	Т	l	EX
NR-8SL			36	32				89				223.5	36	45	57	22	20	13.5	3		126.5	PT.3/8
NR-13SL	9.52	11.5	30	32	2-M6	7.5	3.2	03	21	32	2	223.3	30	40	31	- 22	20	13.3	J		120.5	1 1.78
NR-24L			12	24	- Z-IVIO			117			2	285	43	51	64	25	18.75	14.5	4		160	PT.3/8
NR-30L	12.7	16.5	42	34		9	4.2	126	24	36		306	43	31	04	25	10.73	14.3	4		172	F 1./8
NR-43L								132				341					24	17.5				
NR-52L			51	44	2-M8			132				341	52	62	76	30	24	17.5			201	PT.1/2
NR-65L			51	44	Z-1VIO			110				327	32	02	70	30	30			8	201	F I. /2
NR-75L	15.87	19.5				9.5		118	26	39.5		321					30					
NR-88L							5.2				3							20	5			
NR-100L			64					132				389	65	76	90		28					
NR-130L				58	3-M8											35					249	PT.1/2
NR-160L	10.05	24	70			10.5		150	21	45.5		410	71	00	00		25	24				
NR-200L	19.05	24	70			10.5		156	31	45.5		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.

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

### **■**Performance

Model number	No-load speed (R.P.M.)	Standard tightening torque	Air consumption (m³/min)	Hose connection screw size		ght g)
	(14.11.11.)	(kg-m)		(PT)	Straight type	Offset type
NR-8R (L)	820	0.5				
NR-13R (L)	430	0.95	0.22	2.1/	1.4	1.9
NR-24R (L)	240	1.6	0.33	2-1/8		
NR-30R (L)	185	1.9			1.5	2.1
NR-43R (L)	310	2.6				2.2
NR-52R (L)	250	3.1	0.05	2.1/	2.5	3.2
NR-65R (L)	210	3.8	0.65	2-1/4	2.5	2.4
NR-75R (L)	185	4.4				3.4
NR-88R (L)	210	5.3				
NR-100R(L)	175	6.3			4.2	5.3
NR-130R(L)	145	7.8	0.90	2-3/8		
NR-160R(L)	115	9.5				C 2
NR-200R(L)	90	12.2			4.4	6.3

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

### **■**Performance

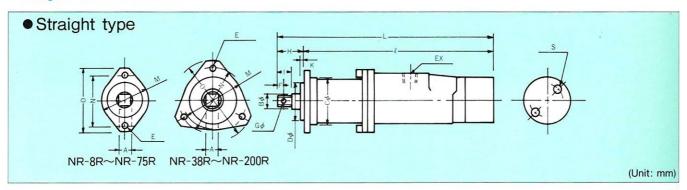
(The following values apply at 4.0 kg/cm<sup>2</sup> of air pressure.)

Model number	No-load speed (R.P.M.)	Standard tightening torque		screw size	Wei (k	ght g)
	(*)	(kg-m)	(,,	(PT)	Straight type	Offset type
NR-8SR (L)	420	0.5	0.25	2.1/		1 7
NR-13SR(L)	230	0.95	0.25	2-1/8	1.1	1.7

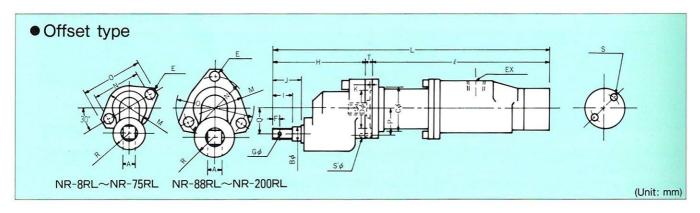
<sup>\*</sup>When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

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

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

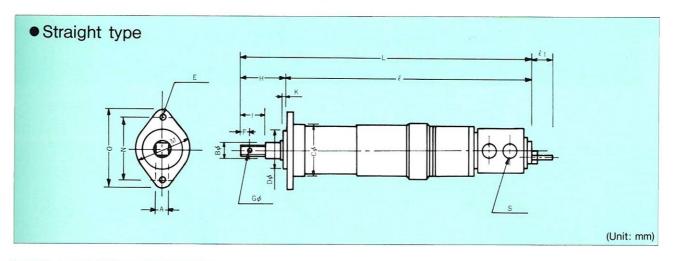


Model number	Α	Вφ	Cφ	Dφ	E	F	Gφ	Н	I	K	L	М	N	0	l	S	EX
NR-8R																	
NR-13R	9.52	12	42	34	2-M6	5	3.2	21	11	2	188	43	51	64	167	2- PT.½	PT.3/8
NR-24R			42	34	2-1010							43	51	04		PT. 1/8	P1.78
NR-30R	12.7	17				8	4.2	26	16		205				179		
NR-43R																	
NR-52R			51	44	2-M8						242	52	62	76	211	2- PT.1/4	PT.1/2
NR-65R			51	44	2-1010						242	52	02	70	211	PT.1/4	F1./2
NR-75R	15.87	19				9		31	18								
NR-88R							5.2			3							
NR-100R			64								286	65	76	90			
NR-130R				58	3-M8										255	2- PT.3/8	PT.1/2
NR-160R	10.05	24	70			13		39	25		294	71	82	96			
NR-200R	19.05	24	-			13		39	25		294	/1	02	90			

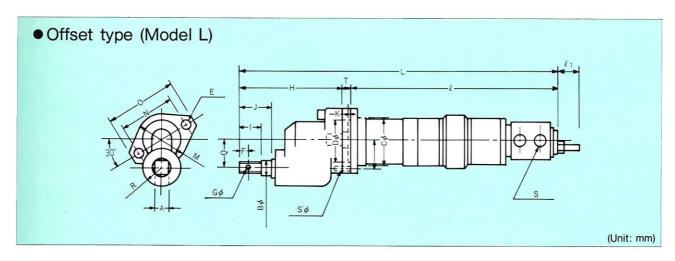


Model number	Α	Вφ	Сф	$D\phi$	E	F	Gφ	Н	1	J	K	L	М	N	0	Р	Q	R	S'ø	Т	l	S	EX
NR-8RL								108				283				22	13	11.5	2.5				
NR-13RL	9.52	11.5	42	24	2.46	7.5	3.2	117	21	32	2	202	43	51	C 4						167	2-	DT3/
NR-24RL			42	.34	2-M6			117				292	43	31	64	25	18.75	14.5	4			PT.1/8	PT.3/8
NR-30RL	12.7	16.5				9	4.2	126	24	36		313									179		
NR-43RL								100				251					24	17 5					
NR-52RL			۲,		2.40			132				351	E2	CO	70	20	24	17.5			211	2-	DT 1/
NR-65RL			51	44	2-M8			110				227	52	62	76	30	20			8	211	2- PT.1/4	PT.1/2
NR-75RL	15.87	19.5				9.5		118	26	39.5		337					30						
NR-88RL							5.2				3							20	5				
NR-100RL			64					132				395	65	76	90		28						
NR-130RL				58	3-M8											35					255	2- PT.3/8	PT.1/2
NR-160RL			70			10.5		150	٠.			410	٠.	00	00		25	24				1 11/8	
NR-200RL	19.05	24	70			10.5		156	31	45.5		419	71	82	96		35	24					

### ■Major dimensions (with optional regulator)

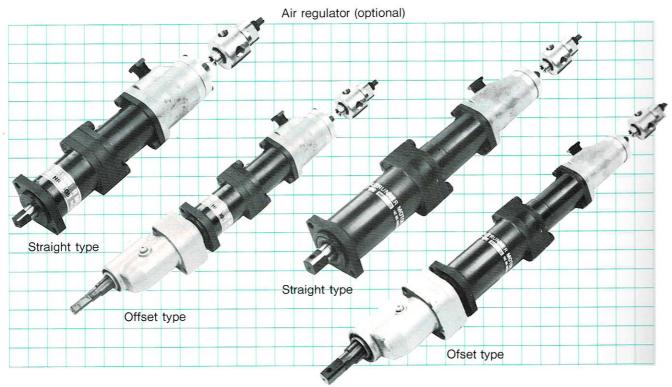


Model number	Α	Вφ	Cφ	Dφ	E	F	Gφ	Н	1	K	L	М	N	0	l	l 1	S
NR-8SR	0.50	11 5	20	20	2.46	7.5	2.2	25	0.	_	010	20			175		2-
NR-13SR	9.52	11.5	36	32	2-M6	7.5	3.2	35	21	2	210	36	45	5/	1/5	10	PT.1/8



Model number	Α	Вφ	Сф	$D\phi$	E	F	Gφ	Н	1	J	K	L	М	N	0	Р	Q	R	S'ø	Т	l	S	<i>l</i> 1
NR-8SRL	0.52	11 5	20	22	2.46	7.5	2.2	00	21	20	^	272	20			20	20			•		2-	
NR-13SRL	9.52	11.5	30	32	2-M6	7.5	3.2	89	21	32	2	2/2	36	45	5/	30	20	13.5	3	8	175	PT.1/8	10

## 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, inertial which may change output torque, is minimized. The result is accurate and even tightening torque.

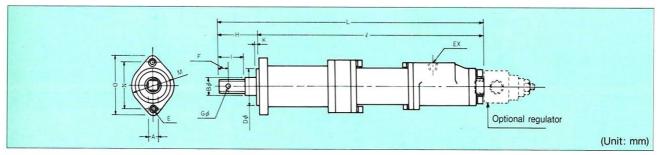
### **Features**

- 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.
- 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/cm<sup>2</sup> 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		
HR-15S	Approx. 540	2.4	0.0	1.2	
HR-30S	Approx. 540	3.0	0.2		1/4"
HR-50S	Approx. 430	5.0	0.05	1.5	
HR-80S	Approx. 290	8.0	0.25	2.2	

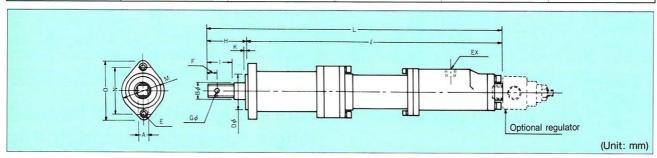


型式番号	А	Вφ	$D\phi$	E	F	Gφ	Н	1	K	L	M	N	0	l	EK
HR-10S										210				189	
HR-15S	9.52	12	32	2 MG	5	3.2	21	11		016	39	45	57		
HR-30S				2-M6					3	216				195	PT.1/4
HR-50S	12.7	17	34		8	4.2	26	16		240	42	48	60	214	
HR-80S	15.87	19	44	2-M8	9	5.2	31	18		248	54	62	76	217	

### [HR-110 and HR-140]

(The following values apply at 4.0 kg/cm<sup>2</sup> 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-110	Approx. 300	10.5	0.22		1
HR-140	Approx. 230	13.0	0.33	Approx.3.4	1/4



型式番号	Α	$B\phi$	Cφ	Ε	F	Gφ	Н	1	K	L	М	N	0	l	EX
HR-110	15.87	19	44	2-M8	0	E 2	21	1.8	2	341	Ε.4	62	70	310	DT3/2
HR-140	15.87	19	44	2-1018	9	5.2	31	18	3	352	54	62	76	321	P1.78

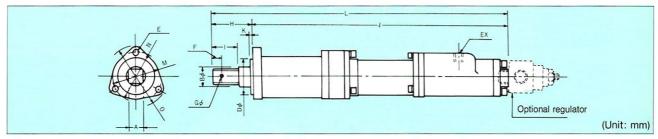
- \*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.
- \*When the air pressure is 5 kg/cm², the torque values increase by approximately 25% and the speed increases by approximately 12%.

#### 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 depnding 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.)

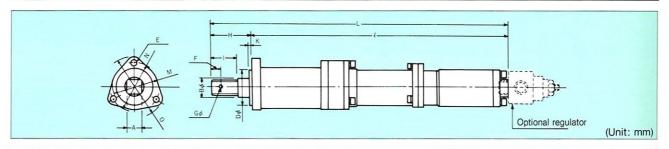
Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m³/min)	Weight (kg)	Hose connection screw size (PF)
HR-160	Approx. 320	16.0			
HR-200	Approx. 260	20.0	0.65	Approx. 5.0	3/8"
HR-240	Approx. 220	23.0	0.00		78
HR-270	Approx. 180	28.0		Approx. 5.5	



Model number	Α	$B\phi$	$D\phi$	E	F	Gφ	Н	1	K	L	M	N	0	l	EX
HR-160															
HR-200	10.05	24	50	2 440	12	F 2	30	25	2	200	60	CO.	00	250	DT1/
HR-240	19.05 24	9.05 24	50	3-M8	13	5.2	39	25	3	398	62	68	82	359	PT.1/2
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 (m³/min)	Weight (kg)	Hose connection screw size (PF)
HR-300	Approx. 260	30.0			
HR-340	Approx. 200	34.0		Approx. 10.2	
HR-420	Approx. 180	42.5	0.9		3/8"
HR-500	Approx. 145	51.0		Approx. 10.6	
HR-700	Approx. 140	79.0		Approx. 13	

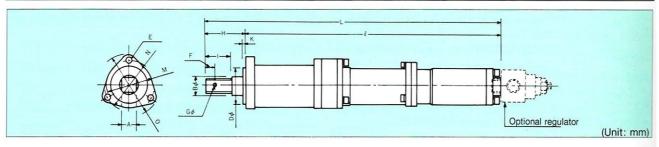


Model number	Α	$B\phi$	$D\phi$	E	F	Gφ	Н	1	K	L	M	N	0	l
HR-300														
HR-340	26	32	58	2 M10	14 5	6.2	48	30	4	406	70	02	102	440
HR-420	20	32	26	3-M10	14.5	6.3	48	30	4	496	78	82	102	448
HR-500														
HR-700	26	32	58	3-M10	14.5	6.3	48	30	4	497	115	82	140	449

### [HR-1200]

(The following values apply at 4.0 kg/cm<sup>2</sup> of air pressure.)

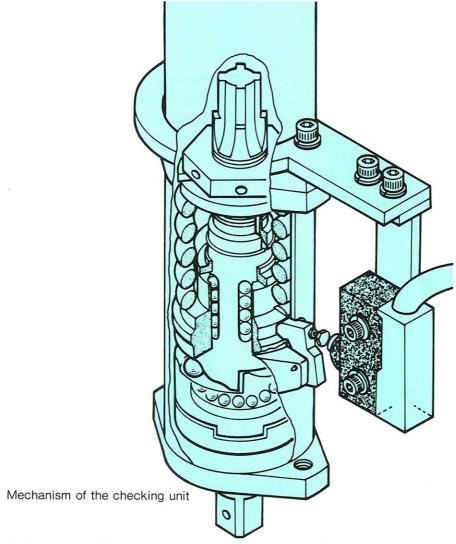
Model number	No-load speed (R.P.M.)	Standard tightening torque (kg-m)	Air consumption (m³/min)	Weight (kg)	Hose connection screw size (PF)
HR-1200	Approx. 110	113	Approx. 1.4	Approx. 22	3/4"



Model number	Α	Вφ	$D\phi$	E	F	Gφ	Н	1	K	L	M	N	0	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

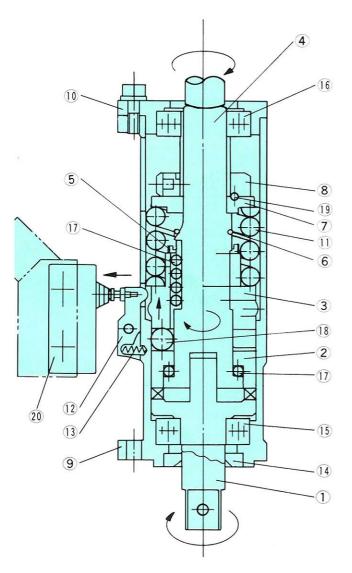
(with lower limit checking system)



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

- 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.
- Out 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.

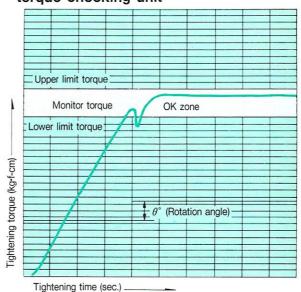
### struction of torque checking unit



### **■**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		

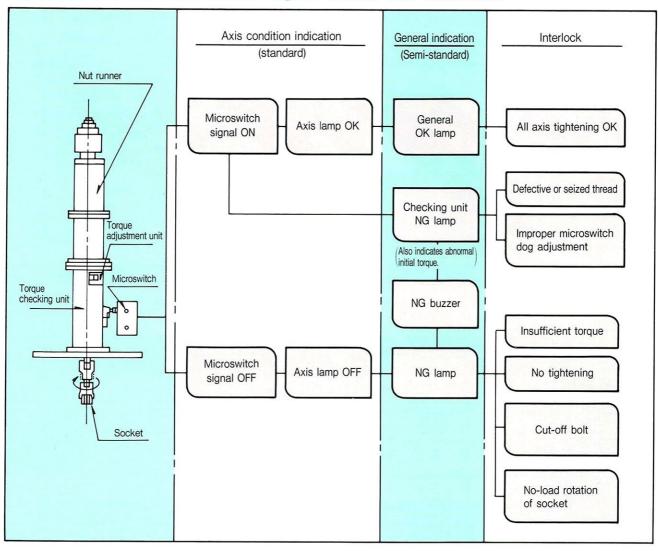
### ■Characteristic curve of the nut runner torque checking unit



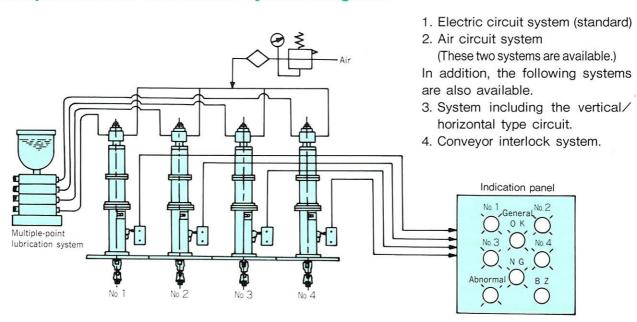
The above left figure shows the torque checking unit. When the nut runner rotates, torque is transmitted to the clutch shaft (4), the upper clutch (3), the ball (18), the lower clutch (2) and the main shaft (1). When the preset torque is reached, the ball (18) moves and the upper clutch (3) is shifted 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.

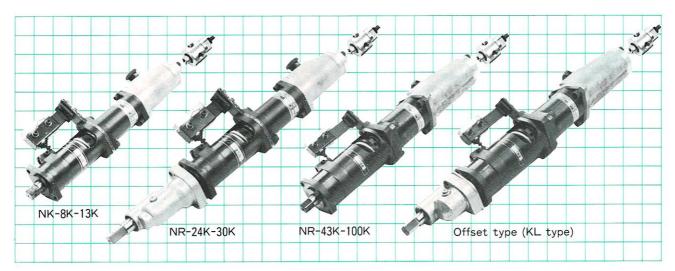
### ■Torque checker nut runner signal check and interlock



### ■Torque checker nut runner system diagram



### ■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.)

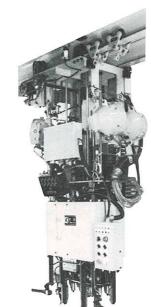
	No-load speed	Lower limit check	Tightening	Air consumption	Hose connection	Weigh	t (kg)
Model number	(R.P.M.)	torque range (kg-m)	torque (kg-m)	(m³/min)	screw size (PF)	Straight type	Offset type
NR-8K(KL)	520	0.3~0.75	7.5	0.25		1.6	2.2
NR-13K(KL)	290	0.5~1.3	1.4	0.23	1/4"	1.0	2.2
NR-24K(KL)	300	1.1~2.5	2.5	0.33	/4	2.2	2.9
NR-30K(KL)	230	1.8~2.5	3.0	0.33		2.2	3.0
NR-43K(KL)	390	2.5~4.1	4.1			3.9	4.5
NR-52K(KL)	320	3.5~4.9	4.9	0.65	3/8"	3.9	4.8
NR-65K(KL)	260	4.5~6.1	6.1	0.05	78	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	0.00	3/8	6.3	7.5
NR-100K(KL)	220	7.5~9.0	10.0	0.90	/8	6.3	7.5

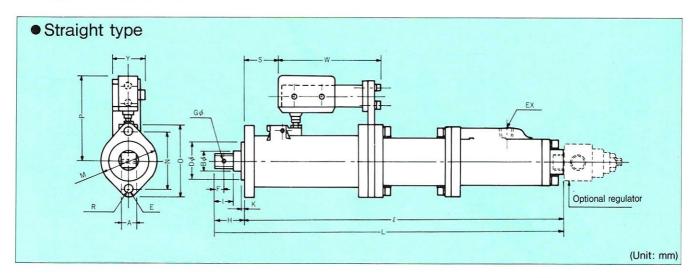
\*When the air pressure is 4.5 kg/cm², the torque values increase by approximately 13% and the speed increases by approximately 6%.

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

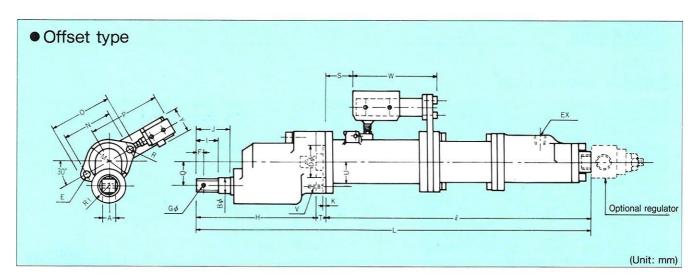
#### Note:

- 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 sxis. 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.



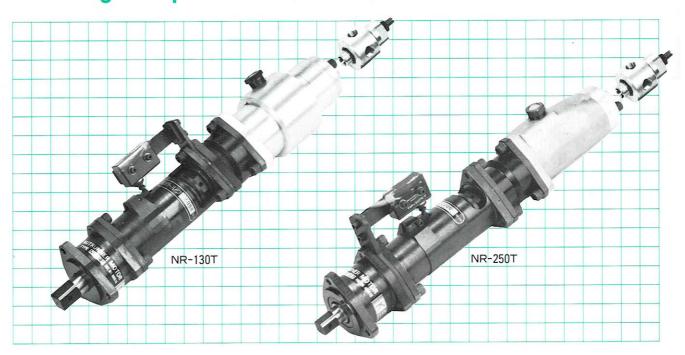


Model number	Α	Вφ	$D\phi$	E	F	Gφ	Н	ı	K	L	l	М	N	0	Р	R	S	EX	W	Υ
NR-8K	0.52	10	22		-	2.2	21	11		222	011	20	10		70		0.	n=2/	7.5	00
NR-13K	9.52	12	32	2 140	5	3.2	21	11		232	211	39	48	60	73	6 5	21	PT.3/8	75	28
NR-24K	12.7	17	24	2-M6	0		20	1.0		300	274	45			7.0	6.5		2		
NR-30K	12.7	17	34		8	4.2	26	16		312	286	45	51	64	76		31	PT.3/8	90	28
NR-43K																				
NR-52K									3	375	344	57			84	9	51	PT.1/2	97	28
NR-65K	15.87	19 44 2-M8 9 5.2	- 2	21	10						00									
NR-75K	13.87	19	44	Z-1VI8	9	5.2	31	18		403	372		- 66	80				PT.1/2		
NR-88K										45.1	400	64			89	10	54	271/	114	28
NR-100K					451	420							PT.1/2							

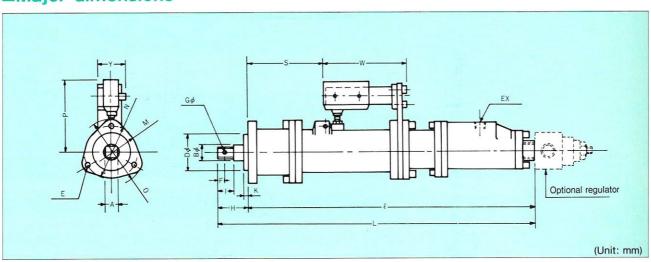


Model number	Α	Вφ	Dφ	E	F	Gφ	Н	1	J	K	L	l	М	N	0	Р	Q	R	Rı	S	T	U	٧	EX	W	Y
NR-8KL	0.50	11 5	22		7.	2.2	00	21	20		200	011	20			70	00		10.5	٠.		20	_	2	25	
NR-13KL	9.52	11.5	32	2 110	7.5	3.2	89	21	32		308	211	39	48	60	73	20		13.5	21		30	3	PT.3/8	75	28
NR-24KL	12.7	16 5	34	2-M6	9	1.2	120	24	20		408	274	45		C.4	70	10.75	6.5		21		25			00	
NR-30KL	12.7	16.5	34		9	4.2	126	24	36		420	286	45	51	64	76	18.75		14.5	31		25	4	PT.3/8	90	28
NR-43KL							132			2	101						24		17.5							
NR-52KL							132			3	484	344	57			84	24	^	17.5	51	8	00		PT.1/2	97	28
NR-65KL	15 07	10 5	4.4	2 140	0.5	F 2	110	20	20.5		470				00		20	9				30	_			
NR-75KL	15.67	19.5	44	2-M8	9.5	5.2	118	20	26   39.5   -	498	372	66		80		30		20				5	PT.1/2			
NR-88KL							100			500	400	64			89			20	54		0.5			114	28	
NR-100KL							132		56	560	420					28	10				35		PT.1/2			

### NR-T large torque checker unit runner T series

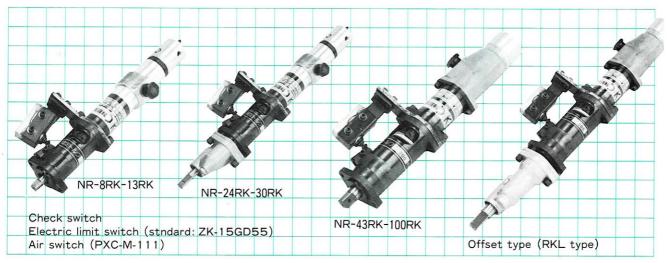


Model number		d speed P.M.)		ng torque ;-m)	Lower limit check torque range	Air consumption (m³/min)	Weight (kg)	Hose connection screw size
	3.0kg/cm <sup>2</sup>	4.0kg/cm <sup>2</sup>	3.0kg/cm²	4.0kg/cm <sup>2</sup>	(kg-m)	(11711111)	(1.87	(PF)
NR-130T	100	180	9.8	12.5	9.0~12.0		5.7	
NR-160T	130	145	12.0	15.2	12.0~14.0	0.9	5.7	3/8"
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"



Model number	Α	В	D	E	F	G	Н	1	K	L	l	М	N	0	Р	S	W	Y	EX
NR-130T	15.87	19			9		31	18		453	422	65	76	90		50	98		
NR-160T				2 .40		5.2			2	432	393	70			84	103		28	PT.1/2
NR-200T	19.05	24	58	3-M8	13	5.2	39	25	3	446	407	70	82	96	04	103	98	20	
NR-250T										463	424	71				108			-

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



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

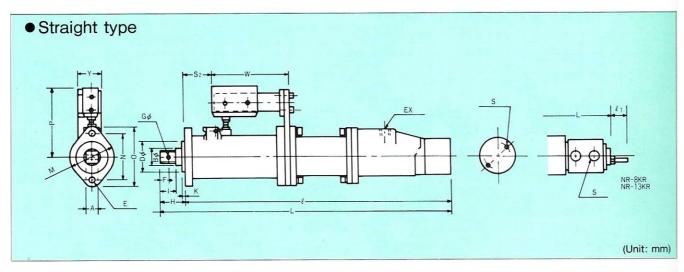
Model number		d speed P.M.)		ng torque -m)	Lower limit check torque range	Air consumption	Hose connection screw size	Weight (kg)		
	3.0kg/cm²	4.0kg/cm <sup>2</sup>	3.0kg/cm² 4.0kg/cm²		(kg-m)	(m³/min)	(PF)	Straight type	Offset type	
NR-8RK	360	420	0.40	0.50	0.2~0.45	0.05	0.1/*	2.0	0.0	
NR-13RK	200	230	0.72	0.95	0.5~0.8	0.25	2-1/8"	2.0	2.6	
NR-8RKH	720	820	0.40	0.50	0.2~0.45		2-1/4"	2.6	3.3	
NR-13RKH	370	430	0.72	0.95	0.5~0.8	0 22		2.6	3.3	
NR-24RK	260	240	1.3	1.6	0.8~1.5	0.33	2-1/4"	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			4.4	5.0	
NR-52RK	220	250	2.6	3.1	2.4~2.9	0.65	0.14"	4.4	5.0	
NR-65RK	190	210	3.2	3.8	3.0~3.7	0.65	2-1/4"	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	0.00	2.3/"	6.8	8.0	
NR-100RK	160	175	5.2	6.3	5.0~6.2	0.90	2-3/8"	6.8	8.0	

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

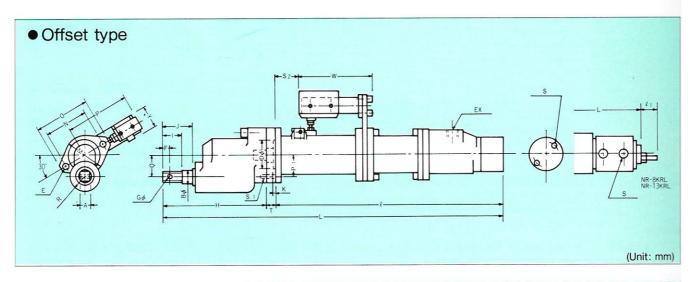
#### Notes:

- 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 depnding 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.

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

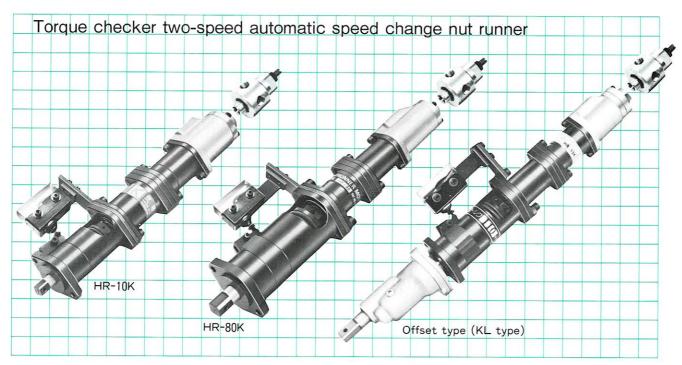


Model number	Α	Вφ	$D\phi$	E	F	Gφ	Н	1	K	L	l	М	N	0	Р	l	S	W	EX	S	Y
NR-8KR	0.53	12	32		5	3.2	21	11		280	259	39	48	60	73	10		75	PT.3/8	21	28
NR-13KR	9.52	12	32	2-M6-	J	3.2	21	11		200	233	33	40	00	75	10	2-	7.5	1 1.78		20
NR-24KR	12.7	17	34	Z-1VIO	8	4.2	26	16		307	281	45	51	64	76		PT. 1/8	90	PT.3/8	31	28
NR-30KR	12.7	17	34		0	4.2	20	10		319	293	43	31	04	70			50	1 1.78	51	20
NR-43KR									3												
NR-52KR									J	385	354	57			84	_	2-	97	PT.1/2	51	28
NR-65KR	15.87	19	44	2-M8	9	5.2	31	18					- 66	80			PT.1/4				
NR-75KR	13.07	19	44	Z-1VIO	J	3.2	31	10		413	382		00	00							
NR-88KR										457	426	64			89		2-	114	PT.1/2	54	28
NR-100KR										437	420						PT.3/8				



Model number	Α	$B\phi$	$D\phi$	E	F	$G\phi$	I	1	J	K	L	l	M	N	0	Р	Q	R	W	Т	Р	Sı	S	l1	EX	S <sub>2</sub>	Y
NR-8KRL	0.52	11.5	32		7.5	3.2	89	21	32		356	259	39	48	60	73	20	13.5	75		30	3		10	PT.3/8	21	28
NR-13KRL	9.52	11.5	34	-2-M6		3.2	03	21	32		330	233	33	40	00	13	20	13.3	13		30	J	2-	10	1 1./8		20
NR-24KRL	12.7	16 5	34	1 Z-IVIO	9	4.2	126	24	36		415	281	45	51	64	76	18.75	14.5	90		25	4	PT.1/8		PT.3/8	31	28
NR-30KRL	14.7	16.5	34		9	4.2	120	24	30		427	293	43	31	04	70	10.73	14.3	30		23	4			1 1./8	31	20
NR-43KRL							132			3	494						24	17.5		8							
NR-52KRL							132			3	494	354	57			84	24	17.5	97	0	30		2-	_	PT.1/2	51	28
NR-65KRL	15 07	10 5	44	2-M8	0 E	5.2	118	26	39.5		480			66	80		30					- 5	PT.1/4				
NR-75KRL	15.87	19.5	44	Z-1VIO	9.5	5.2	110	20	33.3		508	382		00	00			20				3					
NR-88KRL							132				566	426	64			89	28	20	114		35		2-		PT.1/2	54	28
NR-100KRL							132				300	420					20						PT.3/8				

### **■**Performance



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

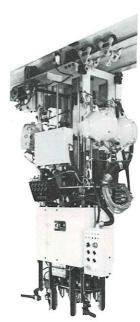
(The following values apply at 4.0 kg/cm<sup>2</sup> of air pressure.)

Model number	No-load speed (R.P.M.)	Lower limit check torque range (kg-m)	Standard tightening torque (kg-m)	Air consumption (m³/min)	Weight (kg)	Hose connection screw size (PF)
HR-10K	540	0.3~1.0	1.1	0.15	1.9	
HR-15K	540	1.0-2.0	2.4	2.0		
HR-30K	540	1.5-2.5	3.0	0.2	2.6	1/4"
HR-50K	430	2.5~5.0	5.0	0.05	4.0	
HR-80K	290	5.0~7.5	8.0	0.25	4.8	

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

#### 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 dipnding 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.



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