# 10:1 Ratio Torque Multiplier MODEL **DECA**

To Users

To use this product properly and safely, please read this operating instruction carefully before use.

If you have any question about the product and its operations, please contact your nearest distributor or

TOHNICHI MFG. CO., LTD. This operating instruction should be stored in a safe place.





### Safety Precautions

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#### The safety alert symbol

This symbol means Attention! become alert! Your safety is involed.

Take prevenitive measures in this manual and performing "safety use and appropriate management."

Signal Words

The signal words are the headers which indicate the level of hazard that should be known for human safety in handling devices. The signal words for safety are "Danger", "Warning" and "Caution" depending on the level of hazard to human. The signal words are used with the safety symbol to indicate the following situations.

Danger" : Imminent danger acting as a serious obstacle.

Warnings" : A potential risk of becoming a serious obstacle.

Cautions": A potential risk of becoming anobstacle although it does not result seriously.

## L Danger

If a screw is tightened by DECA, a reaction force causes a reaction arm (a universal arm, etc.) to move in the direction opposite to the tightening direction. Be fully careful not to get your finger and foot caught.

# Warnings

(1) Apply the universal arm and a shell arm to an adjacent projection, etc. at a right angle as much possible so that DECA will not tumble. (See the illustration showing an example of using the universal arm.)

Tilting of DECA may result in poor tightening torque accuracy, or breakage of DECA itself and the reaction arm.

(2) DECA's output torque is 10 times higher than its input torque and controlled by input. Do not apply the input torque equal to or greater than 1/10 of the output torque (torque measurement range), because it may break DECA itself and the reaction arm.

# Cautions

- (1) Do not disassemble DECA. Failure to observe this may result in poor accuracy.
- (2) Do not use DECA in the rain. Failure to observe this may result in poor accuracy.
- (3) Inspect and calibrate DECA periodically to maintain torque accuracy.
- (4) When DECA is not used for a long period of time, store it in a low-moisture place.
- (5) If you feel anything unusual while using DECA, stop using it and contact our distributor or TOHNICHI MFG. CO., LTD.
- (6) For repair, consult our distributor or TOHNICHI MFG. CO., LTD.

## Precautions for Use

- (1) Attach the optional reaction arm (universal arm) to the hexagonal part of DECA. Fit DECA's accessory arm stop ring into the hexagonal groove to secure the reaction arm.
- (2) Attach a socket (optional) suitable for the screw size to the output square drive.
- (3) Apply the reaction arm (universal arm), an arm plate and an arm pin to the projection adjacent to a bolted joint (bolt and nut) to cover the bolted joint with the socket.
- (4) Attach a torque wrench, whose input torque is 1/10 of a tightening torque, to the input square drive of DECA.
- (5) Now, you can turn the torque wrench attached to the input square drive to do tightening.
- Temporary tightening can be quickly done by turning a "quick traverser" before finally tightening with the torque wrench.
- For a torque wrench with a ratchet head such as QL, if the "quick traverser" is held with a single hand when returning the torque wrench, the input square drive can be prevented from returning, allowing efficient work.



Using the universal arm

- (1) The universal arm is constructed as shown in Fig. 2.
- (2) Make sure that the contact angle  $\theta$  between the universal arm and a reaction force receiving part should be 30° or less. (Fig. 3)
- (3) Combine the universal arm according to a reaction force receiving position.
- (See example of using the universal arm.)

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Example of using the universal arm



Torque wrench





## Specifications

#### Accuracy ±5%

S.I. MODEL	CAPACITY	METRIC	TORQUE RATIO	GEAR RATIO	DIMENSION [mm]									IGHT	AMERICAN CAPACITY
	[N•m]	[kgfm]				D1	HEAD			BODY			WE	[lbf•im]	
	MIN:~MAX.	MIN:~MAX.			Ľ	DI	а	b	C	e	L2	L3	W	[kg]	MIN:~MAX.
DECA450N	90~450	9~45		125.1	194	52	19.05	20.5	10.2	9.53	60	96.5	36	2	65 ~325
DECA900N	180~900	18~90		12.J.1	241	63	25.4	26.5	15	10.7	75	120.5	41	3.4	130~650
DECA1800N	360~1800	36~180			270	77.5	25.4	26.5	15	12.7	85	141.5	50	5.7	260~1300
DECA3000N	600~3000	60~300	10:1		324	95	31.75	34	16	10.05	90	177.5	60	10	434~2170
DECA4500N	900~4500	90~450		14.4:1	367	110	38.1	42	19	19.05	100	199	70	12.5	650~3250
DECA9000N	1800~9000	180~900			464	140	50.8	56	25.5	25.4	12	249	85	34	1300~6500
DECA18000N	3600~18000	360~1800			540	172	63.5	55.6	38.1	25.4	145	299	110	60	2600~13000

1. Metal Case (for DECA450N ~DECA3000N only)

2. Metal Case, Hand Hold Handle (for DECA4500N and DECA9000N only)

3. Metal Case, Caster (for DECA18000N only)





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