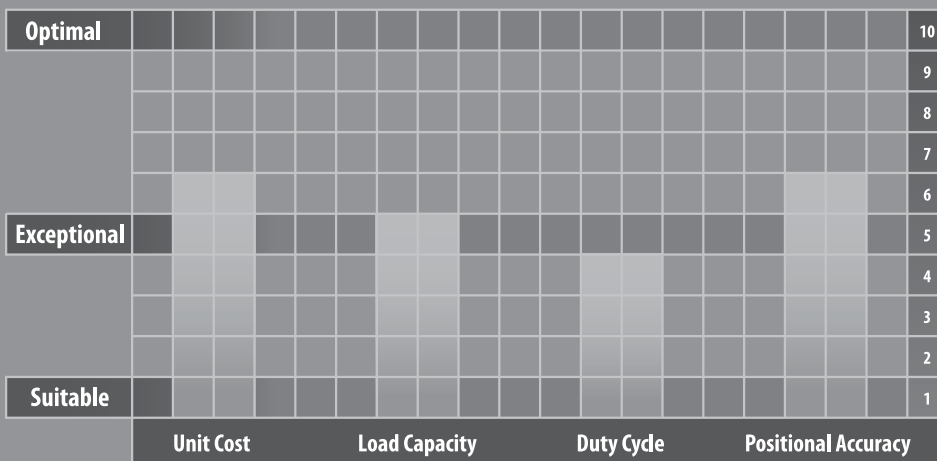


STH-SERIES

The STH is a mid-range speed and torque gear reducer that sets a new standard for rotary positioning performance at an exceptional price point. A SHIMPO ABLE planetary gearbox is the interface between the servo motor and STH rotary stage. The ABLE reducer features simple mounting of nearly any small to medium servo motor, and it gives the complete STH package net ratios ranging from 12:1 through 400:1.

The rotary stage has very large crossed roller output bearings, allowing for impressive thrust loads and tilting moments. A generous hollow bore provides clearance for wiring, tubing, or threaded rod to be passed through to effectors, fillers, or any other active machinery. The STH fills the need for a high-performance, price competitive option to your traditional style indexers and cam units.



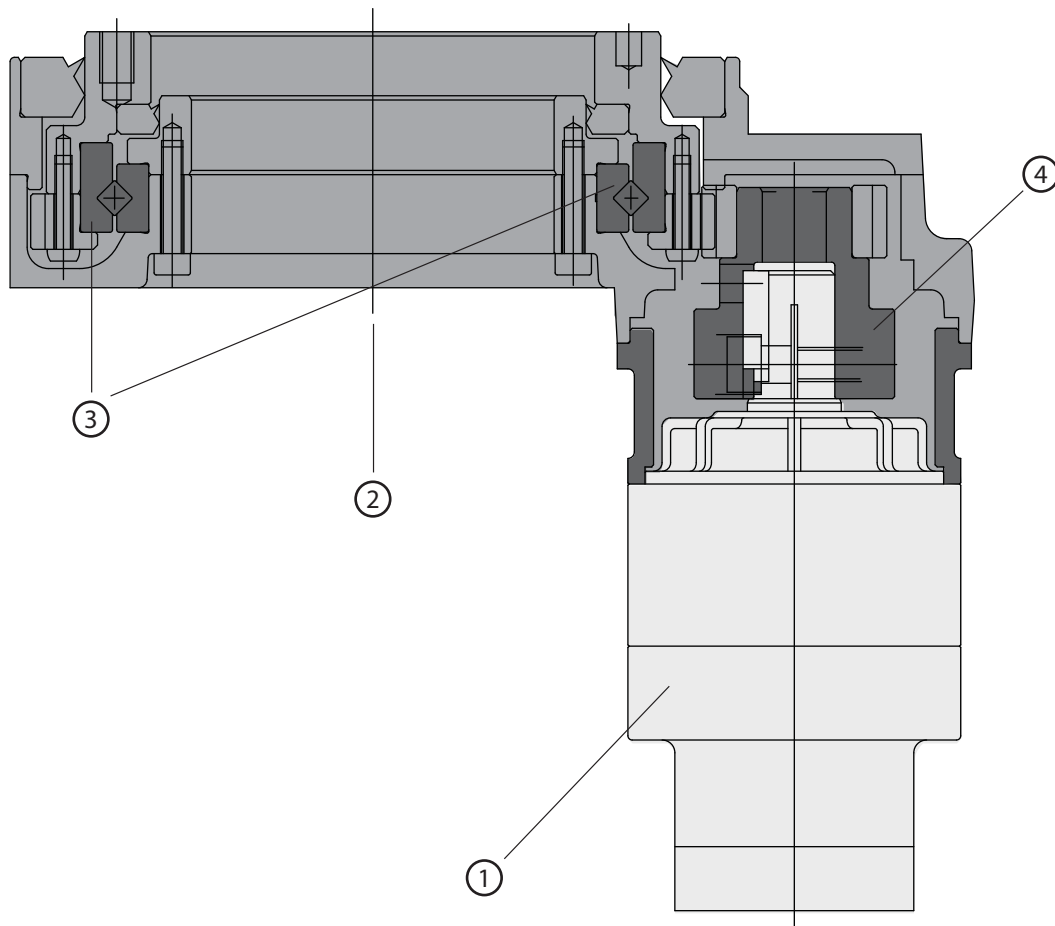


STH-SERIES

- 85 mm pass-through hole allows use of air lines or wiring
- Input is compatible with most servo motor brands
- Exceptional value for small to mid-range indexing applications
- Available ratios range from 12:1 through 400:1
- Ships within 48 hours
- Assembled in the USA

STH-SERIES Hollow output rotary actuators

STH-Series – Features



- ① One or two stage planetary reducer
- ② 85 mm hollow bore diameter
- ③ Heavy duty cross-roller bearing
- ④ Final stage primary gear

STHVL7 and STHEL7 Series – Model Code

STH	V	L	7	U	1	0	0	9	1	9	H	A	1	9	0	0
Model	Input			Input Unit Direction	Ratio			Backlash	Reducer Input Bore		Motor Attachment	Motor Shaft OD		Modifications		

Model

Order Code

STH	Hollow output
-----	---------------

Input

Order Code

VL7	VRL-070
EL7	EVL-070

Input Unit Direction

Order Code

0	VRL input
U	R/A - Up
D	R/A - Down
R	R/A - Right
L	R/A - Left

Backlash

Order Code

2	2 Arc-min
8	8 Arc-min

Ratio

Order Code

012	Double Reduction w/ VRL	12:1	
016		16:1	
020		20:1	
028	Triple Reduction w/ EVL	28:1	
040		40:1	
060	Triple Reduction w/ VRL	60:1	
080		80:1	
100		100:1	
120		120:1	
140		140:1	
160		Quadruple Reduction w/ EVL	160:1
200			200:1
280			280:1
400	400:1		

Reducer Input Bore

Order Code

08	8 mm
14	14 mm
19	19 mm

Motor Shaft OD

Order Code

05	5 mm
06	6 mm
N1	6.35 mm
07	7 mm
08	8 mm
09	9 mm
N2	9.525 mm
10	10 mm
11	11 mm
12	12 mm
N3	12.7 mm
14	14 mm
N4	15.875 mm
16	16 mm
17	17 mm
19	19 mm

Modifications/Motor Attachment Tapped Holes

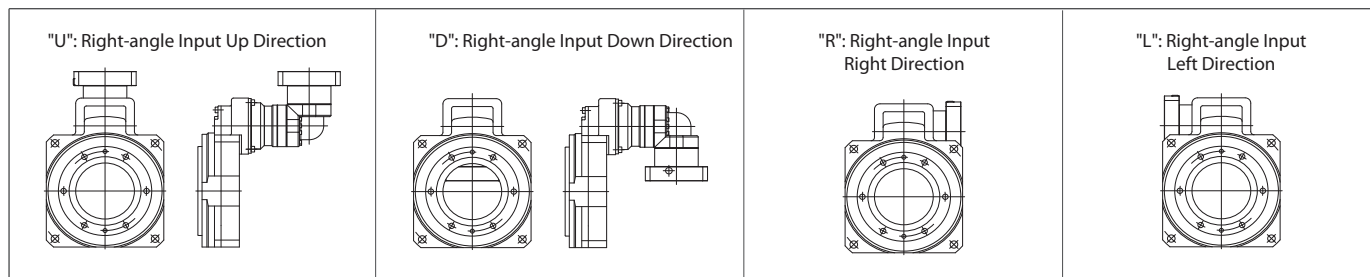
Order Code

00	Standard
I	IP65 - standard grease
F	N/A
G	N/A
S	Steel-It paint - standard grease - IP65
W	White epoxy paint - standard grease - IP65
X	N/A
F	N/A
T	Re-tap adapter flange one size larger
H	Through hole on motor attachment flange
L	Larger through hole on adapter flange
B	Pilot diameter reduced
R	Deeper adapter flange/add spacer plate
A_	Specify

Notes:

Use 0's (zeros) for unused modification.

Input Unit Direction (Right-angle Detail)



STH-SERIES Hollow output rotary actuators

STHVL7 2-Stage & 3-Stage Specifications

Frame Size	STHVL7								
Stage	Units	Notes	2-Stage					3-Stage	
Ratio	--	*1	12:1	16:1	20:1	28:1	40:1	60:1	80:1
Nominal Torque 1	[Nm]	*2	65	85	85	85	68	68	85
Acceleration Torque	[Nm]	--	126	170	170	170	133	133	170
Emergency Stop Torque	[Nm]	--	240	240	240	240	240	240	240
Nominal Input Speed	[rpm]	--	3000					3000	
Max. Input Speed	[rpm]	--	6000					6000	
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	*3	1.109	0.640	0.426	0.240	0.143	0.094	0.076
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	*3	1.189	0.715	0.509	0.318	0.227	0.179	0.152
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	*3	1.399	0.925	0.709	0.528	0.427	0.389	0.372
Backlash	[arc-min]	--	2					2	
Accuracy	[arc-sec]	--	± 60					± 60	
Torsional Stiffness	[Nm/arc-min]	--	7.6					7.6	
Weight	[kg]	--	7.6					7.8	
Max. Axial Load	[N]	--	4000					4000	
Max. Radial Load	[N]	--	5000					5000	
Max. Tilting Moment Load	[Nm]	--	200					200	
Max. Surface Runout	[mm]	--	0.070					0.070	
Max. Deflection	[mm]	--	0.70					0.70	
Efficiency	[%]	--	86	86	90	90	90	86	86
Noise Level	[dB]	--	72	72	65	65	65	65	65
Max. Ambient Temperature	$^{\circ}\text{C}$	--	0-40					0-40	
Max. Surface Temperature	$^{\circ}\text{C}$	--	90					90	
Lubrication	--	--	Grease					Grease	
Protection	--	*4	IP54 (IP65)					IP54 (IP65)	
Unit Life	hr	--	20000					20000	

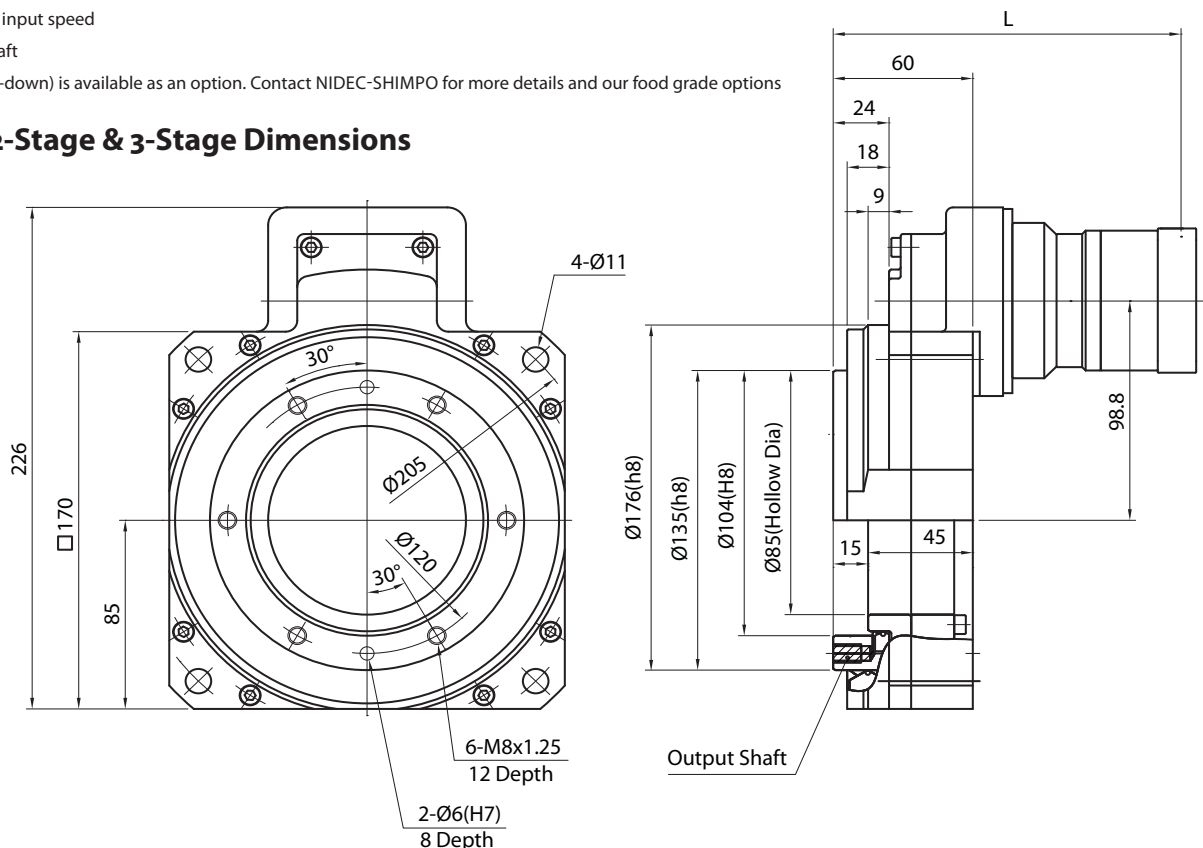
*1) Contact NIDEC-SHIMPO for more optional ratios

*2) At nominal input speed

*3) At input shaft

*4) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

STHVL7 2-Stage & 3-Stage Dimensions



STHVL7 3-Stage Specifications

Frame Size	STHVL7								
Stage	Units	Notes	3-Stage						
Ratio	--	*1	100:1	120:1	140:1	160:1	200:1	280:1	400:1
Nominal Torque 1	[Nm]	*2	85	68	85	85	85	85	68
Acceleration Torque	[Nm]	--	170	133	170	170	170	170	133
Emergency Stop Torque	[Nm]	--	240	240	240	240	240	240	240
Nominal Input Speed	[rpm]	--	3000						
Max. Input Speed	[rpm]	--	6000						
Moment of Inertia (≤Ø 8)	[kgcm ²]	*3	0.067	0.059	0.060	0.054	0.052	0.051	0.050
Moment of Inertia (≤Ø 14)	[kgcm ²]	*3	0.144	0.140	0.137	0.135	0.133	0.132	0.131
Moment of Inertia (≤Ø 19)	[kgcm ²]	*3	0.364	0.350	0.357	0.345	0.343	0.342	0.341
Backlash	[arc-min]	--	2						
Accuracy	[arc-sec]	--	±60						
Torsional Stiffness	[Nm/arc-min]	--	7.6						
Weight	[kg]	--	7.8						
Max. Axial Load	[N]	--	4000						
Max. Radial Load	[N]	--	5000						
Max. Tilting Moment Load	[Nm]	--	200						
Max. Surface Runout	[mm]	--	0.070						
Max. Deflection	[mm]	--	0.70						
Efficiency	[%]	--	86	86	86	86	86	86	86
Noise Level	[dB]	--	65	65	65	65	65	65	65
Max. Ambient Temperature	°C	--	0-40						
Max. Surface Temperature	°C	--	90						
Lubrication	--	--	Grease						
Protection	--	*4	IP54 (IP65)						
Unit Life	hr	--	20000						

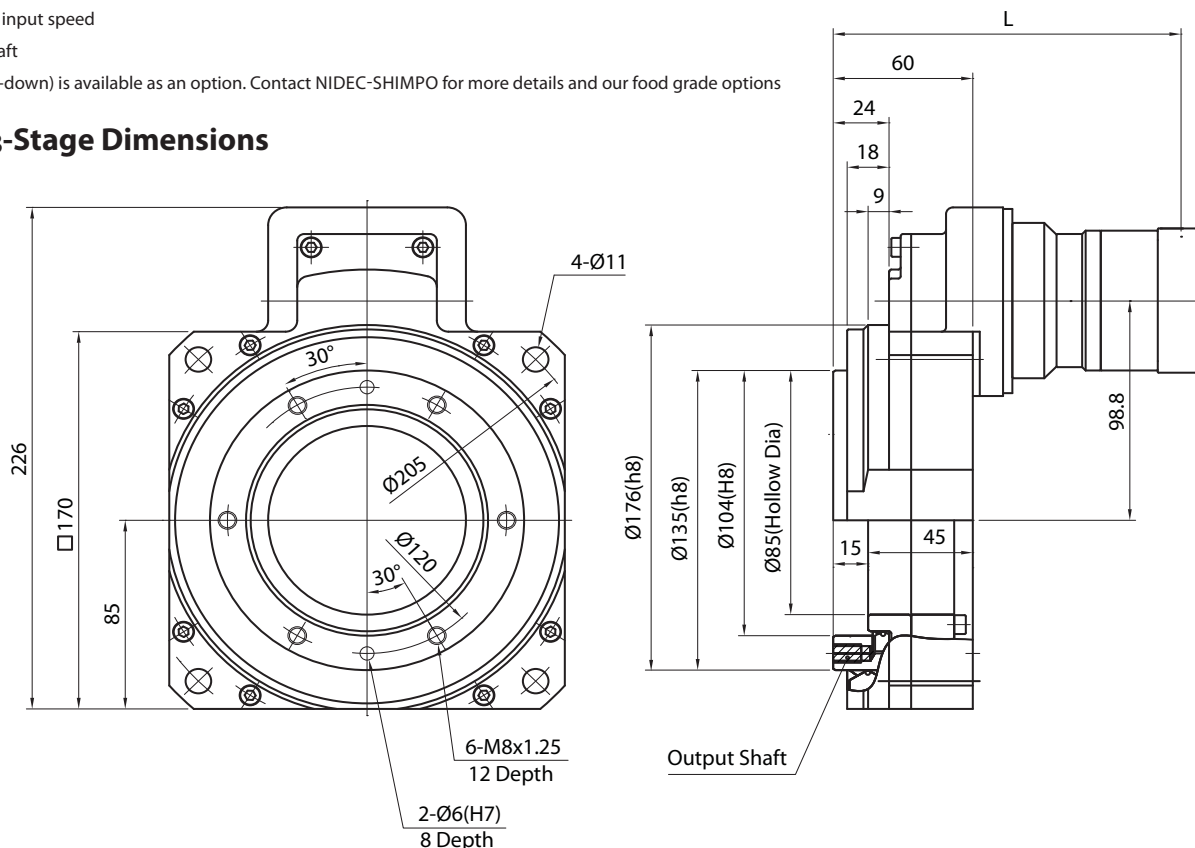
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STHVL7 3-Stage Dimensions



STH-SERIES Hollow output rotary actuators

STHEL7 2-Stage & 3-Stage Specifications

Frame Size	STHEL7								
Stage	Units	Notes	2-Stage					3-Stage	
Ratio	--	*1	12:1	16:1	20:1	28:1	40:1	60:1	80:1
Nominal Torque 1	[Nm]	*2	43	58	84	85	61	61	85
Acceleration Torque	[Nm]	--	86	115	152	170	122	122	170
Emergency Stop Torque	[Nm]	--	180	234	240	240	204	240	240
Nominal Input Speed	[rpm]	--	3000					3000	
Max. Input Speed	[rpm]	--	6000					6000	
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	*3	1.280	0.811	0.597	0.412	0.314	0.112	0.093
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	*3	1.355	0.886	0.672	0.487	0.389	0.157	0.138
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	*3	1.544	1.075	0.862	0.676	0.578	--	--
Backlash	[arc-min]	--	8					8	
Accuracy	[arc-sec]	--	± 60					± 60	
Torsional Stiffness	[Nm/arc-min]	--	7.6					7.6	
Weight	[kg]	--	8.0					7.8	
Max. Axial Load	[N]	--	4000					4000	
Max. Radial Load	[N]	--	5000					5000	
Max. Tilting Moment Load	[Nm]	--	200					200	
Max. Surface Runout	[mm]	--	0.070					0.070	
Max. Deflection	[mm]	--	0.70					0.70	
Efficiency	[%]	--	84	84	88	88	88	84	84
Noise Level	[dB]	--	72	72	65	65	65	65	65
Max. Ambient Temperature	$^{\circ}\text{C}$	--	0-40					0-40	
Max. Surface Temperature	$^{\circ}\text{C}$	--	90					90	
Lubrication	--	--	Grease					Grease	
Protection	--	*4	IP54 (IP65)					IP54 (IP65)	
Unit Life	hr	--	20000					20000	

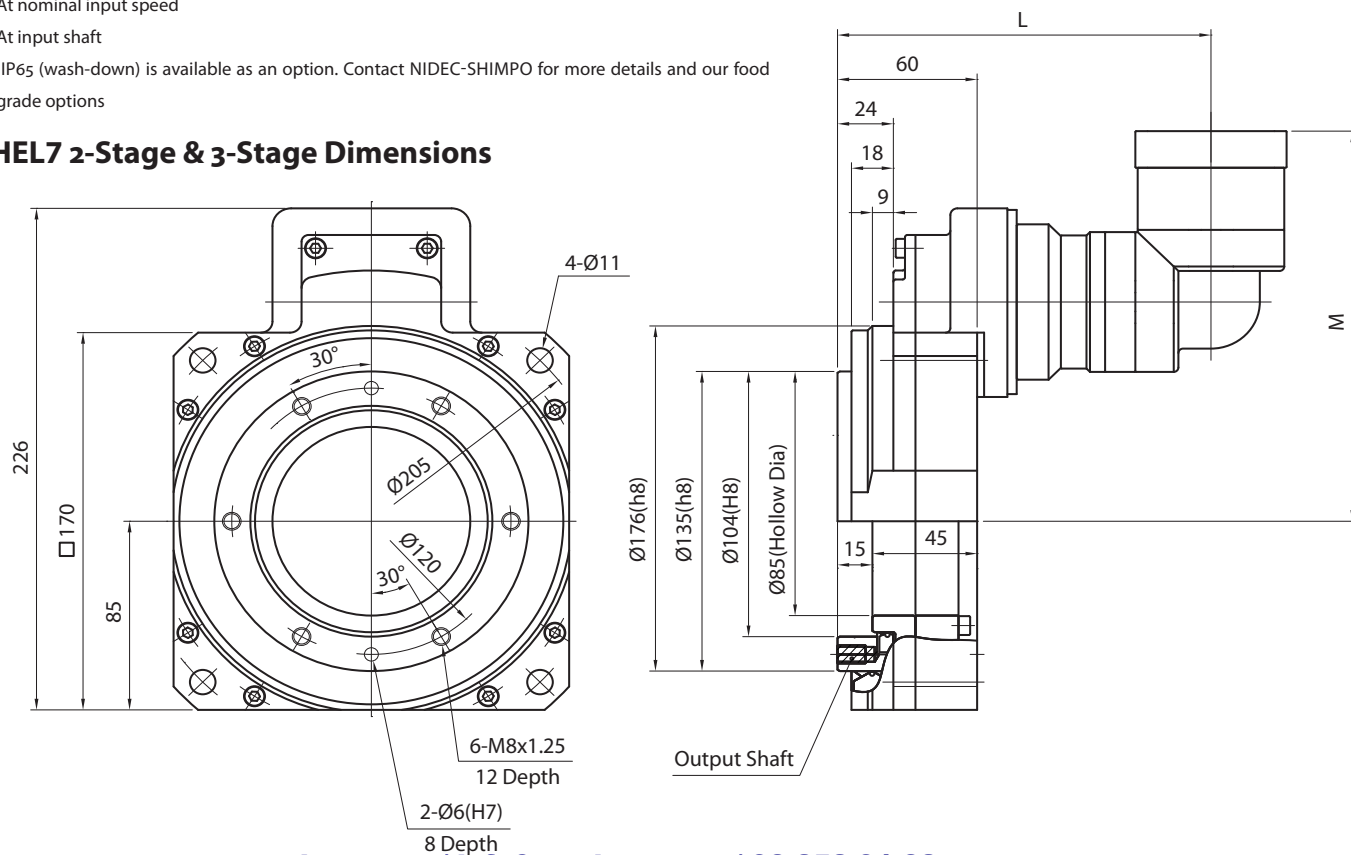
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*3) At input shaft

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STHEL7 2-Stage & 3-Stage Dimensions



STHEL7 3-Stage Specifications

Frame Size	STHEL7								
Stage	Units	Notes	3-Stage						
Ratio	--	*1	100:1	120:1	140:1	160:1	200:1	280:1	400:1
Nominal Torque 1	[Nm]	*2	85	61	85	85	85	85	61
Acceleration Torque	[Nm]	--	170	122	170	170	170	170	122
Emergency Stop Torque	[Nm]	--	240	240	240	240	240	240	240
Nominal Input Speed	[rpm]	--	3000						
Max. Input Speed	[rpm]	--	6000						
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	*3	0.085	0.072	0.077	0.066	0.064	0.063	0.062
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	*3	0.129	0.116	0.122	0.111	0.108	0.106	0.106
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	*3	--	--	--	--	--	--	--
Backlash	[arc-min]	--	8						
Accuracy	[arc-sec]	--	± 60						
Torsional Stiffness	[Nm/arc-min]	--	7.6						
Weight	[kg]	--	7.8						
Max. Axial Load	[N]	--	4000						
Max. Radial Load	[N]	--	5000						
Max. Tilting Moment Load	[Nm]	--	200						
Max. Surface Runout	[mm]	--	0.070						
Max. Deflection	[mm]	--	0.70						
Efficiency	[%]	--	84	84	84	84	84	84	84
Noise Level	[dB]	--	65	65	65	65	65	65	65
Max. Ambient Temperature	$^{\circ}\text{C}$	--	0-40						
Max. Surface Temperature	$^{\circ}\text{C}$	--	90						
Lubrication	--	--	Grease						
Protection	--	*4	IP54 (IP65)						
Unit Life	hr	--	20000						

*1) Contact NIDEC-SHIMPO for more optional ratios

*2) At nominal input speed

*3) At input shaft

*4) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

STHEL7 3-Stage Dimensions

