



Premium Torque Arms

Products and Solutions for Assembly



Automation Product Group Engineered Performance

The ASG Automation group provides custom solutions to meet both the imminent and inevitable expectations of our clients. Underpinned by world class knowledge of threaded fastening, our systems are distinctive in their operation; providing market leading precision. With robust elements of flexibility and expansion built in, the systems are designed to persevere life cycle changes to provide our customers with the ultimate automated solution.

About ASG

We are personally committed to understanding and exceeding our customers' requirements. We are committed to continuously improving our products and processes.

We are dedicated to delivering products, services, and solutions on time and at a competitive value.

ASG, Division of Jergens, Inc. is an ISO 9001:2008 certified manufacturer, provider and service center for products and solutions focused around assembly. Since the 1970s, we have developed a first-class reputation unrivaled in the industry offering a wide range of world class products through our various world wide locations.

We offer a wide selection of products including: electric, pneumatic and manual torque control screwdrivers; torque and angle control precision fastening systems; automatic screw feeders and screw presenters; torque testers and calibration services; custom designed automation equipment as well as a full line of accessories.

ASG also offers a selection of value-added products and solutions including engineering and consulting services, financing, and extended protection and maintenance plans.



Industry Commitment

ASG is committed to the highest quality standards, ensuring that all processes and procedures are followed to produce the best products for our customers. We maintain ISO 9001:2008 certification for the manufacture, distribution, and service of assembly tools. Maintaining membership in key industry organizations in order to stay abreast of the most current industry trends and information is vital to serving our customers.



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Section 1: Telescoping Torque Arms

TTA Series Telescoping Torque Arms

Degree Angle of Tool Holder Movement



- Torque reaction is kept perpendicular to arm axis
- Efficient design for torque reaction
- High strength carbon fiber arm
- **When purchasing a Telescoping Torque Arm, the following also must be purchased:**
 - (1) Tool Holder (unless noted as included)
 - (1) Tool Balancer
- **NOTE:** Suggested standard tool holder and standard tool balancer are listed in the main chart below.
- **NOTE:** For specifications on the suggested options, please see the **Standard Tool Holder Specifications** and **Standard Tool Balancer Specifications** charts on the next page. If in need of a different option, additional products, information and images can be found on pages 18 (Tool Holder) and 24 (Tool Balancer).
- Optional balancer bracket kit (ASG #90023) is available to keep the balancer cable in a protected position.



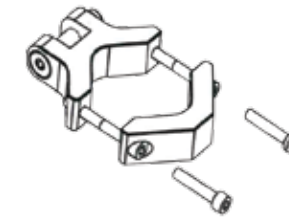
Telescoping Torque Arms

Suggested Standard Tool Holder and Balancer Specifications

Additional information and images can be found on page 18 (Tool Holder) and 24 (Tool Balancer)

Standard Tool Holder Specifications		
ASG Number	Tool Grip Diameter	
90002	27 - 45 mm	1.1 - 1.8 in.
90004	30 - 60 mm	1.2 - 2.4 in.
90006	40 - 70 mm	1.6 - 2.8 in.

Standard Tool Balancer Specifications		
ASG Number	Weight Range	
90080	1 - 2 kg	2.2 - 4.4 lb.
90081	2 - 4 kg	4.4 - 8.8 lb.
90082	4 - 6 kg	8.8 - 13.2 lb.



ASG #90002

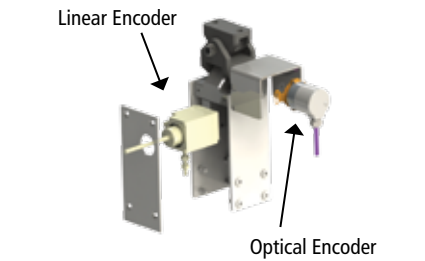
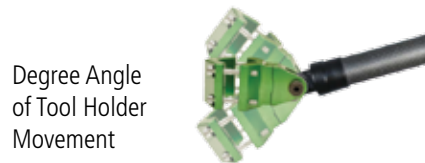


Optional Tool Balancer Kit Bracket ASG #90023

ASG Model Number	ASG Number	Max. Torque		Min. Reach		Max. Reach		Degree Angle of Tool Holder Movement	Weight		Suggested Standard Tool Holder ASG Number	Suggested Standard Tool Balancer ASG Number	Optional Balancer Kit Bracket ASG Number
		lbf.ft	N.m	in.	mm	in.	mm		lb.	g			
TTA010-1000	80001	7.38	10.0	19.49	495	43.5	1105	90°	0.87	395	INCLUDED	90080	N/A
TTA010-1500	80002	7.38	10.0	26.18	665	63.19	1605	90°	0.99	451	INCLUDED	90080	N/A
TTA015-1000	80003	11.06	15.0	19.13	486	41.97	1066	60°	1.47	668	90002	90080	90023
TTA015-1500	80004	11.06	15.0	25.43	646	61.26	1556	60°	1.60	727	90002	90080	90023
TTA015-2000	80005	11.06	15.0	31.73	806	80.55	2046	60°	1.73	786	90002	90080	90023
TTA040-1000	80006	29.5	40.0	19.13	486	41.97	1066	50°	1.62	733	90004	90080	90023
TTA040-1500	80007	29.5	40.0	25.43	646	61.26	1556	50°	1.81	820	90004	90080	90023
TTA040-2000	80008	29.5	40.0	31.73	806	80.55	2046	50°	2.01	913	90004	90080	90023
TTA040-2500	80009	29.5	40.0	38.82	986	101.42	2576	50°	2.2	999	90004	90080	90023
TTA080-1500	80010	59.0	80.0	25.91	658	62.44	1586	40°	2.05	930	90004	90081	90023
TTA080-2000	80011	59.0	80.0	32.6	828	81.81	2078	40°	2.27	1028	90004	90081	90023
TTA080-2500	80012	59.0	80.0	39.29	998	101.89	2588	40°	2.48	1127	90004	90081	90023
TTA150-1500	80013	110.63	150.0	26.3	668	62.13	1578	30°	3.08	1395	90006	90082	90023
TTA150-2000	80014	110.63	150.0	32.99	838	75.51	1918	30°	3.41	1548	90006	90082	90023
TTA150-2500	80015	110.63	150.0	39.49	1003	88.5	2248	30°	3.79	1720	90006	90082	90023
TTA220-1500	80016	162.26	220.0	26.3	668	62.13	1578	20°	3.49	1585	90006	90082	90023
TTA220-2000	80017	162.26	220.0	32.99	838	82.2	2088	20°	3.91	1771	90006	90082	90023
TTA220-2500	80018	162.26	220.0	39.49	1003	101.89	2588	20°	4.4	1995	90006	90082	90023

Telescoping Torque Arms

TPTA-2E Series Telescoping Torque Arms with 2 Encoders



- Torque reaction is perpendicular to arm axis
- Tool positioning detection on X-Y axis
- Designed for use with the ASG Nav-P 4.0 System
- Ensures the correct tightening sequence
- Torque arm with wall attachment included
- **When purchasing a Telescoping Torque Arm with 2 Encoders, the following also must be purchased:**
 - (1) Tool Holder
 - (1) Tool Balancer
 - (1) ASG Nav-P 4.0 System (ASG #90073)
 - (1) ASG-AC2500-IC20 and (1) ASG-AC2500-OC20 I/O cables when connecting to ASG CT-2500 controller
- **NOTE:** Suggested standard tool holder and standard tool balancer are listed in the main chart below.
- **NOTE:** For specifications on the suggested options, please see the **Standard Tool Holder Specifications** and **Standard Tool Balancer Specifications** charts on the next page. If in need of a different option, additional products, information and images can be found on pages 18 (Tool Holder) and 23 (Tool Balancer).

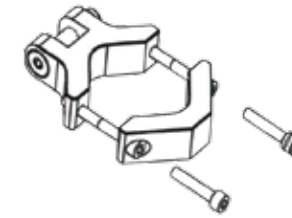
Telescoping Torque Arms

Suggested Standard Tool Holder and Balancer Specifications

Additional information and images can be found on page 18 (Tool Holder) and 23 (Tool Balancer)

Standard Tool Holder Specifications		
ASG Number	Tool Grip Diameter	
90002	27 - 45 mm	1.1 - 1.8 in.
90004	30 - 60 mm	1.2 - 2.4 in.
90006	40 - 70 mm	1.6 - 2.8 in.

Standard Tool Balancer Specifications		
ASG Number	Weight Range	
90027	1 - 2 kg	2.2 - 4.4 lb.
90028	2 - 4 kg	4.4 - 8.8 lb.
90029	4 - 6 kg	8.8 - 13.2 lb.



ASG #90002

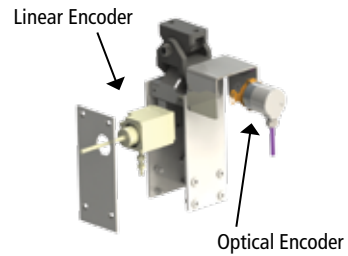
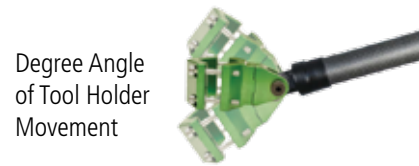


ASG Nav-P 4.0 System
ASG #90073

ASG Model Number	ASG Number	Max. Torque		Min. Reach		Max. Reach		Degree Angle of Tool Holder Movement	Suggested Standard Tool Holder ASG Number	Suggested Standard Tool Balancer ASG Number	ASG Nav-P 4.0 System ASG Number
		lbf.ft	N.m	in.	mm	in.	mm				
TPTA015-1000-2E	80019	11.06	15.0	25.47	647	48.32	1227	60°	90002	90027	90073
TPTA015-1500-2E	80020	11.06	15.0	31.61	803	67.44	1713	60°	90002	90027	90073
TPTA015-2000-2E	80021	11.06	15.0	38.48	977	87.7	2227	60°	90002	90027	90073
TPTA040-1000-2E	80022	29.5	40.0	25.47	647	48.32	1227	50°	90004	90027	90073
TPTA040-1500-2E	80023	29.5	40.0	31.61	803	67.44	1713	50°	90004	90027	90073
TPTA040-2000-2E	80024	29.5	40.0	38.48	977	87.7	2227	50°	90004	90027	90073
TPTA040-2500-2E	80025	29.5	40.0	45.57	1157	107.75	2737	50°	90004	90027	90073
TPTA080-1500-2E	80026	59.0	80.0	32.66	830	69.17	1757	40°	90004	90028	90073
TPTA080-2000-2E	80027	59.0	80.0	39.3	1000	88.54	2249	40°	90004	90028	90073
TPTA080-2500-2E	80028	59.0	80.0	46.02	1169	108.66	2760	40°	90004	90028	90073
TPTA150-1500-2E	80029	110.63	150.0	33.03	839	68.86	1749	30°	90006	90029	90073
TPTA150-2000-2E	80030	110.63	150.0	39.72	1009	82.16	2087	30°	90006	90029	90073
TPTA150-2500-2E	80031	110.63	150.0	46.22	1174	95.23	2419	30°	90006	90029	90073
TPTA220-1500-2E	80032	162.26	220.0	33.03	839	68.86	1749	20°	90006	90029	90073
TPTA220-2000-2E	80033	162.26	220.0	39.72	1009	88.94	2259	20°	90006	90029	90073
TPTA220-2500-2E	80034	162.26	220.0	46.22	1174	108.66	2760	20°	90006	90029	90073

Telescoping Torque Arms

TPTA-3E Series Telescoping Torque Arms with 3 Encoders



- Torque reaction is perpendicular to arm axis
- Tool positioning detection on X-Y-Z axis
- Designed for use with the ASG Nav-P 4.0 system
- Ensures the correct tightening sequence
- Torque arm with wall attachment included
- **When purchasing a Telescoping Torque Arm with 3 Encoders, the following must also be purchased:**
 - (1) Tool Holder
 - (1) Tool Balancer
 - (1) ASG Nav-P 4.0 System (ASG #90073)
 - (1) ASG-AC2500-IC20 and (1) ASG-AC2500-OC20 I/O cables when connecting to ASG CT-2500 controller
- **NOTE:** Suggested standard tool holder and standard tool balancer are listed in the main chart below.
- **NOTE:** For specifications on the suggested options, please see the **Standard Tool Holder Specifications** and **Standard Tool Balancer Specifications** charts on the next page. If in need of a different option, additional products, information and images can be found on pages 18 (Tool Holder) and 23 (Tool Balancer).

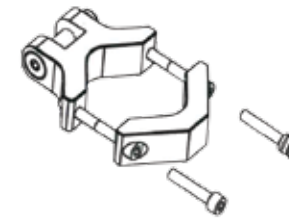
Telescoping Torque Arms

Suggested Standard Tool Holder and Balancer Specifications

Additional options, information and images can be found on page 18 (Tool Holder) and 23 (Tool Balancer)

Standard Tool Holder Specifications		
ASG Number	Tool Grip Diameter	
90002	27 - 45 mm	1.1 - 1.8 in.
90004	30 - 60 mm	1.2 - 2.4 in.
90006	40 - 70 mm	1.6 - 2.8 in.

Standard Tool Balancer Specifications		
ASG Number	Weight Range	
90027	1 - 2 kg	2.2 - 4.4 lb.
90028	2 - 4 kg	4.4 - 8.8 lb.
90029	4 - 6 kg	8.8 - 13.2 lb.



ASG #90002



ASG Nav-P 4.0 System
ASG #90073

ASG Model Number	ASG Number	Max. Torque		Min. Reach		Max. Reach		Degree Angle of Tool Holder Movement	Suggested Standard Tool Holder ASG Number	Suggested Standard Tool Balancer ASG Number	ASG Nav-P 4.0 System ASG Number
		lbf.ft	N.m	in.	mm	in.	mm				
TPTA015-1000-3E	80035	11.06	15.0	25.47	647	48.32	1227	60°	90002	90027	90073
TPTA015-1500-3E	80036	11.06	15.0	31.61	803	67.44	1713	60°	90002	90027	90073
TPTA015-2000-3E	80037	11.06	15.0	38.48	977	87.7	2227	60°	90002	90027	90073
TPTA040-1000-3E	80038	29.5	40.0	25.47	647	48.32	1227	50°	90004	90027	90073
TPTA040-1500-3E	80039	29.5	40.0	31.61	803	67.44	1713	50°	90004	90027	90073
TPTA040-2000-3E	80040	29.5	40.0	38.48	977	87.7	2227	50°	90004	90027	90073
TPTA040-2500-3E	80041	29.5	40.0	45.57	1157	107.75	2737	50°	90004	90027	90073
TPTA080-1500-3E	80042	59.0	80.0	32.66	830	69.17	1757	40°	90004	90028	90073
TPTA080-2000-3E	80043	59.0	80.0	39.3	1000	88.54	2249	40°	90004	90028	90073
TPTA080-2500-3E	80044	59.0	80.0	46.02	1169	108.66	2760	40°	90004	90028	90073
TPTA150-1500-3E	80045	110.63	150.0	33.03	839	68.86	1749	30°	90006	90029	90073
TPTA150-2000-3E	80046	110.63	150.0	39.72	1009	82.16	2087	30°	90006	90029	90073
TPTA150-2500-3E	80047	110.63	150.0	46.22	1174	95.23	2419	30°	90006	90029	90073
TPTA220-1500-3E	80048	162.26	220.0	33.03	839	68.86	1749	20°	90006	90029	90073
TPTA220-2000-3E	80049	162.26	220.0	39.72	1009	88.94	2259	20°	90006	90029	90073
TPTA220-2500-3E	80050	162.26	220.0	46.22	1174	108.66	2760	20°	90006	90029	90073

Section 2: Vertical Telescoping Torque Arms



TTAV Series Vertical Telescoping Torque Arms

- Torque reaction is perpendicular to arm axis
- Efficient design for torque reaction
- High-module carbon fiber arm
- **When purchasing a Vertical Telescoping Torque Arm, the following also must be purchased:**
 - (1) Tool Holder
 - (1) Tool Balancer
- **NOTE:** Suggested standard tool holder and standard tool balancer are listed in the main chart below.
- **NOTE:** For specifications on the suggested options, please see the **Standard Tool Holder Specifications** and **Standard Tool Balancer Specifications** charts on the next page. If in need of a different option, additional products, information and images can be found on pages 18 (Tool Holder) and 22 (Tool Balancer).

Degree Angle of Tool Holder Movement

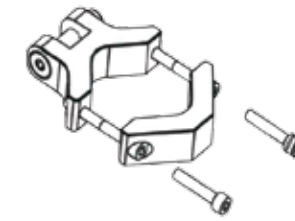


Vertical Telescoping Torque Arms

Suggested Standard Tool Holder and Balancer Specifications

Standard Tool Holder Specifications		
ASG Number	Tool Grip Diameter	
90002	27 - 45 mm	1.1 - 1.8 in.
90004	30 - 60 mm	1.2 - 2.4 in.
90006	40 - 70 mm	1.6 - 2.8 in.

Standard Tool Balancer Specifications		
ASG Number	Weight Range	
90099	1 - 2 kg	2.2 - 4.4 lb.
90100	2 - 4 kg	4.4 - 8.8 lb.
90101	4 - 6 kg	8.8 - 13.2 lb.



ASG #90002

Additional options, information and images can be found on page 18 (Tool Holder) and 22 (Tool Balancer)

ASG Model Number	ASG Number	Max. Torque		Min. Reach		Max. Reach		Degree Angle of Tool Holder Movement	Weight		Suggested Standard Tool Holder ASG Number	Suggested Standard Tool Balancer ASG Number
		lbf.ft	N.m	in.	mm	in.	mm		lb.	kg		
TTAV015-1000	80075	11.1	15.0	30.61	777	52.99	1345	60°	1.47	0.67	90002	90099
TTAV015-1500	80076	11.1	15.0	36.92	937	72.30	1835	60°	1.6	0.73	90002	90099
TTAV015-2000	80077	11.1	15.0	43.22	1097	91.61	2325	60°	1.73	0.78	90002	90099
TTAV040-1000	80078	29.5	40.0	30.61	777	52.99	1345	50°	1.62	0.73	90004	90099
TTAV040-1500	80079	29.5	40.0	36.92	937	72.30	1835	50°	1.81	0.82	90004	90099
TTAV040-2000	80080	29.5	40.0	43.22	1097	91.61	2325	50°	2.01	0.91	90004	90099
TTAV040-2500	80081	29.5	40.0	50.31	1277	112.49	2855	50°	2.2	1.0	90004	90099
TTAV080-1500	80082	59.0	80.0	37.39	949	73.48	1865	40°	2.05	0.93	90004	90100
TTAV080-2000	80083	59.0	80.0	44.09	1119	92.87	2357	40°	2.27	1.03	90004	90100
TTAV080-2500	80084	59.0	80.0	50.79	1289	112.96	2867	40°	2.48	1.12	90004	90100
TTAV150-1500	80085	110.6	150.0	37.82	960	77.13	1957.5	30°	3.08	1.4	90006	90101
TTAV150-2000	80086	110.6	150.0	44.48	1129	92.87	2357	30°	3.41	1.55	90006	90101
TTAV150-2500	80087	110.6	150.0	50.98	1294	112.76	2862	30°	3.79	1.72	90006	90101
TTAV220-1500	80088	162.1	220.0	37.82	960	77.13	1957.5	20°	3.49	1.6	90006	90101
TTAV220-2000	80089	162.1	220.0	44.48	1129	92.87	2357	20°	3.91	1.77	90006	90101
TTAV220-2500	80090	162.1	220.0	50.98	1294	112.96	2867	20°	4.4	2.0	90006	90101

Section 3: Torque Tubes



TT Series Torque Tubes

- Torque reaction is parallel to arm axis
- Anti-rotation design
- Torque arm with mounting attachment included
- Smooth sliding with ball splined shaft
- **When purchasing a Torque Tube, the following must also be purchased:**
 - (1) Tool Holder
 - (1) Tool Balancer (Inline or Right Angle)
- **NOTE:** Suggested standard tool holder and standard tool balancer are listed in the main chart below.
- **NOTE:** For specifications on the suggested options, please see the **Standard Tool Holder Specifications** and **Standard Tool Balancer Specifications** charts on the next page. If in need of a different option, additional products, information and images can be found on pages 19, 21 (Tool Holder) and 23 (Tool Balancer).

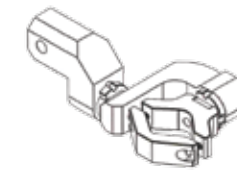
Torque Tubes

Suggested Standard Tool Holder and Balancer Specifications

Additional options, information and images can be found on page 19, 21 (Tool Holder) and 23 (Tool Balancer)

Standard Tool Holder Specifications		
ASG Number	Tool Grip Diameter	Tool Type
90041	27 - 45 mm	Inline
90044	27 - 45 mm	Inline
90042	30 - 60 mm	Right Angle
90045	31 - 65 mm	Right Angle

Standard Tool Balancer Specifications		
ASG Number	Weight Range	
90050	1 - 2 kg	2.2 - 4.4 lb.
90052	4 - 6 kg	8.8 - 13.2 lb.



ASG #90044



ASG #90042

ASG Model Number	ASG Number	Max. Torque		Max. Reach				Stroke		Suggested Standard Inline Tool Holder ASG Number	Suggested Standard Right Angle Tool Holder ASG Number	Standard Tool Balancer ASG Number
		lbf.ft	N.m	in.	mm			in.	mm			
TT015-600/150	80051	11.06	15.0	23.62	600			5.9	150	90041	90042	90050
TT015-800/300	80052	11.06	15.0	31.49	800			11.81	300	90041	90042	90050
TT040-600/150	80053	29.5	40.0	23.62	600			5.9	150	90044	90045	90050
TT040-850/300	80054	29.5	40.0	33.46	850			11.81	300	90044	90045	90050
TT040-1500/600	80055	29.5	40.0	59.05	1500			23.62	600	90044	90045	90050
TT080-900/300	80056	59.0	80.0	35.43	900			11.81	300	90044	90045	90052
TT080-1500/600	80057	59.0	80.0	59.05	1500			23.62	600	90044	90045	90052
TT080-2100/900	80058	59.0	80.0	82.67	2100			35.43	900	90044	90045	90052

Section 4: Folding Torque Arms

FTA Series Folding Torque Arms



- Folding torque arm which allows perpendicular tightening to workbench plane
- Standard tool holder included. See Standard Tool Holder Specifications chart on next page for more information.
- Encoder Arms are available. If the encoder style arm is purchased, the ASG Nav-P 4.0 System (ASG #90073) is required.
- Arms with Pneumatic Downward Assistance are available. Contact ASG for additional information.
- Arms with 3 Encoders are available, contact ASG for additional information.
- When using ASG's SD2500 screwdriver, ASG recommends the ASG SD2500 tool holder (ASG #90113). See page 20 for more information.
- **When purchasing a Folding Torque Arm, the following must also be purchased:**
 - (2) Tool Balancers
 - If an encoder arm is purchased, the ASG Nav-P 4.0 (ASG #90073) is required
 - (1) ASG-AC2500-IC20 and (1) ASG-AC2500-OC20 I/O cables when connecting to ASG CT-2500 controller
- **NOTE:** For specifications on the suggested options, see the Standard Tool Holder Specifications and Standard Tool Balancer Specifications charts on the next page. If in need of a different option, additional products, information and images can be found on pages 20 (Tool Holder) and 24 (Tool Balancer).

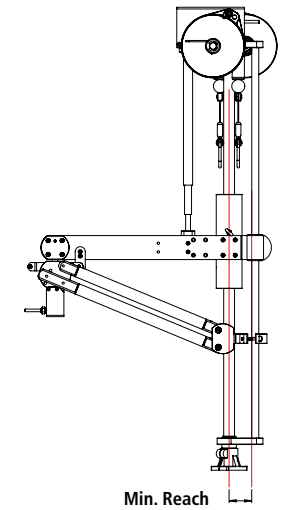
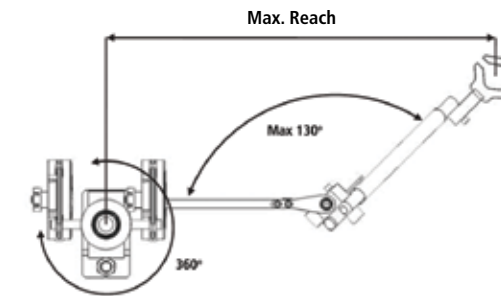
Folding Torque Arms

Suggested Standard Tool Holder and Balancer Specifications

Standard Tool Holder Specifications (Included with arm purchase)		
Torque Arm	Tool Grip Diameter	
FTA 10 and 15 N.m Models	30 - 45 mm	1.18 - 1.77 in.
FTA 40 N.m Models	30 - 55 mm	1.18 - 2.16 in.
FTA 80 N.m Models	39 - 58 mm	1.54 - 2.28 in.

Additional options, information and images can be found on page 20 (Tool Holder) and 24 (Tool Balancer)

Standard Tool Balancer Specifications			
ASG Number	Weight Range		Length
90078	1 - 2 kg/each	2.2 - 4.4 lb./each	1600 mm
90080	1 - 2 kg/each	2.2 - 4.4 lb./each	2000 mm
90081	2 - 4 kg/each	4.4 - 8.8 lb./each	2000 mm
90082	4 - 6 kg/each	8.8 - 13.2 lb./each	2000 mm

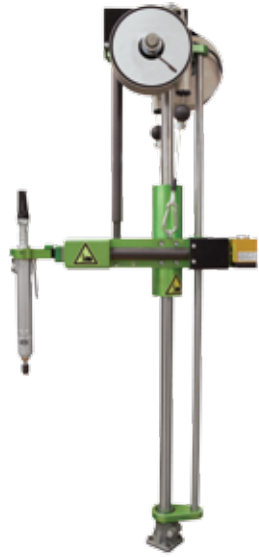


ASG Model Number	ASG Number	Max. Torque		Min. Reach		Max. Reach				Max. Tool Weight		Weight to Balance		Number of Encoders	Standard Tool Balancer ASG Number*	ASG Nav-P 4.0 System ASG Number
		lbf.ft	N.m	in.	mm	in.	mm			lb.	kg	lb.	kg			
FTA010-450	80059	7.38	10.0	4.0	102.68	17.71	450			3.3	1.5	4.4	2.0	0	90078*	N/A
FTA010-600	80060	7.38	10.0	3.8	96.36	23.62	600			3.3	1.5	4.6	2.1	0	90078*	N/A
FTA015-450	80061	11.06	15.0	4.25	108.02	17.71	450			8.82	4.0	6.6	3.0	0	90078*	N/A
FTA015-600	80062	11.06	15.0	5.6	142.80	23.62	600			8.82	4.0	7.1	3.2	0	90078*	N/A
FTA040-600	80063	29.5	40.0	4.8	122.46	23.62	600			11.02	5.0	8.2	3.7	0	90081*	N/A
FTA040-800	80064	29.5	40.0	4.6	117.62	31.5	800			11.02	5.0	8.8	4.0	0	90081*	N/A
FTA080-800	80065	59.0	80.0	5.07	128.83	31.5	800			13.23	6.0	15.43	7.0	0	90082*	N/A
FTA080-1000	80066	59.0	80.0	7.6	192.62	39.37	1000			13.23	6.0	16.1	7.3	0	90082*	N/A
Folding Torque Arms with Encoders																
FTA015-450-2E	80091	11.06	15.0	4.25	108.02	17.71	450			8.82	4.0	6.6	3.0	2	90078*	90073
FTA015-600-2E	80092	11.06	15.0	5.6	142.80	23.62	600			8.82	4.0	7.1	3.2	2	90078*	90073
FTA040-600-2E	80093	29.5	40.0	4.8	122.46	23.62	600			11.02	5.0	8.2	3.7	2	90081*	90073
FTA040-800-2E	80094	29.5	40.0	4.6	117.62	31.5	800			11.02	5.0	8.8	4.0	2	90081*	90073
FTA080-800-2E	80095	59.0	80.0	5.07	128.83	31.5	800			13.23	6.0	15.43	7.0	2	90082*	90073
FTA080-1000-2E	80096	59.0	80.0	7.6	192.62	39.37	1000			13.23	6.0	16.1	7.3	2	90082*	90073

*2 balancers required

Section 5: Linear Torque Arms

LTAE Series Linear Torque Arms



- Torque reaction is parallel to arm column
- (2) of the same balancers are required with the Linear Torque Arm (LTAE) models
- Standard tool holder included. See **Standard Tool Holder Specifications** chart on next page for more information.
- Optional encoder arms are available. If the encoder style arm is purchased, the ASG Nav-P 4.0 System (ASG #90073) is required.
- Arms with Pneumatic Downward Assistance are available. Contact ASG for additional information.
- Arms with 3 Encoders are available, contact ASG for additional information.
- When using ASG's SD2500 screwdriver, ASG recommends the ASG SD2500 tool holder (ASG #90114 or ASG #90094). See page 20 for more information.
- **When purchasing a Linear Torque Arm, the following must also be purchased:**
 - (2) Tool Balancers
 - If an encoder arm is purchased, the ASG Nav-P 4.0 (ASG #90073) is required
 - (1) ASG-AC2500-IC20 and (1) ASG-AC2500-OC20 I/O cables when connecting to ASG CT-2500 controller
- **NOTE:** For specifications on the suggested options, see the **Standard Tool Holder Specifications** and **Standard Tool Balancer Specifications** charts on the next page. If in need of a different option, additional products, information and images can be found on pages 20 (Tool Holder) and 24 (Tool Balancer).

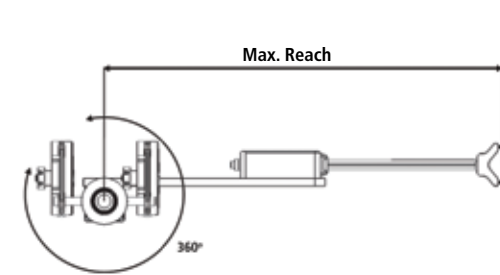
Linear Torque Arms

Suggested Standard Tool Holder and Balancer Specifications

Additional options, information and images can be found on page 20 (Tool Holder) and 24 (Tool Balancer)

Standard Tool Holder Specifications (Included with arm purchase)		
Torque Arm	Tool Grip Diameter	
LTAE 10 and 15 N.m Models	30 - 45 mm	1.18 - 1.77 in.
LTAE 40 N.m Models	30 - 55 mm	1.18 - 2.16 in.
LTAE 80 N.m Models	39 - 58 mm	1.54 - 2.28 in.

Standard Tool Balancer Specifications			
ASG Number	Weight Range		Length
90078	1 - 2 kg/each	2.2 - 4.4 lb./each	1600 mm
90080	1 - 2 kg/each	2.2 - 4.4 lb./each	2000 mm
90081	2 - 4 kg/each	4.4 - 8.8 lb./each	2000 mm
90082	4 - 6 kg/each	8.8 - 13.2 lb./each	2000 mm



ASG Nav-P 4.0 System
ASG #90073

ASG Model Number	ASG Number	Max. Torque		Min. Reach		Max. Reach			Max. Tool Weight		Weight to Balance		Number of Encoders	Standard Tool Balancer ASG Number*	ASG Nav-P 4.0 System ASG Number
		lbf.ft	N.m	in.	mm	in.	mm		lb.	kg	lb.	kg			
LTAE010-450	80067	7.38	10.0	9.06	230	17.72	450		3.3	1.5	4.4	2.0	0	90078*	N/A
LTAE010-750	80068	7.38	10.0	14.96	380	29.53	750		3.3	1.5	5.3	2.4	0	90078*	N/A
LTAE015-450	80069	11.06	15.0	10.24	260	17.72	450		8.82	4.0	6.6	3.0	0	90078*	N/A
LTAE015-750	80070	11.06	15.0	14.96	380	29.53	750		8.82	4.0	7.7	3.5	0	90078*	N/A
LTAE040-600	80071	29.5	40.0	14.96	380	23.62	600		11.02	5.0	8.8	4.0	0	90081*	N/A
LTAE040-800	80072	29.5	40.0	16.93	430	31.50	800		11.02	5.0	9.9	4.5	0	90081*	N/A
LTAE080-800	80073	59.0	80.0	19.29	490	31.50	800		13.23	6.0	14.1	6.4	0	90082*	N/A
LTAE080-1200	80074	59.0	80.0	36.69	932	51.18	1300		13.23	6.0	17.6	8.0	0	90082*	N/A
Linear Torque Arms with Encoders															
LTAE015-450-2E	80097	11.06	15.0	10.24	260	17.72	450		8.82	4.0	6.6	3.0	2	90078*	90073
LTAE015-750-2E	80098	11.06	15.0	14.96	380	29.53	750		8.82	4.0	7.7	3.5	2	90078*	90073
LTAE015-450-3E	80099	11.06	15.0	10.24	260	17.72	450		8.82	4.0	6.6	3.0	3	90078*	90073
LTAE015-750-3E	80100	11.06	15.0	14.96	380	29.53	750		8.82	4.0	7.7	3.5	3	90078*	90073
LTAE040-600-2E	80101	29.5	40.0	14.96	380	23.62	600		11.02	5.0	8.8	4.0	2	90081*	90073
LTAE040-800-2E	80102	29.5	40.0	16.93	430	31.50	800		11.02	5.0	9.9	4.5	2	90081*	90073
LTAE080-800-2E	80103	59.0	80.0	19.29	490	31.50	800		13.23	6.0	14.1	6.4	2	90082*	90073
LTAE080-1200-2E	80104	59.0	80.0	36.69	932	51.18	1300		13.23	6.0	17.6	8.0	2	90082*	90073

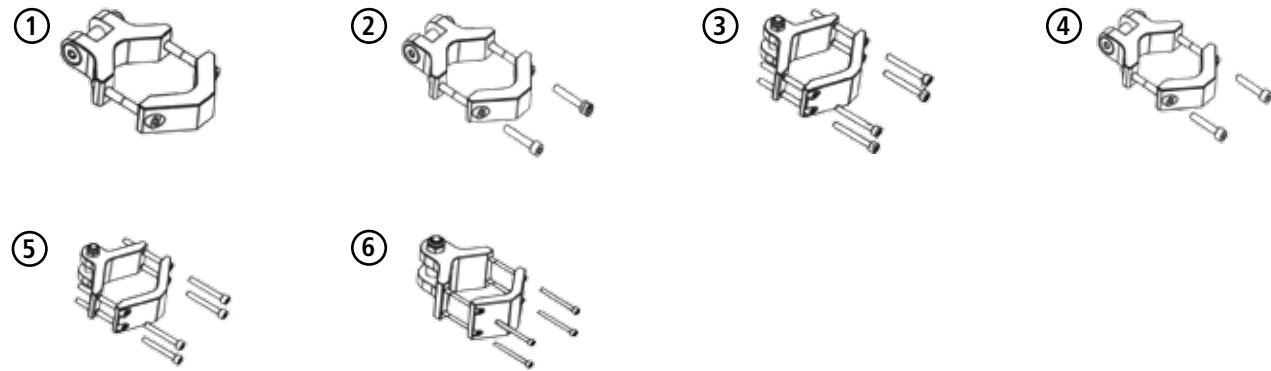
*2 balancers required

Section 6: Accessories

Tool Holders for Telescoping Torque Arms (TTA, TPTA, and TTA V)

Reference Number	ASG Number	Tool Grip Diameter		Description	ASG Application
		in.	mm		
1	*	1.04 - 1.73	26.5 - 44	Base Tool Holder*	TTA – 10 N.m Models
2	90002	1.06 - 1.77	27 - 45	Base Tool Holder 2 screws	TTA, TPTA, TTA V – 15 N.m Models
3	90003	1.06 - 1.77	27 - 45	Base Tool Holder 4 screws	TTA, TPTA, TTA V – 15 N.m Models
4	90004	1.18 - 2.36	30 - 60	Base Tool Holder 2 screws	TTA, TPTA, TTA V – 40 and 80 N.m Models
5	90005	1.18 - 2.36	30 - 60	Base Tool Holder 4 screws	TTA, TPTA, TTA V – 40 and 80 N.m Models
6	90006	1.6 - 2.76	40 - 70	Base Tool Holder	TTA, TPTA, TTA V – 150 and 220 N.m Models

* Included in TTA010 and TTA-010-1000 and TTA-010-1500 arm as standard



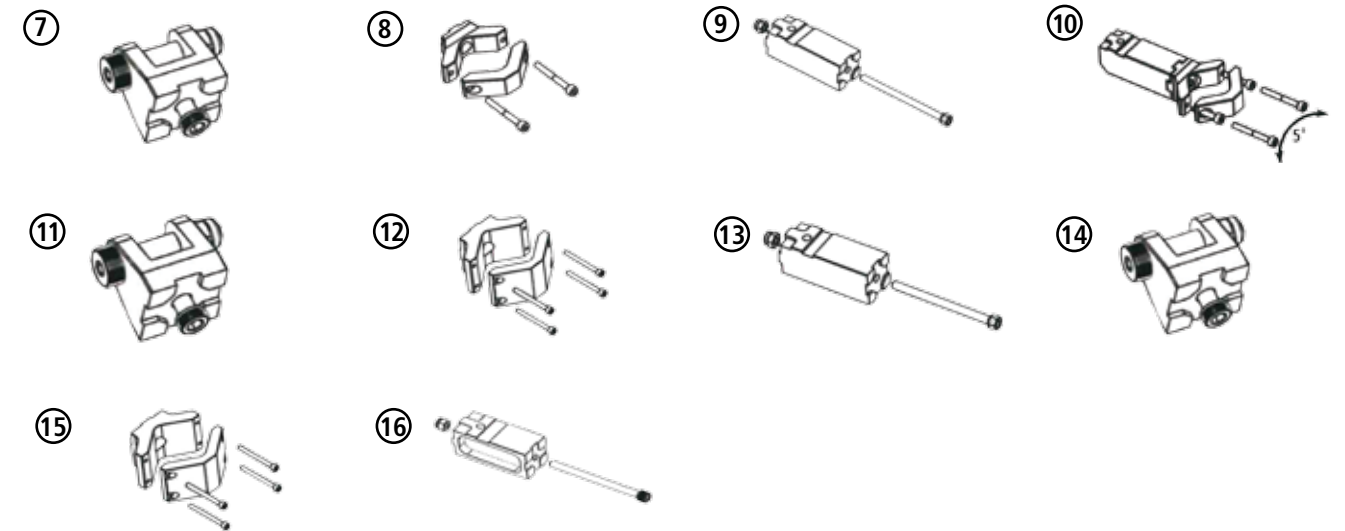
Multi-Position Tool Holders for Telescoping Torque Arms (TTA, TPTA, and TTA V)

Requires purchase of multi position tool holder, multi-position tool holder interface and extension (if the extension is needed)

Reference Number	ASG Number	Tool Grip Diameter		Description	ASG Application
		in.	mm		
7	90007	N/A	N/A	Multi-position tool holder interface	TTA, TPTA, TTA V – 15 N.m Models
8	90008	1.06 - 1.77	27 - 45	Multi-position tool holder	TTA, TPTA, TTA V – 15 N.m Models
9	90009	N/A	N/A	Extension L=90mm	TTA, TPTA, TTA V – 15 N.m Models
10	90013	1.06 - 1.77	27 - 45	Multi-position tool holder w/ 5degree freedom X-axis	TTA, TPTA, TTA V – 15 N.m Models
11	90014	N/A	N/A	Multi-position tool holder interface	TTA, TPTA, TTA V – 40 and 80 N.m Models
12	90015	1.06 - 1.77	27 - 45	Multi-position tool holder	TTA, TPTA, TTA V – 40 and 80 N.m Models
13	90016	N/A	N/A	Extension L=120mm	TTA, TPTA, TTA V – 40 and 80 N.m Models
14	90010	N/A	N/A	Multi-position tool holder interface	TTA, TPTA, TTA V – 150 and 220 N.m Models
15	90011	1.57 - 2.76	40 - 70	Multi-position tool holder	TTA, TPTA, TTA V – 150 and 220 N.m Models
16	90012	N/A	N/A	Extension L=120mm	TTA, TPTA, TTA V – 150 and 220 N.m Models

Accessories

Multi-Position Tool Holders for Telescoping Torque Arms (TTA, TPTA, and TTA V) (Continued)



Tool Holders for Torque Tubes (TT)

Reference Number	ASG Number	Tool Grip Diameter		Description	ASG Application
		in.	mm		
1	90041	1.06 - 1.77	27 - 45	Inline Tool Holder	TT 15 N.m Models
2	90042	1.18 - 2.36	30 - 60	Right Angle Tool Holder	TT 15 N.m Models
3	90044	1.06 - 1.77	27 - 45	Inline Tool Holder	TT 40 N.m Models
4	90045	1.22 - 2.56	31 - 65	Right Angle Tool Holder	TT 40 and 80 N.m Models



Accessories

Tool Holders for Folding and Linear Arms (FTA and LTAE)

Description	Tool Grip Diameter		ASG Application	Notes
	in.	mm		
Clamp Tool Holder 2 Screws	1.18 - 1.77	30 - 45	FTA 10 N.m Models	Included with arm
Clamp Tool Holder 2 Screws	1.18 - 1.77	30 - 45	FTA 15 N.m Models	Included with arm
Clamp Tool Holder 2 Screws	1.18 - 2.16	30 - 55	FTA 40 N.m Models	Included with arm
Clamp Tool Holder 2 Screws	1.54 - 2.28	39 - 58	FTA 80 N.m Models	Included with arm
Tool Holder for Pistol Tool	0.98 - 1.58	25 - 40	FTA 15 N.m Models	Available upon request
Tool Holder for Pistol Tool	1.10 - 1.97	28 - 50	FTA 40 N.m Models	Available upon request
Tool Holder for Pistol Tool	1.42 - 2.36	36 - 60	FTA 80 N.m Models	Available upon request
Clamp Tool Holder 4 Screws	1.54 - 2.28	39 - 58	FTA 80 N.m Models	Available upon request
Clamp Tool Holder 2 Screws	1.18 - 1.77	30 - 45	LTAE 10 N.m Models	Included with arm
Clamp Tool Holder 2 Screws	1.18 - 1.77	30 - 45	LTAE 15 N.m Models	Included with arm
Clamp Tool Holder 2 Screws	1.18 - 2.16	30 - 55	LTAE 40 N.m Models	Included with arm
Clamp Tool Holder 2 Screws	1.54 - 2.28	39 - 58	LTAE 80 N.m Models	Included with arm
Clamp Tool Holder 4 Screws	1.54 - 2.28	39 - 58	LTAE 80 N.m Models	Available upon request

SD2500 Tool Holders (FTA and LTAE)

- Designed specifically for use with the ASG X-PAQ™ SD2500 tool

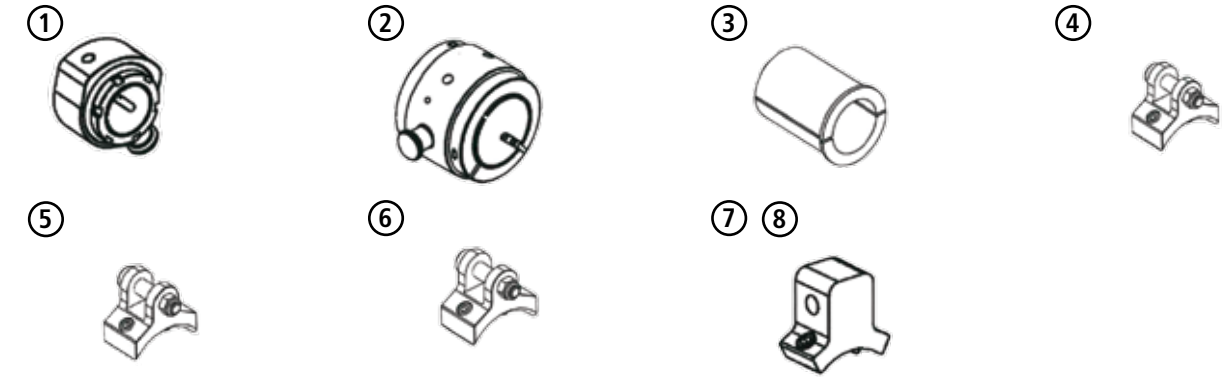


ASG Number	Description	ASG Application
90114	SD Tool Holder for Linear Torque Arm 10 N.m	LTAE 10 N.m Models
90113	SD Tool Holder for Folding Torque Arm 10-15 N.m	FTA 10 and 15 N.m Models
90094	SD Tool Holder for Linear Torque Arm 15 N.m	LTAE 15 N.m Models

Accessories

Swivel Holders for Select Arms

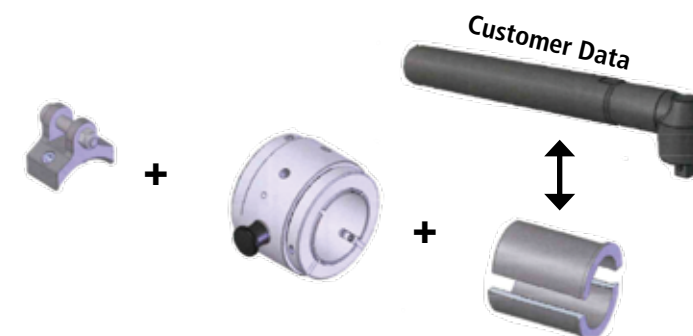
- Customer must provide tool grip diameter when placing the order – tool adapter will be supplied according to below dimension



Reference Number	ASG Number	Tool Grip Diameter		Description	ASG Application
		in.	mm		
1	90017	0.79 - 1.38	20 - 35	Swivel Tool Holder	TTA 15, 40, and 80 N.m Models
2	90018	1.57 - 2.16	40 - 55	Swivel Tool Holder	TTA 15-150 N.m, TT 15-80 N.m Models
3*	*	1.18 - 2.24 *	30 - 57 *	Adapter	All Arms
4	90019	n/a	n/a	Swivel Tool Holder Interface	TTA 15 N.m Models
5	90020	n/a	n/a	Swivel Tool Holder Interface	TTA 40 and 80 N.m Models
6	90021	n/a	n/a	Swivel Tool Holder Interface	TTA 150 N.m Models
7	90043	n/a	n/a	Swivel Tool Holder Interface	TT 15 N.m Models
8	90046	n/a	n/a	Swivel Tool Holder Interface	TT 40 and 80 N.m Models

* Customized to users tool within the diameter limits indicated for each model of tool-holder

Proper Tool Holder Configuration



Accessories

Tool Balancer Bracket Kits for Telescoping Torque Arms (TTA)

- Optional balancer bracket kit is available to keep the balancer cable in a protected position
- For use with Telescoping Torque Arms (TTA Models)
- Easy installation and replacement

ASG Number	Weight Range	
	kg	lb.
90023	1.0 - 8.0	2.2 - 17.6



Tool Balancer Kits for Telescoping Vertical Torque Arms (TTAV)

ASG Number	Bracket Type	Cable Length		Weight Range	
		ft.	m	lb.	kg
90096	A	5.2	1.6	0.9 - 2.2	0.4 - 1.0
90097	A	5.2	1.6	2.2 - 4.4	1.0 - 2.0
90098	A	5.2	1.6	4.4 - 6.6	2.0 - 3.0
90099	B	6.6	2.0	2.2 - 4.4	1.0 - 2.0
90100	B	6.6	2.0	4.4 - 8.8	2.0 - 4.0
90101	B	6.6	2.0	8.8 - 13.2	4.0 - 6.0
90102	B	6.6	2.0	13.2 - 17.6	6.0 - 8.0
90103	C	8.2	2.5	4.4 - 8.8	2.0 - 4.0
90104	C	8.2	2.5	8.8 - 13.2	4.0 - 6.0
90105	C	8.2	2.5	13.2 - 17.6	6.0 - 8.0
90106	C	8.2	2.5	17.6 - 22.0	8.0 - 10.0
90107	C	8.2	2.5	22.0 - 30.8	10.0 - 14.0
90108	C	8.2	2.5	4.4 - 8.8	2.0 - 4.0
90109	C	8.2	2.5	8.8 - 13.2	4.0 - 6.0
90110	C	8.2	2.5	13.2 - 17.6	6.0 - 8.0
90111	C	8.2	2.5	17.6 - 22.0	8.0 - 10.0
90112	C	8.2	2.5	22.0 - 30.8	10.0 - 14.0



Bracket Type A



Bracket Type B and C

Accessories

Tool Balancer Kits for Telescoping Torque Arms with Encoders (TPTA)

ASG Number	Bracket Type	Cable Length		Weight Range	
		ft.	m	lb.	kg
90024	D	5.2	1.6	0.9 - 2.2	0.4 - 1.0
90025	D	5.2	1.6	2.2 - 4.4	1.0 - 2.0
90026	D	5.2	1.6	4.4 - 6.6	2.0 - 3.0
90027	B	6.6	2.0	2.2 - 4.4	1.0 - 2.0
90028	B	6.6	2.0	4.4 - 8.8	2.0 - 4.0
90029	B	6.6	2.0	8.8 - 13.2	4.0 - 6.0
90030	B	6.6	2.0	13.2 - 17.6	6.0 - 8.0
90031	C	8.2	2.5	4.4 - 8.8	2.0 - 4.0
90032	C	8.2	2.5	8.8 - 13.2	4.0 - 6.0
90033	C	8.2	2.5	13.2 - 17.6	6.0 - 8.0
90034	C	8.2	2.5	17.6 - 22.0	8.0 - 10.0
90035	C	8.2	2.5	22.0 - 30.8	10.0 - 14.0
90036	C	8.2	2.5	4.4 - 8.8	2.0 - 4.0
90037	C	8.2	2.5	8.8 - 13.2	4.0 - 6.0
90038	C	8.2	2.5	13.2 - 17.6	6.0 - 8.0
90039	C	8.2	2.5	17.6 - 22.0	8.0 - 10.0
90040	C	8.2	2.5	22.0 - 30.8	10.0 - 14.0



Bracket Type D



Bracket Type B and C

Tool Balancer Kits for Torque Tubes (TT)

ASG Number	Bracket Type	Cable Length		Weight Range	
		ft.	m	lb.	kg
90047	D	5.2	1.6	0.9 - 2.2	0.4 - 1.0
90048	D	5.2	1.6	2.2 - 4.4	1.0 - 2.0
90049	D	5.2	1.6	4.4 - 6.6	2.0 - 3.0
90050	E	6.6	2.0	2.2 - 4.4	1.0 - 2.0
90051	E	6.6	2.0	4.4 - 8.8	2.0 - 4.0
90052	E	6.6	2.0	8.8 - 13.2	4.0 - 6.0
90053	E	6.6	2.0	13.2 - 17.6	6.0 - 8.0
90054	E	8.2	2.5	4.4 - 8.8	2.0 - 4.0
90055	E	8.2	2.5	8.8 - 13.2	4.0 - 6.0
90056	E	8.2	2.5	13.2 - 17.6	6.0 - 8.0
90057	E	8.2	2.5	17.6 - 22.0	8.0 - 10.0
90058	E	8.2	2.5	22.0 - 30.8	10.0 - 14.0
90059	E	8.2	2.5	4.4 - 8.8	2.0 - 4.0
90060	E	8.2	2.5	8.8 - 13.2	4.0 - 6.0
90061	E	8.2	2.5	13.2 - 17.6	6.0 - 8.0
90062	E	8.2	2.5	17.6 - 22.0	8.0 - 10.0
90063	E	8.2	2.5	22.0 - 30.8	10.0 - 14.0



Bracket Type D



Bracket Type E

Accessories

Tool Balancers (TTA, FTA, and LTAE)

Tool balancers designed for Telescoping, Linear and Folding Torque Arms (TTA, FTA, and LTAE Series). For all other arm types, see tool balancer kits on pages 22 and 23.

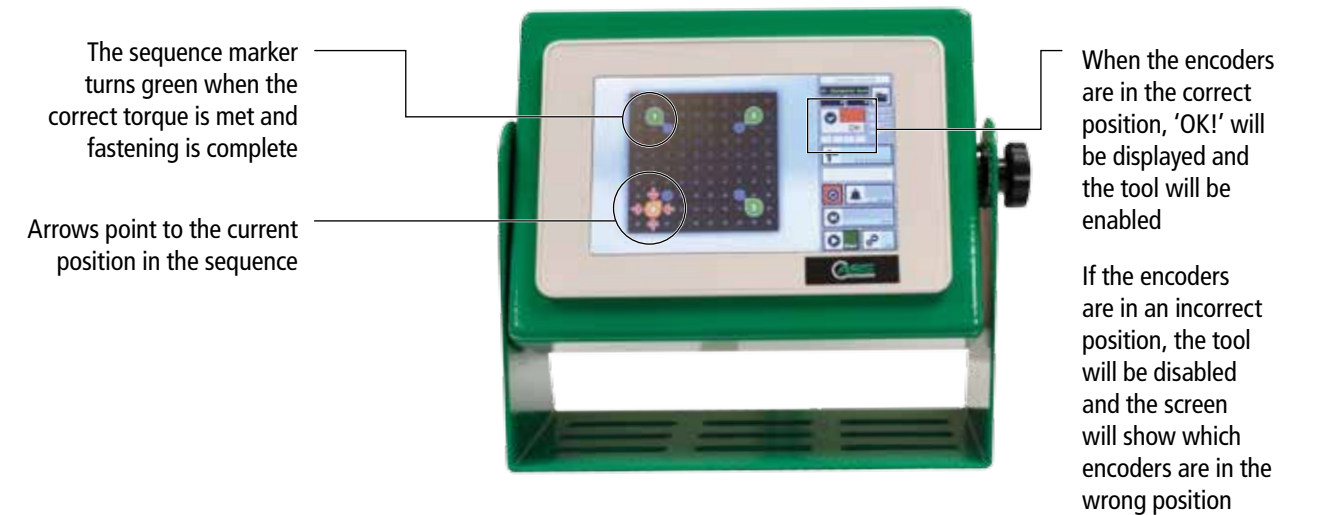


ASG Number	Cable Length		Weight Range	
	ft.	m	lb.	kg
90077	5.2	1.6	0.9 - 2.2	0.4 - 1.0
90078	5.2	1.6	2.2 - 4.4	1.0 - 2.0
90079	5.2	1.6	4.4 - 6.6	2.0 - 3.0
90080	6.6	2.0	2.2 - 4.4	1.0 - 2.0
90081	6.6	2.0	4.4 - 8.8	2.0 - 4.0
90082	6.6	2.0	8.8 - 13.2	4.0 - 6.0
90083	6.6	2.0	13.2 - 17.6	6.0 - 8.0
90084	8.2	2.5	4.4 - 8.8	2.0 - 4.0
90085	8.2	2.5	8.8 - 13.2	4.0 - 6.0
90086	8.2	2.5	13.2 - 17.6	6.0 - 8.0
90087	8.2	2.5	17.6 - 22.0	8.0 - 10.0
90088	8.2	2.5	22.0 - 30.8	10.0 - 14.0
90089	8.2	2.5	4.4 - 8.8	2.0 - 4.0
90090	8.2	2.5	8.8 - 13.2	4.0 - 6.0
90091	8.2	2.5	13.2 - 17.6	6.0 - 8.0
90092	8.2	2.5	17.6 - 22.0	8.0 - 10.0
90093	8.2	2.5	22.0 - 30.8	10.0 - 14.0

Section 7: ASG Nav-P 4.0 System

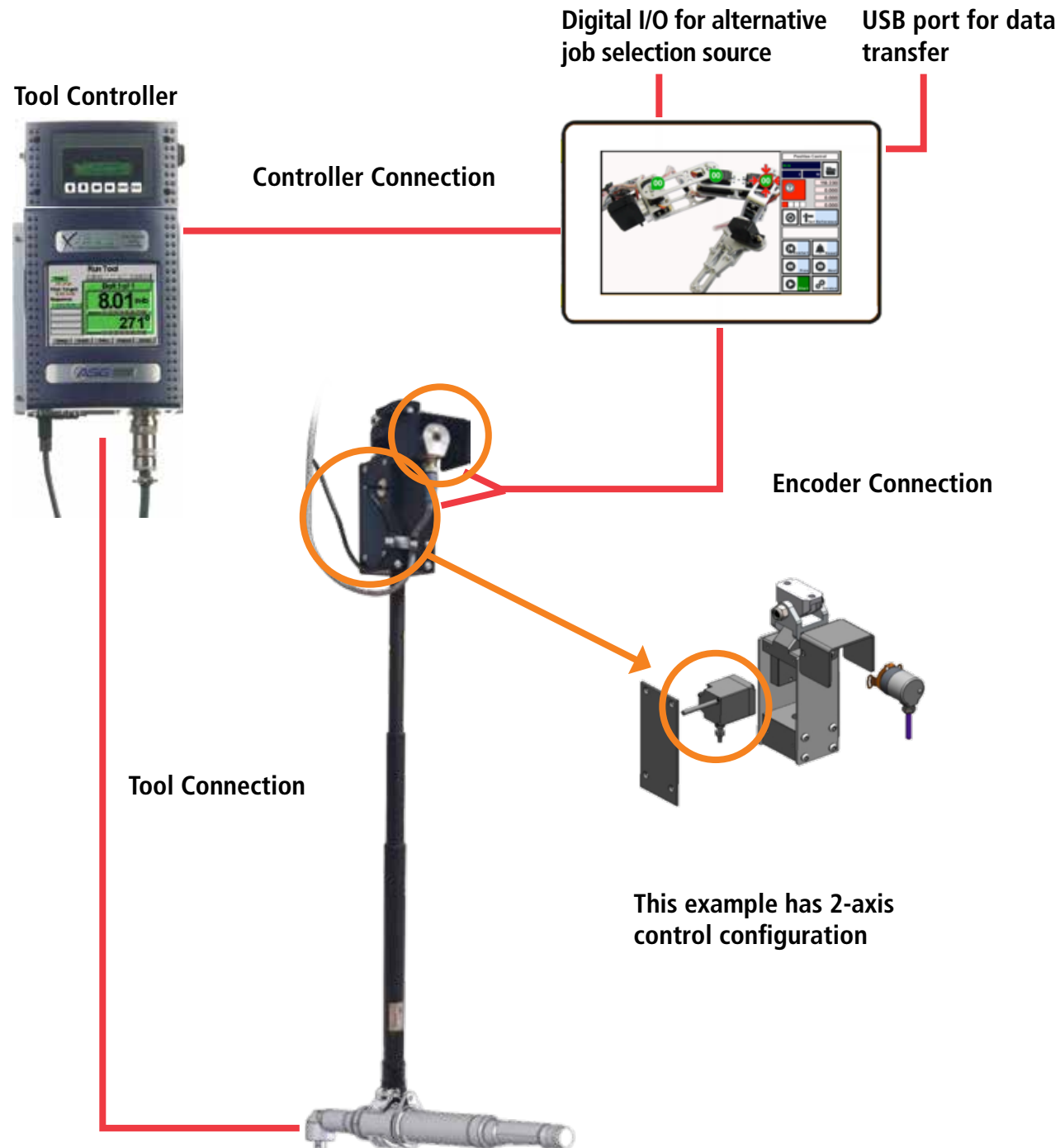


- For use with folding, telescoping, and linear arms
- 7in LCD TFT screen
- Supports up to 4 encoders
- Visual sequence guide using CAD drawings or assembly photos
- Intuitive programming
- Stores up to 500 assembly sequences
- Digital I/O - allows interfacing with tool controllers. I/O cable sold separately



ASG Nav-P 4.0 System

Installation/Connection Scheme



ASG Nav-P 4.0 System

Integrating an X-PAQ™ with a Premium Torque Arm

Integrate ASG Automation with ASG X-PAQ™ Precision Fastening to help control manufacturing processes by ensuring that proper torque, sequence and revolution tolerance is achieved.

- Provides feedback to disable or enable the handheld tool based upon preprogrammed characteristics for proper fastener tightening sequence



Complete Error-Proofing

- Ensures correct fastener sequencing
- Accurate and repeatable torque
- Maintains tool alignment with fasteners
- Increases Quality
- Reduce or eliminate rework and warranties

Intuitive and User Friendly HMI

- Visual Sequence Guide using CAD drawings or assembly photos
- Stores up to 500 assembly sequences
- Digital I/O - allows interfacing with tool controllers and line control

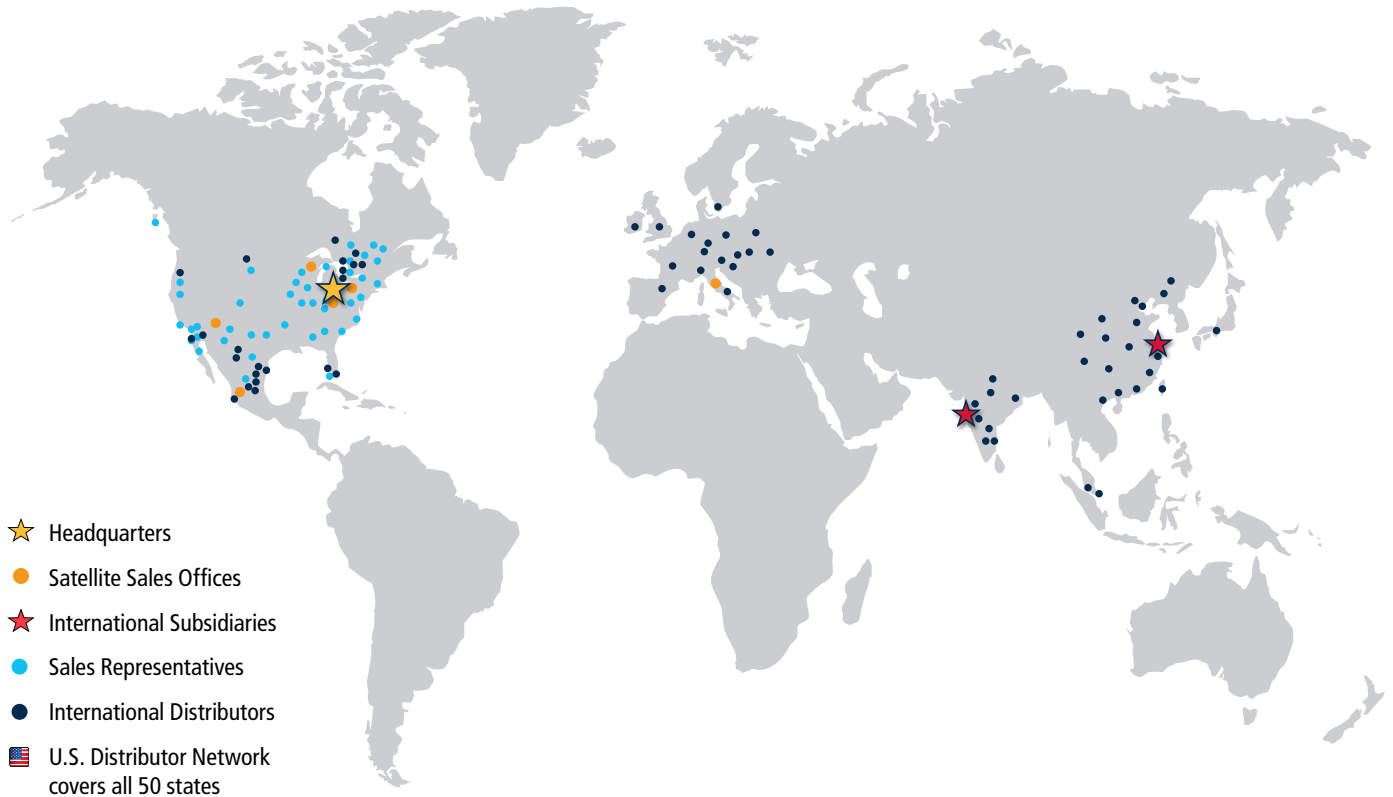
Torque Reaction Arm

- Standard and positioning
- Multiple arm configurations
- Torque reaction capabilities up to 220 N.m (162 lbf.ft)

X-PAQ™ System

For more information on the ASG X-PAQ™, visit www.asg-jergens.com to view products and the ASG X-PAQ™ SD2500 and EH2 catalog. It is located under the Precision Fastening product group.





Our footprint covers the globe!

Global Support

ASG employs a team of technical experts to provide support, repair, calibration and preventative maintenance services. We welcome the opportunity to provide assistance by telephone or online chat Monday through Friday, 8 a.m. to 5 p.m. (U.S. Eastern Time) excluding holidays.

ASG maintains subsidiaries in Shanghai, China and Mumbai, India, and sales offices in Mexico and Europe to provide direct support to our international customers. We work together with our global Field Sales Representative and Distributor Network to help customers standardize their assembly equipment and processes around the world.

Distributor:



Products and Solutions for Assembly

June 2019

ASG USA Headquarters
 Jergens Way, 15700 S. Waterloo Road
 Cleveland, OH 44110-3898 USA
 Phone: (216) 486-6163
 Toll-free USA: (888) 486-6163
 Fax: (216) 481-4519
 Email: asginfo@asg-jergens.com

ASG China Subsidiary
 Unit 301 Level 3, Block A
 A-REIT City at Jinqiao, 200 Jinsu Road,
 Shanghai, Pudong 201206 CHINA
 Phone: +86 21 58209175
 Fax: +86 21 58353696
 Email: rafael.qi@asg-jergens.com

ASG India Subsidiary
 B-607, Mahaavir Icon,
 Plot No. 89, Sector 15, C.B.D. Belapur
 Navi Mumbai-400 614, Maharastra INDIA
 Phone: +91 22 27572998
 Mobile: +91 98 334 04986
 Email: jpk@asg-jergens.com