

Product Overview

Track & Carriage Systems

AMET is pleased to provide the following product overview on our standard models of tracks and carriages. These tracks and carriages are designed to linearly move one or more weld heads over a weld joint. The models we produced cover various ranges, from 1 ft to 40 ft (0.3 to 12 meters), in order to meet your application requirements. We offer track and carriage systems in five standard versions.

Five main versions are based on weight carrying capacity on the carriage. We have the following main offering:

- Flat-way track & carriage
- Standard duty track & carriage
- Precision standard duty track & carriage
- Heavy duty track & carriage
- Extra heavy duty track & carriage

Each range has different weight and weld length capacities. Each of the tracks can handle two carriages. For more than two carriages, please contact AMET with your project details.

The sixth version is our “bench” style track and carriage which are typically designed for smaller, more precise linear welding, with limited weight carrying capacity. Also, due to its design, the bench track can have only one travel carriage.

Our tracks and carriages are designed for linear welding. Each motorized carriage, as standard, is designed with a variable speed drive suited for typical welding applications. The flat-way track is better suited for GMAW, FCAW and SAW welding processes only. The remaining track and carriages are suited for all arc welding processes. For precision welding applications, AMET does suggest the customer upgrade to our precision track and carriage offering which includes servo grade drive package. (The track and carriage includes a servo motor, servo motor drive, precision gear box and servo grade/helical gear rack.)

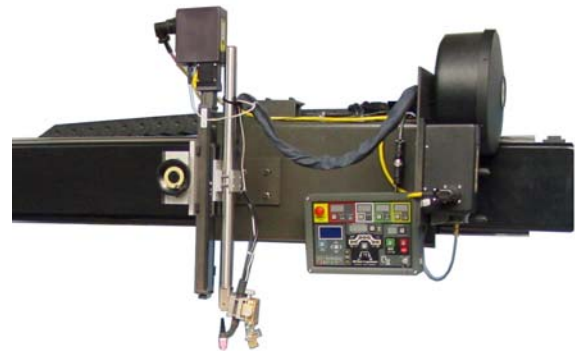
For special projects, AMET can upgrade each motorized carriage with precision motor, motor drive and better gear box for very high quality welding results. AMET will also consider your special requests for tracks and carriages and special features as well.

Purpose:

Standard track systems are typically used for linear welding. In some applications, the linear track can hold a weld over a circumferential weld joint, and then easily to move to a second joint on a part, and in some case perform linear welding while moving from one circumferential joint to the other. On some systems the weld head is moved linearly from one weld station to the next, so a weld joint on another part can be welded while the operator exchanges the part on the opposing station.

Linear tracks and carriages provide a robust and stable platform for the weld head. They allow for heavier loads when compared to mobile tracks and buggies. Our linear tracks and carriages also provide a stable, fixed platform for parts which can be moved to the welding area. Welding is performed using GTAW, PAW, GMAW, FCAW, SAW or YAG Laser.

In most GMAW, SAW and FCAW welding, the standard flat-way track can be used as a linear welding axis, as these weld processes may not required precise welding motion. Based on weight requirements and required linear motion, the project may require one of our other tracks made with linear rails.



Standard Track and Carriage System

(Shown with QII system control, AVC and Wire Feed)

Benefits:

The tracks & carriages have several benefits over welding the part manually or with semi-automatic equipment, including:

- Able to achieve consistent weld results
- Able to maintain weld head over weld joint in a stable position during the weld
- Increases arc-on time and overall productivity
- Provides ability to have multi-weld stations using two or more travel carriages, increasing your return on investment
- Reduced operator fatigue
- Reduced consumable costs
- Ability to have two welding processes on one travel carriage – for example plasma plus TIG, by using larger weight capacities allowed on the carriages
- Ability to use cantilevered booms and arms to extend the weld head over part as required
- Proper cable management as flexible cable carrier is typically included
- Ability to adjust height of weld head if elevating supports posts are included

These benefits greatly reduce the time to prepare a part for welding and the time to finish a part after welding. Significant time is saved when the operator does not have to handle

Tracks and Carriages



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portable track segments. Also, rework time will be reduced and part scrap will be cut when using an automated system.

AMET can include optional features, such as more travel carriages, advanced limit switch arrangements for more complicated projects, elevating support posts to handle larger range of products, flexible cable carriers, and others.

Capacities:

As standard, AMET can produce tracks with travel strokes up to 9 meters (approx. 30 ft). Typically, tracks longer than 6 meters (about 20 ft) will have one splice, which requires a support post at the splice.

All standard track and carriages have the following general capacities and specifications:

- Carriage Weight capacity: See Chart below
- Carriage drive: Gear rack and pinion drive
Note: On precision applications, AMET will use servo grade, helical gear rack with matching pinion gear.
- Carriage motor: DC Motor, adjustable speed
- Encoder feedback for speed accuracy
- Travel mechanism: Linear rail (except flat-way track)
- Carriage mechanism – recirculating ball bearing blocks (Roller bearings on Flat-way carriages)
- Travel Extent Limit Switches
- Stress Relieved (except flat-way track)
- Machined (see chart for accuracy)

Track and Carriage Capacity Information

Track Model Number	Carriage Model Num.	Support Post Model Num.	Weight Capacity		Center of Gravity*		Slide Design	Machining Accy.		Travel Speed		Posts, spaced every	
			(kg)	(lbs)	(mm)	(inch)		(mm/M)	(inch/ft)	cm/min	IPM	(M)	(Ft)
TCB	Included	TSA-TCB	50	110	300	12	Rexroth Track	+/- .04	+/- .005	2.5 to 250	1 to 100	Always 2	
TCF	TCM-F	TSA-TCF	250	550	300	12	Steel Plate	+/- .3	+/- .003	7.5 to 200	3 to 100	3	10
TCS	TCM-S	TSA-TCS	150	330	300	12	Structural Tube	+/- .13	+/- .0015	7.5 to 300	3 to 120	2.5	8
TCP	TCM-P	TSA-TCP	150	330	300	12	Structural Tube	+/- .04	+/- .0005	7.5 to 300	3 to 120	2.5	8
TCH	TCM-H	TSA-TCH	500	1100	300	12	Structural Assembly	+/- .13	+/- .0015	5 to 250	2 to 100	3	10
TCX	TCM-X	TSA-TCX	1000	2200	300	12	Structural Assembly	+/- .13	+/- .0015	5 to 250	2 to 100	2.5	8

* Load Rating - Center of Gravity point for load, measured from face of travel carriage.



LTC track and carriage with SAW weld head over a PZT-1000 tilting positioner