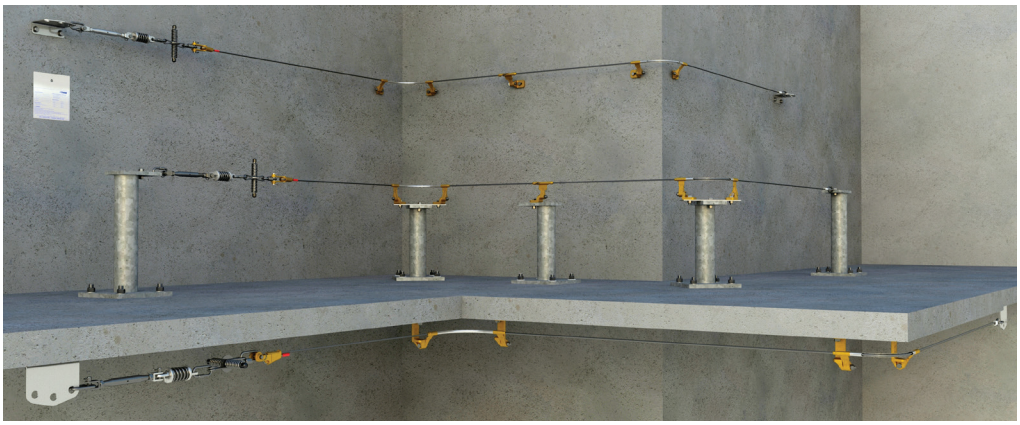
Tractel® technical sheet	**TRAVSMART** permanent single-cable horizontal lifeline system	ref.: T-4702 revision: 6 date: 12/2016



The Travsmart single-line system provides a smooth travel. It allows the traveler to move freely over the intermediate anchors, minimizing wear and eliminating user assistance. The user's hands remain free to accomplish whatever task is required.

The Travsmart is a permanent horizontal lifeline system that is easy to install and can allow up to five users. It is a hands free system that does not require special training or tools. The system comes with a visual tension indicator and an in-line energy absorber.

BENEFITS

- Permanently installed
- The system length is unlimited and can go around corners
- Maximum spacing between anchor points is 50 ft. (15 m)
- Up to five users on one system
- Easy to install with common tools

FEATURES

- The Travsmart traveler ensures smooth hands free travel over anchors and around corners
- The system can be secured to walls, overhead, under an inclined surface, on ground and on posts
- Comes with a tension indicator and tensioner
- Lightweight components
- Can be used for fall arrest or fall restraint

APPLICATIONS

- Building maintenance (rooftops without guardrails or parapets)
- Aircraft hangers (overhead systems to service the top of the fuselage and wings)
- Bridges and viaducts
- Oil and gas installations
- Distribution facilities
- Overhead cranes
- Industrial plants

APPLICABLE STANDARDS

- OSHA 1910, subpart D: Walking and working surfaces
- OSHA 1926, subpart M: Fall protection
- ANSI Z359.6-2016: Specifications and design requirements for active fall protection systems
- ANSI A10.32-2012: Personal fall protection used in construction and demolition operations
- CSA Z259.13-04 (2009): Flexible horizontal lifeline system
- CSA Z259.16-04 (2009): Design of active fall protection systems

COMPATIBLE PERSONAL FALL PROTECTION EQUIPMENT ALSO REQUIRED

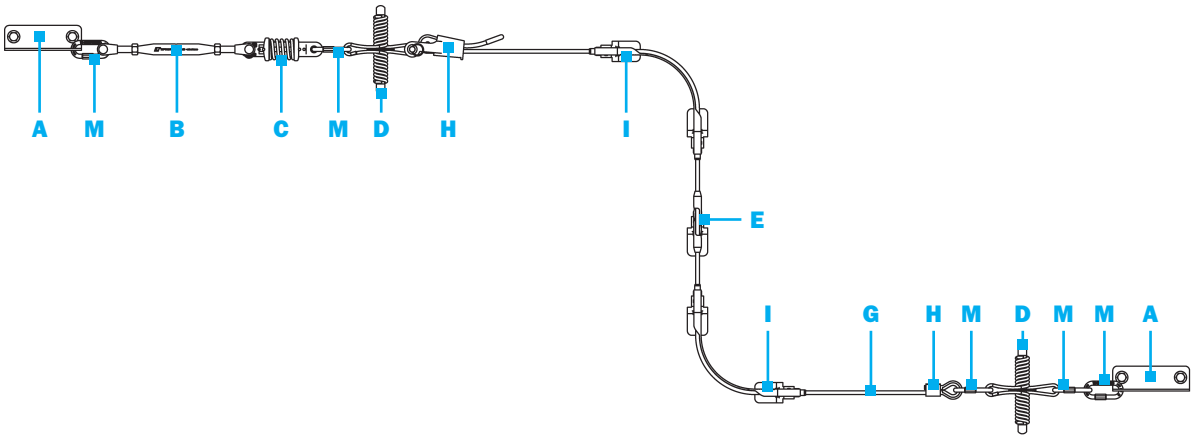
- Full-body harness
- Shock-absorbing lanyard or self-retracting device

⚠ WARNING

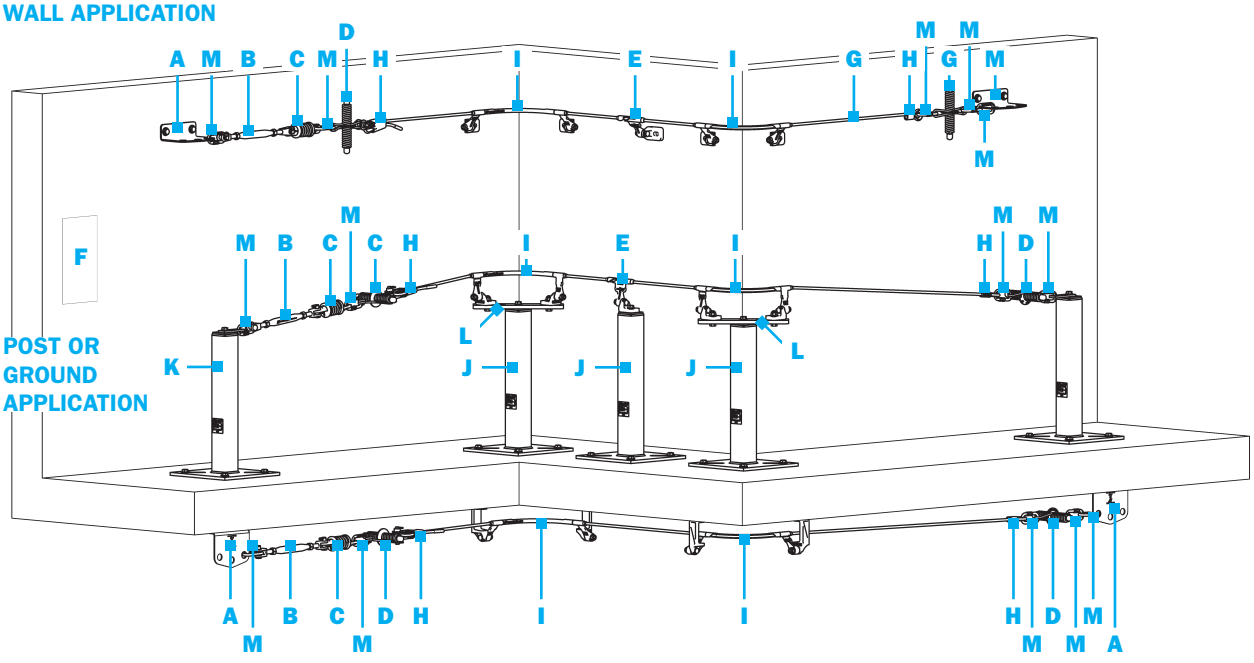
- When using a horizontal lifeline as a fall arrest system, you must ensure that there is enough space below the walking/working surface to fall and not hit anything. Tractel® can supply you with system deflection if you contact us.
- When used as a permanent installation, the Travsmart horizontal lifeline system is an engineered designed system. This means that before any installation commences, a specific technical study of the site must be undertaken. This would include a shop drawing showing the system layout, general notes, connection details and expected loading. These shop drawings are to be reviewed by a professional engineer licensed to work in the state or province that the project is in. A site study may be required if drawings are not available to use when preparing these shop drawing. The shop drawings will also show the total fall height required if the system is designed for fall arrest. Tractel® or the Tractel® computer loading program will determine system loading.

TRAVSMART COMPONENTS

PLAN VIEW



WALL APPLICATION



POST OR GROUND APPLICATION

OVERHEAD APPLICATION

A. End anchor
B. Turnbuckle tensioner
C. Tension indicator
D. INRS energy absorber
E. Intermediate anchor
F. Information plate
G. Wire rope
H. Wedge socket
I. Corner kit
J. Steel anchor post
K. End anchor post
L. Corner plate
M. Fast link conector

Not shown: Traveler

END ANCHOR – J30193897

The end anchors are designed to be attached to the supporting structure with two bolts (specifications to be set by prior study) through the holes shown on the adjoining drawing.

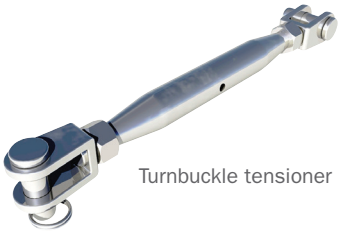
- Material: Stainless steel – 304L
- Size: 6.7 x 5 x 2.2 in. (170 x 126 x 55 mm)
- Minimum breaking strength: 6,744 lbs. (30 kN)
- Centre distance: 5.1 in. (130 mm)
- Net weight: 1.8 lbs. (824 g)

End anchor

TURNBUCKLE TENSIONER – J3640742

The tensioner enables adjustment of the wire rope tension to the required value.

- Material: Stainless steel – 316L
- Minimum breaking strength: 6,744 lbs. (30 kN)
- Extends from 10 to 16 in. (270 to 400 mm)
- Net weight: 1.3 lbs. (580 g)



Turnbuckle tensioner

TENSION INDICATOR – J3666858

The tension indicator enables to check that the wire rope pre-tension is at 224 lbs. (100 daN) by simply aligning a hole and a notch. Correct wire rope tension ensures correct operation of all the system components in the event of a fall.

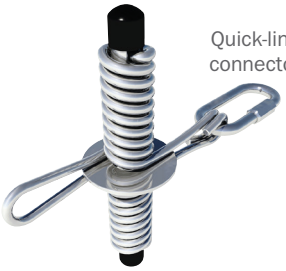
- Material: Stainless steel – 316L
- Size: 5.7 x 2 in. (144 x 50 mm)
- Minimum breaking strength: 6,744 lbs. (30 kN)
- Net weight: 2 lbs. (900 g)

Tension indicator

INRS ENERGY ABSORBER – J3666688

The INRS energy absorber is designed to dissipate the energy transmitted to the supporting structure by the fall of a user connected to the system. It is disposable (used once). It does not negate the necessity of equipping every user with personal fall arrest equipment. Each INRS energy absorber is supplied with a quick-link connector.

- Material: Stainless steel – 304L
- Size: 7.5 x 4.3 in. (190 x 110 mm)
- Minimum breaking strength: 6,744 lbs. (30 kN)
- Net weight: 0.9 lbs. (400 g)
- Quick-link connector: Stainless steel – 316L
- See performance certificate
- Maximum arrest force: 600 daN (1,350 lbs.)
- Average dynamic pull out: 500 daN (1,124 lbs.)
- Maximum deployment: 905 mm (35.63 in.)



Quick-link connector

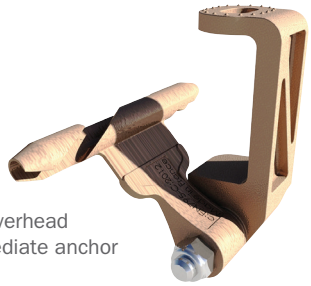
Shock absorber

INTERMEDIATE ANCHOR

- **STANDARD – J30193847**
- **OVERHEAD – J30193857**

With its original design, the Travsmart intermediate anchor allows each user to easily pass through the anchor point without the need to disconnect from the system. The intermediate anchors must be set up so that the maximum interval between anchors, from one end of the system to the other, never exceeds 50 ft. (15 m).

Standard intermediate anchor



Overhead intermediate anchor

Types of anchors:

- Standard intermediate anchor for installation on ground, on wall and on post – J30193847
- Overhead intermediate anchor for installation in an overhead configuration – J30193857

Depending on the type of mounting configuration used, the intermediate anchor may be installed, considering the 45° indentations on the bracket, to achieve optimum passage of the traveler.

For installation on the ground the angle must be 90°, on a wall 135° and using posts 90°.

For overhead installation, the recommended angle is 225°. An angle of 180° is also possible if the fall arrest system is relatively heavy as, for example, when using a self-retracting device as a fall arrest system with steel wire rope which is compliant with standards ANSI Z359.14-2012, OSHA 1910 and CSA Z259.2.2-98.

The intermediate anchors are formed by four parts:

1. An intermediate piece
2. A standard or overhead intermediate fixing bracket
3. A HM12 x 45 mm (½ x 1¾ in.) bolt
4. A locknut

- Material: copper-aluminum/aluminium (anchor) and stainless steel (hardware)
- Minimum breaking strength: 2,698 lbs. (12 kN)
- Net weight of standard intermediate anchor: 1.3 lbs. (591 g)
- Net weight of overhead intermediate anchor: 1.6 lbs. (710 g)

INFORMATION PLATE – JNP1

Comes with a mounting bolt hole for a ½ in. (12 mm) fastener.

- Size: 7½ x 8½ in. (190 x 216 mm)

Information plate

WIRE ROPE

- **GALVANIZED STEEL – J37009000**
- **STAINLESS STEEL – J37009000S**

This makes up the retaining cable, which is sleeved, looped and fitted with a thimble at one end. The other end is brazed and ground smooth in the factory. It is available in stainless steel or galvanized.

- 5⁄16 in. (8 mm) diameter

Wire rope cable

WEDGE SOCKET – J30193837

The wedge socket is formed by five (5) parts:

1. A casing
2. A wedge
3. A securing pin
4. Two (2) split rings to lock the securing pin on the casing

The wedge socket is used to secure the free end of the wire rope to the energy absorber.

- Material: copper-aluminum/aluminium and stainless steel
- Minimum breaking strength: 6,744 lbs. (30 kN) when used with Tractel® specified wire rope
- Net weight: 0.9 lb. (430 g)

Wedge socket

CORNER KIT

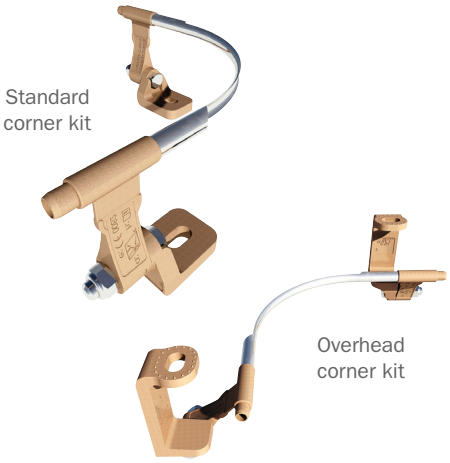
- **STANDARD – J30193867**
- **OVERHEAD – J30193877**

These sub-assemblies are only used when the system has corners with a standard opening of between 75° and 105°*. Each corner kit acts as an intermediate anchor. The kits are supplied for assembly by the installer in accordance with one of the following installation configurations:

- Case 1: on internal or external angle
- Case 2: on vertical or inclined surface of structure
- Case 3: on angle on horizontal surface of structure
- Case 4: on overhead

There are two types of corner kits:

- Standard corner kit for installation on ground, wall and post.
- Overhead corner kit for installation on overhead.



Standard corner kit

Overhead corner kit

Depending on the type of mounting configuration used, the corner may be installed, considering the 45° indentations on the bracket, to achieve optimum passage of the traveler.

For installation on the ground the angle must be 90°, on a wall 135° and using posts 90°.

For overhead installation (I2), the recommended angle is 225°. An angle of 180° is also possible if the self-retracting lifeline is relatively heavy as, for example, a self-retracting device as a fall arrest system with steel wire rope which is compliant with standards ANSI Z359.14-2012, OSHA 1910 and CSA Z259.2.2-98 (weight of fall arrester 22 lbs. [10 kg] max.).

Corner kits are formed by five parts:

1. Two corner anchors
2. Two mounting brackets, either for installation on ground, on wall or on post, or for installation on overhead
3. Two HM12 x 45 mm (½ x 1¾ in.) bolts
4. Two locknuts
5. Corner tube

- Material: copper-aluminum/aluminium and stainless steel
- Net weight of standard corner kit: 2.5 lbs. (1,135 g)
- Net weight of overhead corner kit: 3 lbs. (1,374 g)

**For corner installation with angle greater than 105°, contact Tractel®.*

Note: the corner tube is supplied straight; the installer shapes the tube by hand to adapt it to the desired turn angle between 75° and 105°. Once shaped, it must be approved before use.

ANCHOR POST

Anchor posts are designed to be installed on a concrete or metal support. The cap plate allows to fix directly the end anchors, the intermediates and corner plates.

- Material: Galvanized steel
- Breaking strength: up to 5,000 lbs. (22.2 kN)
- Size: 12, 18 or 24 in. x ø4 in. (305, 457 or 610 mm x ø102 mm)
- Shear resistance: >6,744 lbs. (>30 kN)
- Net weight: from 13 lbs. (5.9 kg)

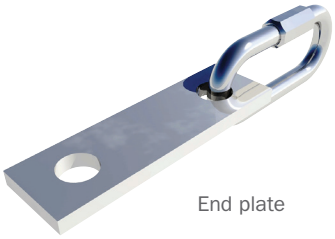
** Base plate configuration is up to/depends on fixing requirements and installation conditions.*

Standard anchor post

END PLATE – J366698

Comes with two holes for ½ in. (12 mm) fasteners. Supplied with a quick-link connector.

- Material: Stainless steel – 316L
- Size: 4 x 1.2 x 0.2 in. (100 x 30 x 4 mm)
- Centre distance: 2.6 in. (65 mm)
- Net weight: 1.3 lbs. (580 g)



End plate

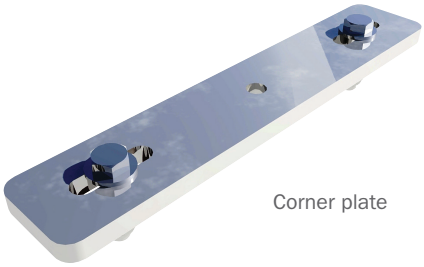
CORNER PLATE – J30193887

The corner plate is used to suit the corner anchor assembly which will be on a regular anchor post for angles from 75 to 105° using the oblong holes in the plate.

Each corner plate includes:

1. One plate
2. Two HM12 x 45 mm (½ x 1¾ in.) bolts
3. Four washers M12
4. Two locknuts

- Material: Galvanized and stainless steel – 316L
- Size: 2⅜ x 12⅜ in. (60 x 313 mm)
- Net weight: 3.8 lbs. (1,705 g)



Corner plate

TRAVELER – J30251349

The traveler slides along the wire rope and moves hands free.

Important: the Travsmart traveler is the only means for connecting a user to the Travsmart system.

- Material: Martensitic stainless steel grade 431
- Net weight: 1.45 lbs. (658 g)

Traveler

CARABINER – PM11Z

The carabiner is used only to connect the user's lanyard to the Travsmart traveler.

- Material: Alloy steel
- Opening: ¾ in. (19 mm) opening
- Size: 4.2 x 2.4 in. (107 x 60 mm)
- Net weight: 0.4 lbs. (202 g)

Carabiner

SYSTEM LOADING AND DEFLECTION

If you design, install and use this system according to the manual, the maximum force on any end and intermediate anchor will not be greater than 2,922 lbs. (13 kN). The maximum force on corner anchors will not be greater than 3,147 lbs. (14 kN). Contact Tractel® for system deflection and site-specific loading.