

ORNL HOISTING AND RIGGING PROGRAM ORDINARY PRODUCTION LIFT PLAN

The following applies on all ordinary lifts:

- Only trained and qualified personnel will be used when making lifts.
- A pre-lift meeting will be conducted involving all participants to review the approved lift plan and resolve any questions.
- Separate qualified individual signatures are required on the lift plan form for "Plan Prepared By" and "Approved."

1. Identify Item: (weight, key dimensions, how center of gravity will be determined, toxic/hazardous material?).

n-3He Ion Chamber (81 lbs, 10" body dia, 12" flange dia, 14" total length. Lifting using this plan will either occur before irradiation or after removal of the bulk tritium from the chamber.

Plan Prepared By: Jack Thomison

Location (Bldg., Room/Area): BL-13 cave

Designated Leader: (name) Seppo Penttila, Paul Mueller, or Jack Thomison

Duration: (cannot exceed one year) 1 year

2. Frequency of Lift(s): a) ☐ once b) ☒ periodic

Note: Any change in specified lift conditions requires a new lift plan.

3. Procedures/References:

DOE-STD-1090-2007, "DOE Hoisting and Rigging Technical Standard"
OSHA 29 CFR 1910.178, .179, .180, .184
ORNL Procedure(s): SBMS "Hoisting and Rigging" and "Work Control"
Other: _____

4. Hoisting Equipment/Rigging and Below the Hook Hardware: *

Describe type of hitch (vertical, choker, basket, etc.):

Basket from each end around body inside of flanges as shown on Attachment 2 and 3.

8mm PMI cord: 13.4 kn breaking strength unknotted, 10.7 kn knotted. Working strength w/ FS of 5 = 2.1 kn = 470 lbs.

Hoisting equipment:

Petzl Micro Traxion

Lifting Capacity:

2.5 kn = 560 lbs

Pre-Use Inspection Required

yes

Rigging/Hardware:

Maillon Rapide Delta 5mm SS

Lifting Capacity:

715 lbs

Pre-Use Inspection Required

yes

Maillon Rapide Oval 5mm SS

990 lbs

yes

PMI 8mm Accessory Cord

470 lbs

yes

Kanya Sliding Hook

300n = 67 lbs

yes

* Equivalent or greater rigging/hardware may be substituted by professional riggers.

5. Task Specific Job Hazard Evaluation Completed: ☐ Yes (Required) Reference: _____

6. Special instructions (facilities, equipment, communications, etc.): ☒ Yes (list below) ☐ No

See Attachment 1 for instructions. See Attachment 2 & 3 for illustrations. See Attachment 4 for vendor data.

7. Approvals:

Division Level Health & Safety SME Review:

Date:

Level 3 Manager:

Date:

ATTACHMENT 1 to BL-13 n-3He Ion Chamber Ordinary Lift Plan

LIFTING PROCEDURE

Set-up

1. Assure both end windows covers are installed on the Ion Chamber to protect the windows.
2. Rig two basket loops with the 8 mm rope as shown in Attachment 2 around both end flanges of the Ion Chamber.
3. Assure that the ropes are restrained from slipping out of the lift blocks at each end.
4. Assure the slide bars are connected to the screwlinks on both sides of the chamber.
5. Assure the Traxion cams are engaged and prevent loss of progress.

Lifting

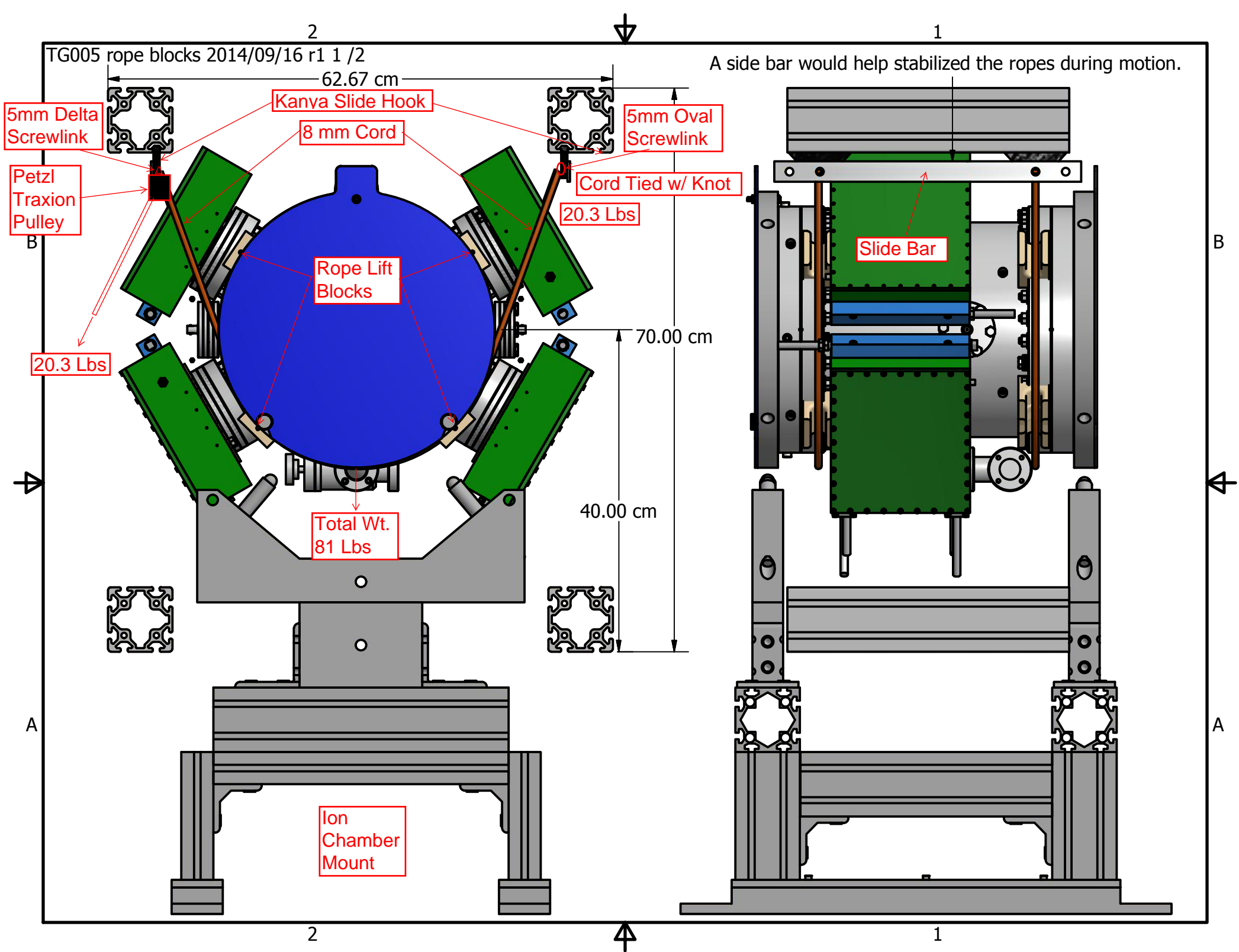
6. Slowly pull tension in both rope free ends. Continue to pull equally to lift the chamber off its mount.
7. Once the chamber is clear of its mounts, lock-off each Traxion pulley by tying two half-hitches with the rope free ends.

Moving

8. Slowly slide both baskets downstream until it is clear, with an operator steadying the chamber on the basket slings and assuring there is no interferences.

Lowering

9. Untie the lock-off knots.
10. While holding tension on both of the rope free end, manually disengage both Traxion cams.
11. Slowly lower the chamber until it is supported.
12. Remove the chamber from the basket slings.



ATTACHMENT 3 to BL-13 ION CHAMBER ORDINARY LIFT PLAN

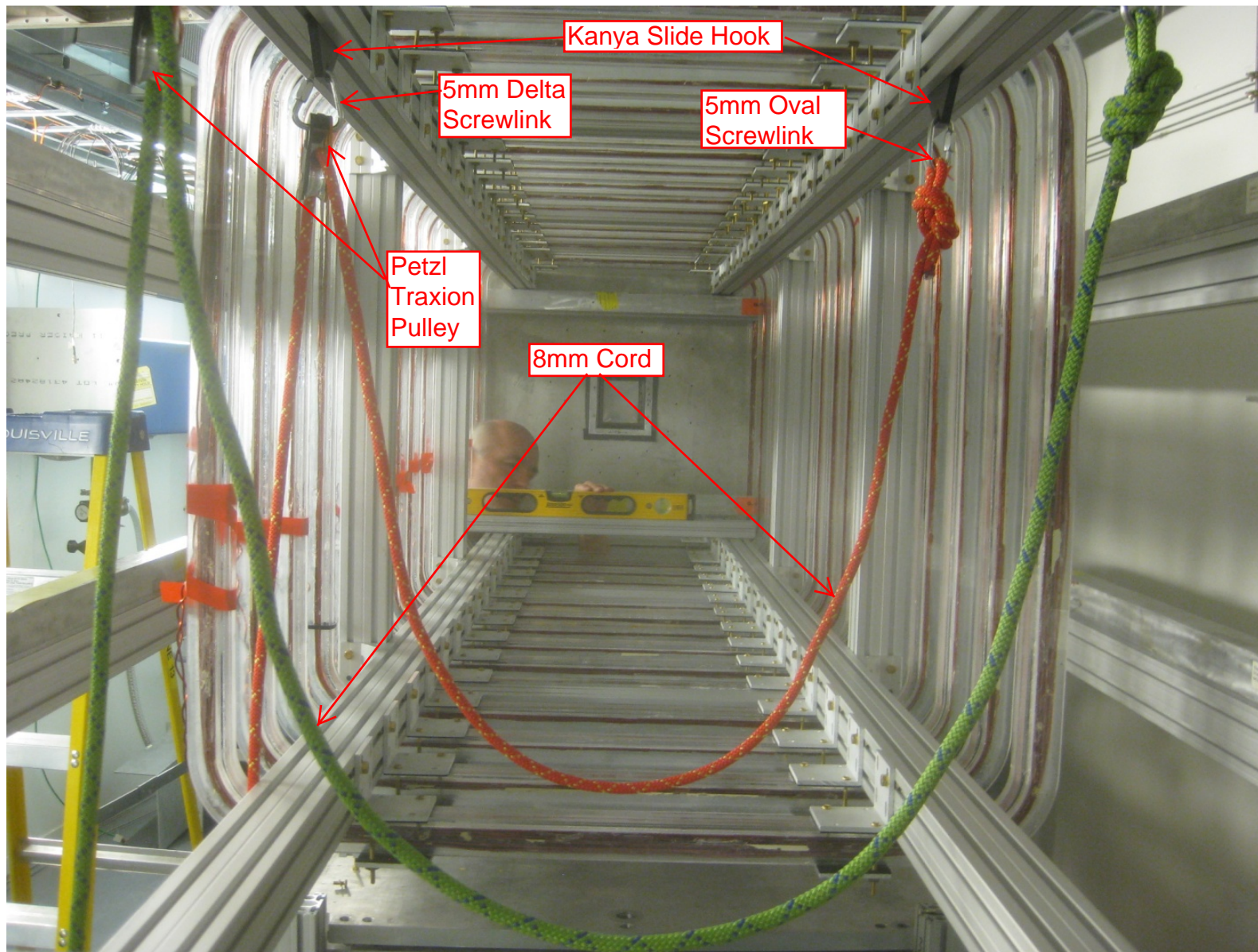



Photo of rigging equipment for BL-13 Ion Chamber Ordinary Lift Plan.

Pulleys

[Printable Version](#) 



[Click over image to enlarge](#)

Petzl Micro Traxion

Product ID: P53
Manufacturer: Petzl

Weight: 0.40 lbs

Description

Very efficient ultralight progress capture pulley

The MICRO TRAXION is an ultra-light (85 g), ultra-compact progress-capture pulley that is exceptionally efficient (91 %) thanks to its sealed ball bearings. The cam works on dirty or icy ropes and can be locked in open position for use as a pulley.

- Ultra-light and ultra-compact progress capture pulley (volume and weight 50 % smaller than the MINI TRAXION)
- Excellent efficiency, thanks to sealed ball bearings (91 %)
- Cam can be locked in open position so device can be used as a simple pulley. Works even on frozen or muddy ropes.
- For use on ropes between 8 and 11 mm in diameter
- Diagrams for rope installation engraved on interior of pulley
- Designed for crevasse rescue, hauling, self-rescue and can be used as emergency ascender

SPECIFICATIONS

Weight: 85 g
Min. rope diameter: 8 mm
Max. rope diameter: 11 mm
Sheave type: sealed ball bearings
Sheave diameter: 25 mm
Efficiency: 91 %
Working load: 2,5 kN x 2 = 5 kN
Breaking strength: 7.5 kN x 2 = 15 kN
Working load as progress capture pulley: 2.5 kN
Breaking strength as progress capture pulley: 4 kN
Certification(s): CE EN 567, UIAA



Click over image to enlarge

Maillon Rapide Delta 5mm Stainless

Product ID: D-050-SS

Manufacturer: Maillon Rapide

Weight: 0.10 lbs

Description

Screw links stand up to multi-directional forces better than carabiners and allow ample room for multiple pieces of gear to be attached. This 5mm size is useful for attachment of ascender components in ascending systems such linking ascenders to the cows tail. The Delta shape is very useful where tri-directional loading will occur.

*Note: Links are stamped with a Working Load Limit (WLL) that is about 1/5 of its rated breaking strength. The user should decide if this is an acceptable ratio for the intended load. When using a Maillon Rapide: Stay well within the Working Load Limit (WLL) stamped in kilograms on every link.

- WLL (Working Load Limit)- 715 lbs.
- MBS (Minimum Breaking Strength)- 3,580 lbs.
- Shape: Delta
- Material: SS (Stainless Steel)

NOTICE:

Maillon Rapides are received from the manufacturer in a closed position. They will be checked prior to shipping and left in the closed position. We cannot accept returns on Maillon Rapides which no longer close as this indicates use and not a manufacturing problem.



Click over image to enlarge

Maillon Rapide Oval 5mm Stainless

Product ID: N-050-SS

Manufacturer: Maillon Rapide

Description

Screw links stand up to multi-directional forces better than carabiners and allow ample room for multiple pieces of gear to be attached. This 5mm size is ideal for *light rigging*. Also useful for backup tethers and other medium duty connections.

Note: Links are stamped with a Working Load Limit (WLL) that is about 1/5 of its rated breaking strength. The user should decide if this is an acceptable ratio for the intended load. When using a Maillon Rapide stay well within the Working Load Limit (WLL) stamped in kilograms on every link.

- WLL (Working Load Limit)- 990 lbs.
- MBS (Minimum Breaking Strength)- 4,960 lbs.
- Shape: Oval
- Material: SS (Stainless Steel)

NOTICE:

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PMI 8mm Accessory Cord (Prusik Cord)

Product ID: CC080

Manufacturer: PMI

Weight: 0.03 lbs



Click over image to enlarge

Description

PMI accessory cord is made with the ideal combination of force absorption, flexibility, and durability. Lightweight and supple line makes creating anchors and tying knots a breeze. Prusik cord comes in standard colors (green/blue or red/yellow) to keep your gear organized. There is also a multi color.

8mm

Weight - 39 g/m

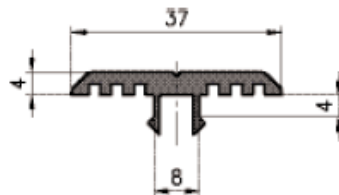
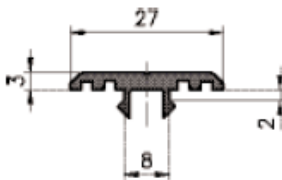
MBS - 13.4 kN (3012 lbf)

The perfect size rope to tie Prusiks on 11mm rope.

Please order cordage by the foot, i.e. 5 = 5 feet

Maximum standard length is 328 feet (100 Meters)

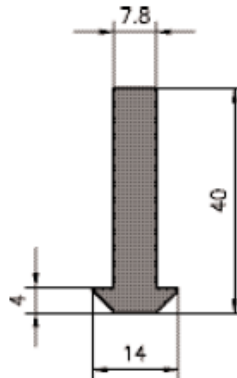
Up to 800M can be manufactured at additional cost.

Base of 50/40**Base of 30****Application**

This slide extrusion is mounted on the extrusion, acting as a sliding carrier for goods or pallets. The slide extrusion can also be used as a protective strip.

Specification

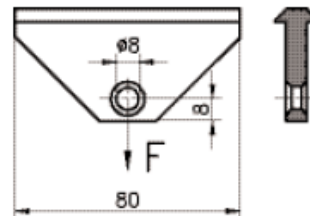
PP with Talkum 30%, black

**Application**

For single sliding doors, suspended fittings, cable supports and many other uses. Fits all standard KANYA extrusions.

Specification

PE, black

**Sliding hook****Application**

The sliding hook is ideally suited for suspended tool applications or as a cable guide. It is simply pressed into the extrusion slot and moves freely. Other lengths of multiple-hole versions are available on request.

Specification:

Slider: PE, black

made from a plastic slide extrusion, A69-0-00

load-bearing capacity: F = 300 N

Spring hook: chromium-plated steel

Order data	Order number
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No spring hook	A69-00
With a spring hook	A69-01

Order data	Order number
Plastic slide extrusion	Base of 50/40
Standard length 5000 mm	AC39-20-00/5000
Cut to length	AC39-20-02-02/...
Plastic slide extrusion	Base of 30
Standard length 5000 mm	B39-20-00/5000
Cut to length	B39-20-02-02/...

Order data	Order number
Plastic slide extrusion	Base 50/40/30/20
Standard length 5000 mm	A69-0-00/5000
Plastic slide extrusion	
Cut to length	A69-0-02-02/...

