

STANDARD FOR TOTE BUGGIES

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1. FOREWARD

This document has been prepared to introduce standards and standardisation in the material handling industry with regard to Tote Buggies . This is a standardising document and aims to facilitate the use of Tote Buggies supplied by various suppliers within the same facility.

2. INTRODUCTION

Tote Buggies, referred to as buggies from here on in, are used many industries to transport product. These trolleys vary in size and are required to meet certain standards in order to be safe, hygienic and reliable.

3. SCOPE:

This standard specifies the requirements for plastic Buggies for use in the industries for the discharge and storage of various products. The Buggies will be used for the storage and transport of linen and goods which may be in contact with humans.

The purpose of the standard is to define the material used, specific requirements, type tests and production quality controls.

Companies manufacturing to this standard must be certified to ISO 9001 or equivalent.

4. NORMATIVE REFERENCE

This standard incorporates dated or undated references from other publications. These 'normative' references subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated reference the latest edition of the publication referred to applies.

ISO	1133	Plastics Determination of the Melt Flow Rate of Thermoplastics
ISO	1183	Plastics: Method of determining density
ISO	R527	Determination of Tensile Properties
ISO	175	Plastics: Determination of the effects of liquid chemicals, including water
ISO	1872	Plastics: Test specimen preparation
EN	45020	General terms and their definition concerning standardisation and related activities

5. DEFINITIONS

Tote Buggy; An open-top container that retains its design shape for the purpose of carrying and transporting product without any external support other than elements incorporated in its design.

6. DESIGN REQUIREMENTS

- 6.1 The trolleys shall conform to the dimensions in Annex 1.
- 6.2 The product shall be manufactured from UV stabilised, medium density polyethylene. (Colour to be specified).
- 6.3 Any corners or edges on the product must be rounded to a minimum radius of 10mm.
- 6.4 Sufficient ribs and stiffeners shall be moulded into the product to generate strength and prevent warpage.
- 6.5 In order to aid the operator and ease manoeuvrability, the product shall incorporate handles fitted externally on the unit. These handles are specified in Annex 4.
- 6.6 The product shall incorporate heavy duty, non-marking, freely moving castors with wheel and bearing protection. See Annex 3 for specifications.
- 6.7 The product shall have a painted 19mm plywood sheet fitted onto the base of the product to facilitate load spread.
- 6.8 A PVC cover shall be made available which will completely cover the opening on the Buggy. See Annex 2 for specifications.
- 6.9 Panels to accommodate customer signage or advertising shall be incorporated in the design.
- 6.10 There shall be a range of sizes made available; 250L, 300L, 330L, and 500L

7. MATERIAL PROPERTIES

- 7.1 Raw materials (Medium Density Polyethylene)
The material must be determined in accordance with ISO 1183 method A or D. A single resin polymer shall have a density not less than 932kg/ m³ and not greater than 952kg/ m³.
- 7.2 Melt Flow Rate
The Melt Flow Rate is measured in accordance with ISO 1133 Section 4, must be a maximum of 7g/10min and a minimum 3g/10min. Test to be carried out on raw material.
- 7.3 Weather Resistance
The material and colouring used in the manufacture of the body shall be ultra violet light stabilised to a rating of 8 or greater.
- 7.4 There shall be no colour give-off from any material in contact with the product being handled.
- 7.5 The wooden base shall be made from 19mm marine plywood and painted in a weather resistant paint.
- 7.6 PVC covers if used shall follow the following criteria and reflect a resemblance to the drawings in Annex 2,
Material Grade : As per annex, See Annex 2.
Thread Type: As per annex, See Annex 2.
Top edge of covers if used shall have inserted elasticised rope to facilitate secure covering of the Buggy
Turn button Type(if used): Must have a locking hole to accommodate a security tag to fit through it. They shall not degrade in wet conditions.
Edging: all edges of the curtain shall be sewn in lap formation by at least 5mm.
- 7.7 Castors
Castors shall follow the specifications given in Annex 3.

8. BODY

- 8.1 Capacity and Tolerance
The inner capacities shall be 0.25m³ , 0.3m³ 0.33m³ and 0.5 m³,+20% / - 10%
- 8.2 Visual inspection
On visual inspection of the buggy there should be no bubbles, blisters, or other defects that could cause a hole or fracture.
- 8.3 Weight
The weight of the body of the buggy excluding all fittings shall be no less than 12.5kg, 14kg , 14.5kg and 16 kg +/-5%.
- 8.4 Wall thickness
The minimum wall thickness on any point of the sides, top or base shall not be less than 4mm +/- 5%.
- 8.5 Load capacity
The buggies shall be designed and tested to give a minimum load capacity of 500kg, 600kg , 660kg and1000kgThe load capacity shall be stated on the product.
- 8.6 The certified load capacity shall be the stated load capacity multiplied by a factor of 1.25 +/- 10%.
- 8.7 The trolley shall be sized as per Annex 1 +/- 5%.

9. TESTING

9.1 Kerb Test;

The Tote Buggies, complete with all its framework and fixings shall be subject to a series of tests as follows:

- a) The trolley shall be loaded with weight which equates to its certified capacity well distributed.
- b) The temperature at test shall be 20°C +/- 5°C.
- c) The buggy shall be pushed down a kerb drop of 100mm, 50 times while fully loaded. All 4 wheels shall be disembarked from the kerb during each drop.
- d) Result:
 - No failure of the buggy, base or any part shall occur.
 - The buggy shall retain its shape and functionality during testing.
 - The buggy when emptied shall return to its original shape within 1 hour and be suitable for re-use.

9.2 Test frequency

- a) Load capacity is a type test and shall be completed once at the initial stage of the product.
- b) Weight: The weight of each size buggy shall be tested every 6 months from samples randomly picked from production to be sure the shot weight and material is consistent.
- c) Kerb test: product randomly selected from production run every 6 months shall be tested in accordance with 9.1 above
- d) Capacity: As defined in 8.1, is a type of test that is completed once off.
- e) Visual inspection: Every trolley.
- f) Wall thickness: product randomly selected from production run every 3 months shall be tested, samples taken from a grid of 24 locations spread over the 6 faces of the trolley shall be tested.

9.3 Curtain Thread Test

The thread used for the sewing of the PVC curtain shall be tested once off to define the correct thread. A length of 300mm shall be subject to a drop test with 250g of mass dropped 300mm. The thread shall not break. The thread shall be soaked in Xylene for 15 minutes; the thread shall not degrade within a further 15 minutes.

10. FITTINGS AND OPTIONAL EXTRAS

10.1 There shall be an option PVC covers made available.

10.2 Handles shall be specified as per Annex 4.

10.3 Annex 2 shows the specifications these covers shall be manufactured to.

10.4 Castors shall be matched to the specifications given in Annex 3.

11. MARKINGS:

The following information should be marked on each trolley:

- Year of Manufacture.
- Standard number.
- Load capacity.
- Name of manufacturer.
- Maximum weight when empty.
- Quality checked and signed.
- Product code.

12. PRODUCTION AND QUALITY CONTROL

The tests described in chapter 9 of this standard shall be carried out at the frequency indicated above during production, quality control, and records maintained within a quality system. This system should be audited and certified by a Certified External Authority in accordance with CEN regulator EN 45020.

13. HANDLING AND USE

The manufacturer shall supply instructions for the handling and use of the trolley.

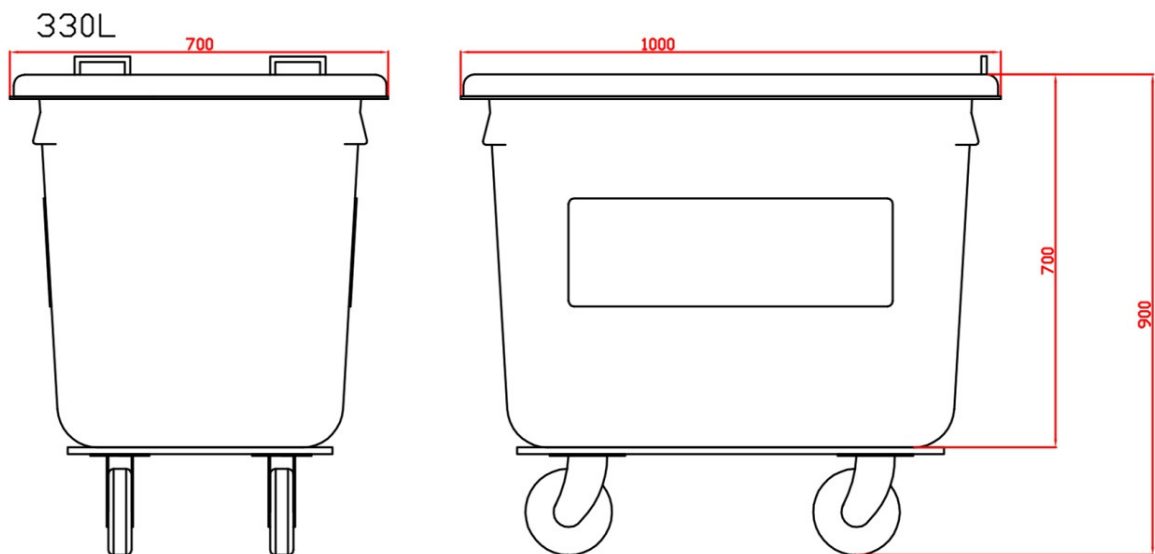
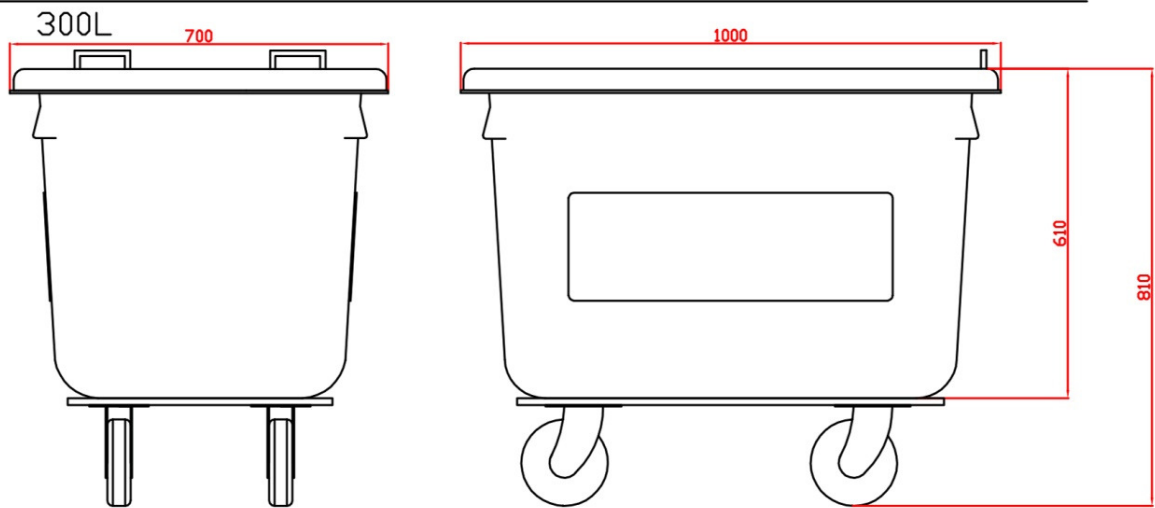
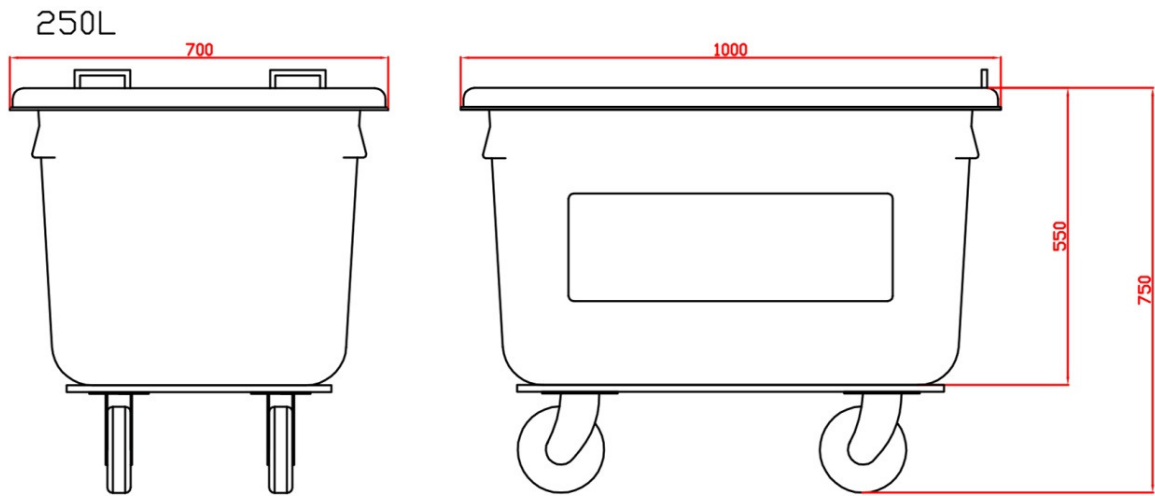
14. RECYCLING/ REPAIR

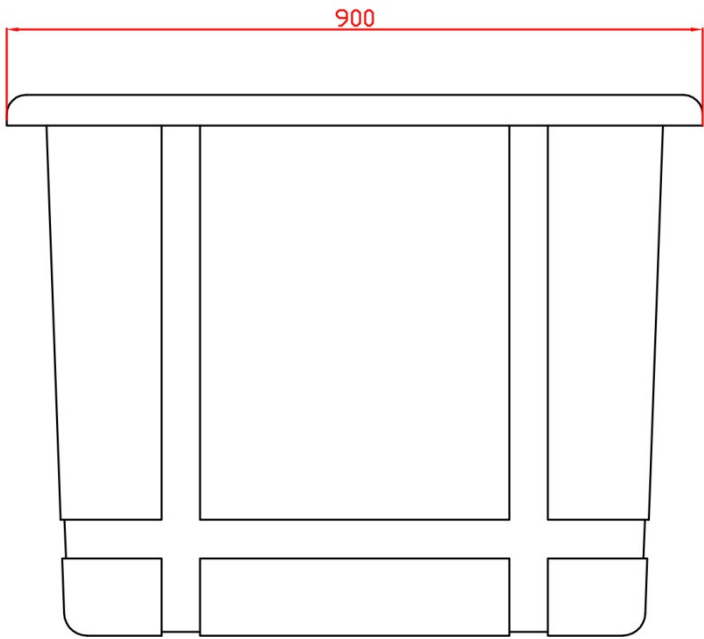
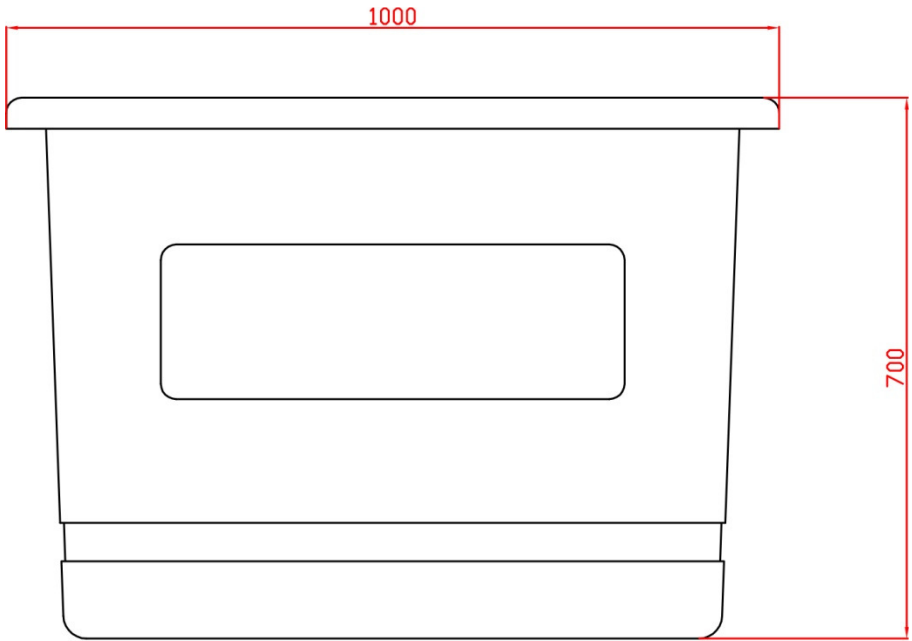
It shall be a condition of supply that the supplier offer the facility to take back for recycling, end of life product.

The supplier shall furthermore offer the facility to repair product which may suffer minor damage.

Annex 1

Tote Buggy Sizes





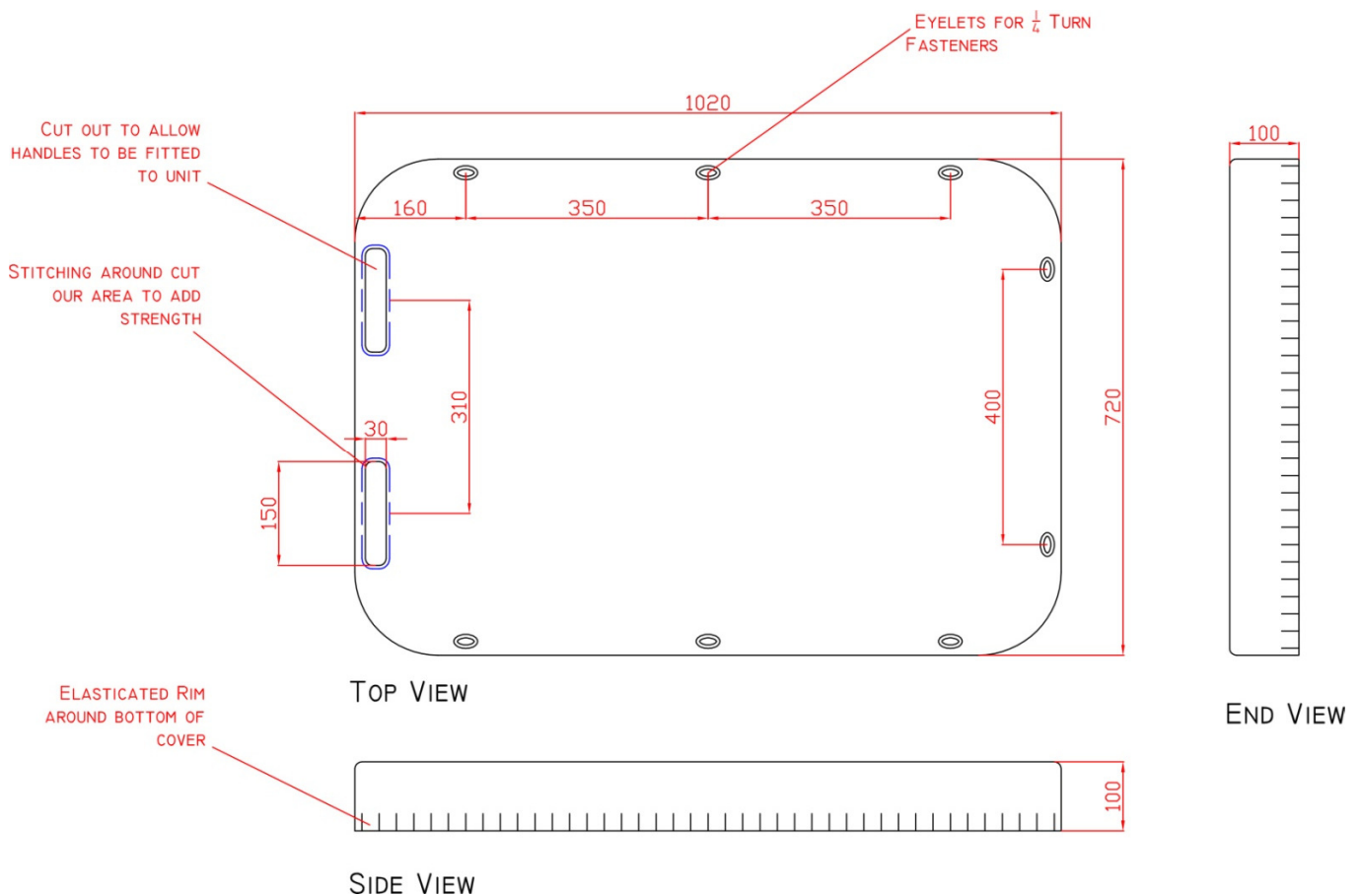
Annex 2

PVC Cover specifications.

Thread Type:

#15 UV stabilized polyester, bonded, thickness is measured in numbers, this is to be a number 9.

TECHINICAL CHARACTERISTICS - QUALITY : 453		
Base Fabric		Polyester 1100 Dtex, 2 - Skaft
Coating		PVC
Weight	EN 1849-2	700 g/m ²
Tear Resistance	EN 12310-2 / DIN 53356	400 / 300 N
Tensile Strength	EN 12311-2	3000 / 2900 N / 5cm
Adhesion	DIN 53357	100 N / 5 cm
Flame Retardancy	SIS 650082	Satisfactory
Temperature Resistance	EN 495-5 / DIN 53361	70°C / -30°C
Finish		Untreated / Matt



Annex 3

Castor Specifications.

Rubber Steel Plate 160mm

Characteristics

High wear resistance, long life span
Shock resistant & vibration absorbing
Temperature range: -20° / 60°C

Floor saving tyre, silent running
Hardness of thread: 82 Shore A
Good chemical resistance

Wheel

Wheel Diameter	160mm
Wheel Width	40mm
Bearing Type	Needle roller
Wheel Bore	20mm
Hub Length	59mm
Capacity	150kg

Castors

Zinc plated pressed steel housing

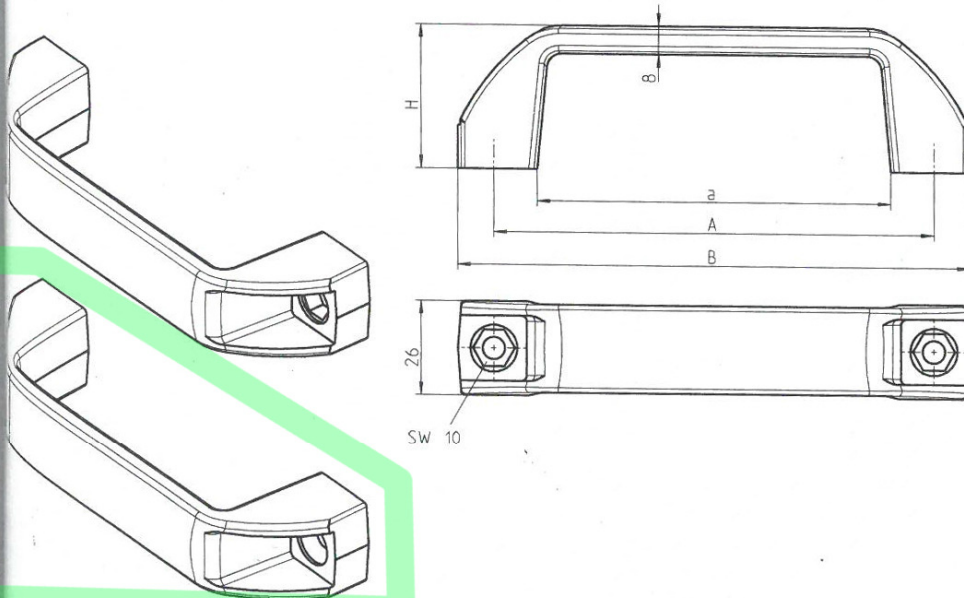
Wheel Diameter	160mm
Wheel Width	40mm
Bearing Type	Needle roller
Plate Sizes	135 x 110mm
Hole Centres	105 x 80mm
Hole diameter	11mm
Overall Height	198mm
Load Capacity	150kg
Offset	57mm



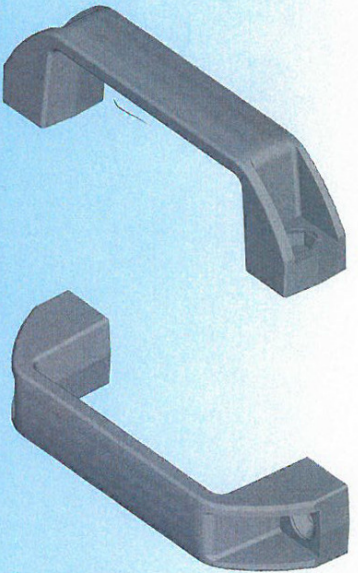
Annex 4

Handle Specifications

Polyamide handle



Version 1: a = 98; A = 122; B = 142; H = 40
Version 2: a = 118,5; A = 152; B = 167; H = 53,5



Handle polyamide black

Handle for hexagon or socket head screw M6 according to DIN 933/84

Handle for countersunk screw M5 according to DIN 963 - 966

or rivet \varnothing 4,8 mm