

1. Technical Specifications

1.1. Site Quality Management Systems

N°	Criteria	Description	Options	Remarks
1	ISO	Certified according to ISO 9001:2015	Copy Upon Request	
2	ISO	Certified according to ISO 14001:2015	Copy Upon Request	
3	ISO	Certified according to ISO 45001:2018	Copy Upon Request	
4	ISO	Certified according to ISO 50001:2018	Copy Upon Request	
5	BRCGS	Certified according to BRCGS PM 6	Copy Upon Request	

1.2. Style, Design, Construction & Function

N°	Criteria	Description	Remarks
1	Style, Design and Construction	The trigger sprayer will conform in style, design and construction to the technical drawing as indicated in section 4.	
2	Output	Nominal output per stroke with water: 1.25 ml Output tolerances: ± 0.10 ml	TP 120
3	Priming	Strokes to prime of the unit shall be a maximum of 5 strokes with water. Variables such as dip tube length and test medium will affect strokes to prime.	TP 119
4	Durability	The trigger sprayer will deliver a compliant output up to 9.000 strokes with water	TP 197
5	Spray Pattern	Spray pattern shall be consistent depending on the nozzle version (spray/foamer) and medium used.	
6	Sprayer to Bottle Seal	As long as the recommended bottle neck dimensions are respected and the recommended application torque is applied, the sprayer-gasket seal will prevent leakage from the bottle (see 4.2 Recommended Bottle Neck Drawings).	
7	Venting	When the trigger sprayer is fully actuated with not more than 90 strokes/min, the bottle will be vented with no obvious vacuum in the bottle.	
8	Leakage	<u>Dynamic Leakage</u> : During actuation in upright position with sprayer nozzle in the "ON" position unit shall not incur one falling external drop during 10 continuous strokes. <u>Static Onside Leakage</u> : with sprayer nozzle in OFF position, unit shall not incur one falling external drop in 4 continuous hours.	
9	Dip Tube	Straight or Bent on freshly assembled items (see 1.4 Recommendations for Proper Use). O.D. is 3.95 ± 0.05 mm. <u>Bent Tube Angle</u> - The bend of the angle is 14° on freshly assembled unit $\pm 4^\circ$ - The bend point is at 95.80 ± 1.00 mm from under the Gasket	
10	Dip Tube Length	Complies with relevant bottle length with a precision of ± 1 mm under gasket (dip tube length from 125 mm up to 285 mm possible).	TP 109
11	Dip Tube Retention Force	The dip tube retention force will withstand an instantaneous direct vertical pull of no less than 50 N. This ensures that the dip tube will not separate from the tube retainer during a controlled turning process onto a bottle.	TP 191
12	End of the Dip Tube	U-cut. This allows unaffected priming in case of contact of the dip tube with the wall or the bottom of the bottle.	

13	Dip Tube Deflection	Deflection of the tube from its longitudinal axis shall not exceed 15° on freshly assembled units.	
14	Nozzle	The nozzle will be assembled in the "OFF" Position.	
15	Closure	The closure shall be fully fitted onto the valve body and will turn without excessive interference and/or drag.	
16	Actuation Force	Actuation force results out of the spring load and the stream resistance of the liquid.	
17	Aesthetics	Workmanship must be first class throughout the process to ensure that the unit is free of any defect that will affect its quality image.	
18	Color	Color is verified against the UV-protected color chip.	
19	Child Resistant	SP05 CRC is available on demand.	

Remark: All criteria are verified according to applicable test methods from Silgan Dispensing

1.3. Classification of Non-Conformances

- This procedure establishes a consistent method for classifying non-conformances.
- When non-conformances are found, they will be placed in the class with the description that applies.
- This specification applies to finished assemblies.

Class	AQL	Type	Description
Not Allowed	0	Safety	Hazardous or unsafe condition for individuals handling or using product
		Regulatory	Violation of REACH and 94/62/EC requirements
Critical	0,25	Material	Components produced from non-specified material Subassembly or final assembly produced with non-specified components
		Hygiene	Essential contaminations
		Packaging	Packaging materials not according to specification
Major	0,40	Performance	Fails to meet design performance specifications
		Joint Security	Fails to meet joint security specifications
		Leakage	Fails specified leak test requirements
		Dimensional	Fails to meet specified dimensional tolerances
		Material	Damaged parts, affecting trigger sprayer performance
	Aesthetic	Any appearance non-conformance that may cause the consumer to select another package	
Minor	1,50	Aesthetic	A defect will be classified as minor if it is not likely to reduce the product's stability, but reflects poor workmanship

Not Allowed (0): Any defect which affects the user safety or which is not in accordance with applicable regulations.

Critical: Any defects that cause a functional failure of the product.

Major: Defect which reduces the normal functioning of the product.

Minor: Defect which does not affect the functioning of the product or affects slightly its aesthetics.

The product inspection is made at different steps according to the control plans both on quantities and frequencies established by the manufacturing site.

Customer non-conformances are managed by Silgan Customer Service and Quality Assurance. In order to aid in the investigation of root cause, defective samples preferably not manipulated are needed as well as a label identification of the affected lots. In addition information indicating the total quantity of affected material and the estimated percentage of defective units is needed.

The type of packaging is suitable for internal handling and stocking of the finished product. Any damages of the packing which are due to the transport and found by the Customer on acceptance of incoming goods should be

pointed out by the Customer to the transporter. The type of damages must be reported in writing on the transport document CMR and/or Silgan Delivery note and it should be sent by writing to us.

1.4. Recommendations for a Proper Use

N°	Criteria
1	It is recommended that the temperature where the Customer stores the units shall not be lower than 10° C / 50° F and shall not be higher than 45° C / 113° F. The relative humidity shall not be higher than 70 – 80%, since this could cause breaking of the packing cartons. It is recommended that pallets be kept in the production department and allowed to settle to room temperature (20 ± 3° C / 68 ± 5° F) before being used. In order to prevent defects to the cartons/units it is recommended to not over-stack the pallets.
2	Storage shelf-life recommendation is no more than 2 years in suitable storage conditions as of Silgan Dispensing manufacturing date.
3	The article is leak-proof as defined in section 1.2, item #8. The unit is not guaranteed if excessively squeezed.
4	Boxes shall not be turned and stored upside down.
5	The article shall be used and stored in upright position.
6	The nozzle shall be turned in STOP position after every use.
7	The article is produced and sold as a non-sterile product.
8	It is recommended to perform a compatibility test for each formula.
9	Normally the use is self-explanatory, but may require some additional instructions for the Consumer.
10	The bottle neck shall comply with the applicable recommendations of the material and dimensions of the neck used as mention in section 4.2.
11	We recommend applying the application torque as mentioned in section 4.2.

2. Components and Materials

2.1. Material Compliance

All polymer materials that are used in our manufacturing process comply with the Packaging and Packaging Waste 94/62/EC Directive. Declarations of Conformity with specific Regulations are available on demand.

This article is not intended to come in contact with food and/or cosmetic products.

This article is not produced with the intention of multiple uses (reuse) with different formulations.

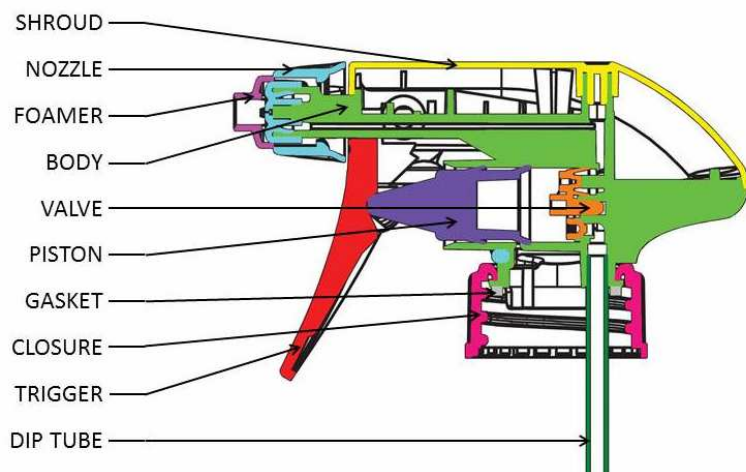
Customers must make their own determination that the use of our product is safe, lawful and technically suitable in their intended applications.

The packaging component is not bio-degradable; it can be used as a source of energy after separation into component parts; the packaging can be used for recycling.

CR trigger sprayers must be certified with the customer bottles to comply with the ISO 8317 Regulation on Child Resistant Packaging (CRP).

2.2. Materials of Construction

N°	Component	Material Type
1	Shroud (*)	PP (PCR available)
2	Nozzle (*)	PE
3	Foamer (*)	PP
4	Body	PP
5	Bivalve (*)	EBA
6	Piston	PE
7	Gasket	PE/EPE
8	Closure (*)	PP (PCR available)
9	Trigger (*)	PP (PCR available)
10	Dip Tube	PP
11	Spring (not shown)	POM (PBT)



(*) Silgan can add masterbatches in the starred components of the table above during the molding process.

3. Compatibility Product Policy

In response to customer request, Silgan will conduct certain product compatibility tests. These test results will be shared with customers for preliminary and comparative product evaluation purposes only. Sharing of test results is intended to communicate neither express nor implied warranties of fitness for any particular purpose or customer end use. Silgan customers must independently evaluate the suitability of our products for their planned applications and should not refer to Silgan preliminary test results as evidence of technical suitability. Customer must always make the final decision.

4. Technical Dimensions

4.1. Main Dimensions

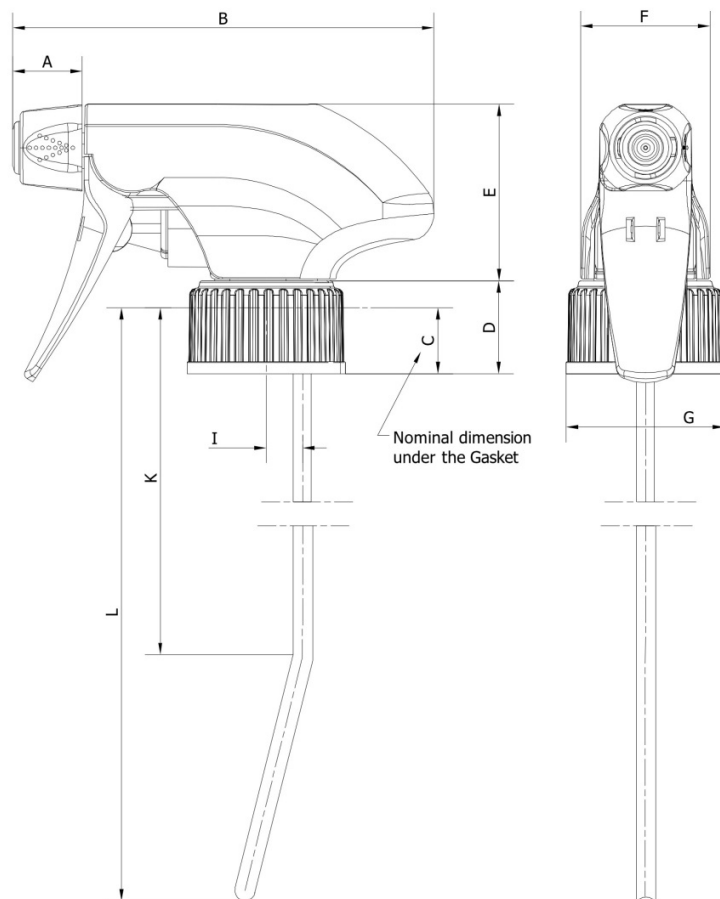
	Spray	Foamer STD	Foamer Mesh	Door Foamer	Foamer M3B
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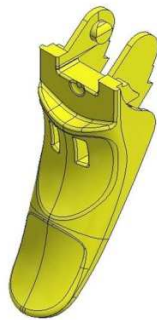
Dimension A	14,50 mm	20,20 mm	20,20 mm	20,40 mm	20,40 mm
Dimension B	88,10 mm	93,80 mm	93,80 mm	94,00 mm	94,00 mm

Welded Mesh M3B Foamer and Welded Mesh Door Foamer available on demand.

Dimension	Value
E	36,90 mm
F	26,50 mm
I	7,50 mm
K	95,80 mm
L	125 – 285 mm



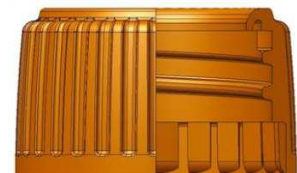
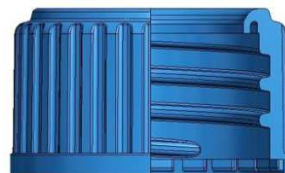
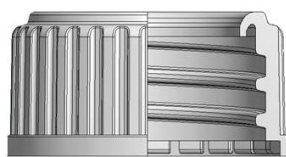
Trigger STD	Trigger Ergo
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Cap 28/400

Cap 28/410

Lock Cap



Dimension C	11,30 mm	13,80 mm	14,60 mm
Dimension D	17,00 mm	19,40 mm	20,00 mm
Dimension G	33,00 mm	33,00 mm	33,80 mm

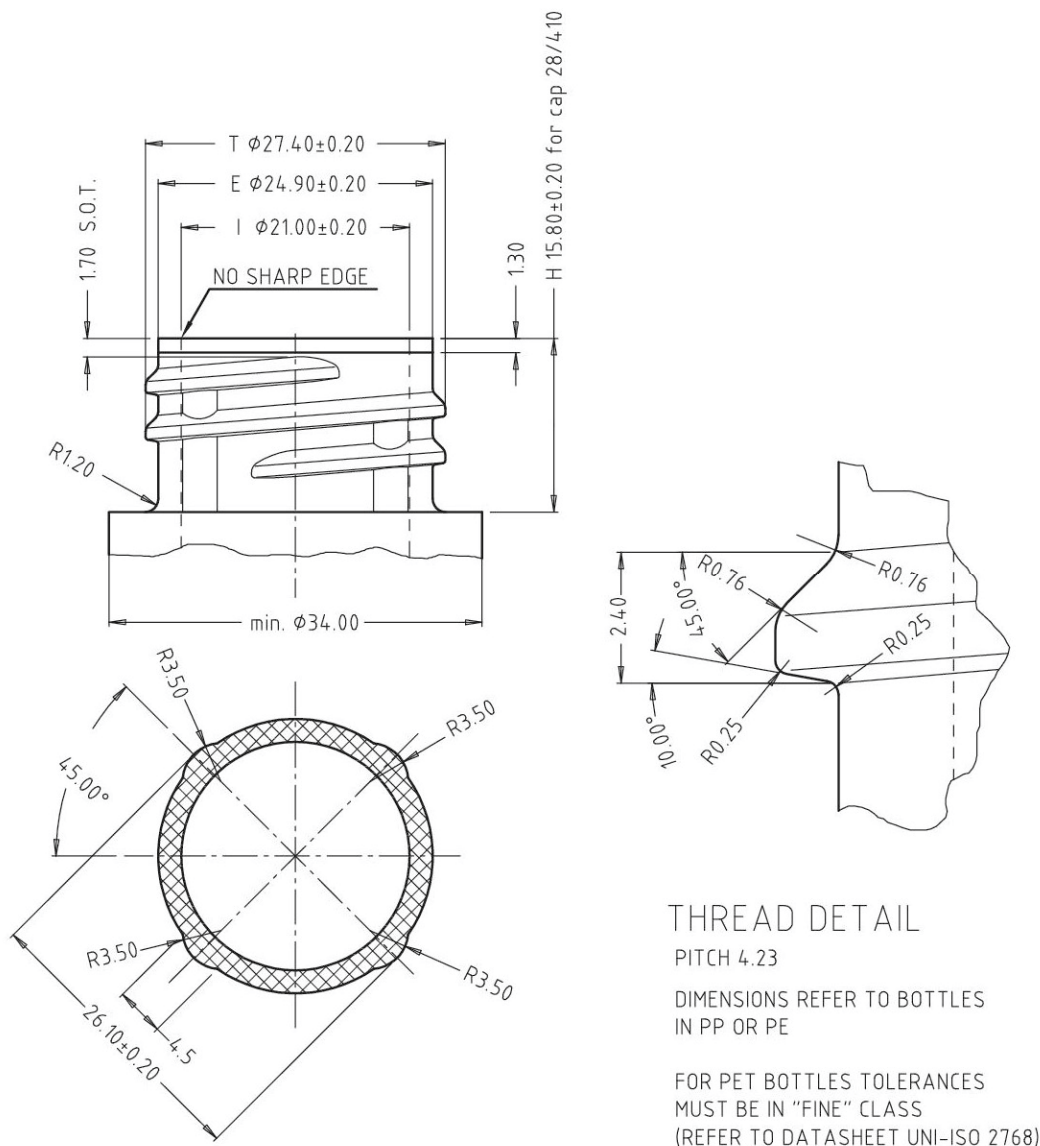
4.2. Recommended Bottle Necks

The neck dimensions shown in the following drawings are those which have generally been found to be functional based on our experience. Because of variability in plastic closure and container finish materials, each closure/finish system should be individually evaluated to ensure it meets applicable performance criteria. Closures and finishes having dimensions outside these ranges are also appropriate for use if applicable performance criteria are met.

Therefore the bottle neck drawing is only a recommendation, however, dimensions and tolerances have to be kept. The bottle neck drawing does not release the bottle maker and the processor from the responsibility of optimizing the coordination between the closure according to the valid article drawing and the bottle neck.

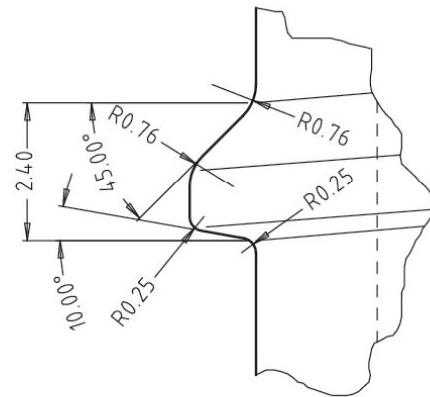
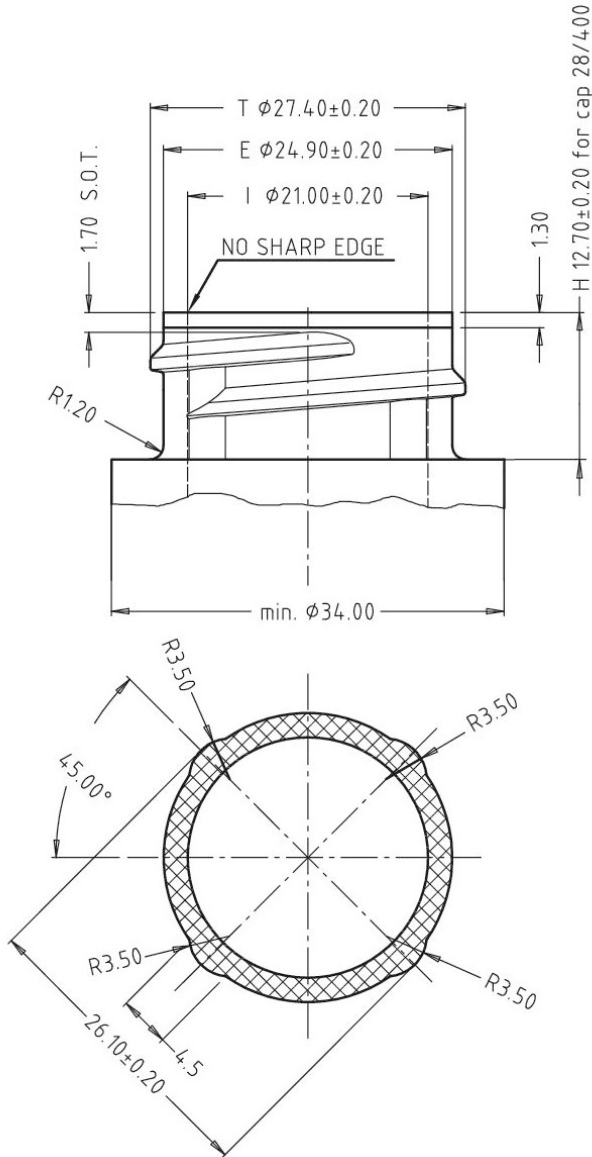
4.2.1 Cap 28/410

The recommended closing torque value for the 28/410 Closure is about 2 – 2,2 Nm, anyway customers must make their own determination based on their process and their bottle neck.



4.2.2 Cap 28/400

The recommended closing torque value for the 28/400 Closure is about 2 – 2,2 Nm, anyway customers must make their own determination based on their process and their bottle neck.



THREAD DETAIL

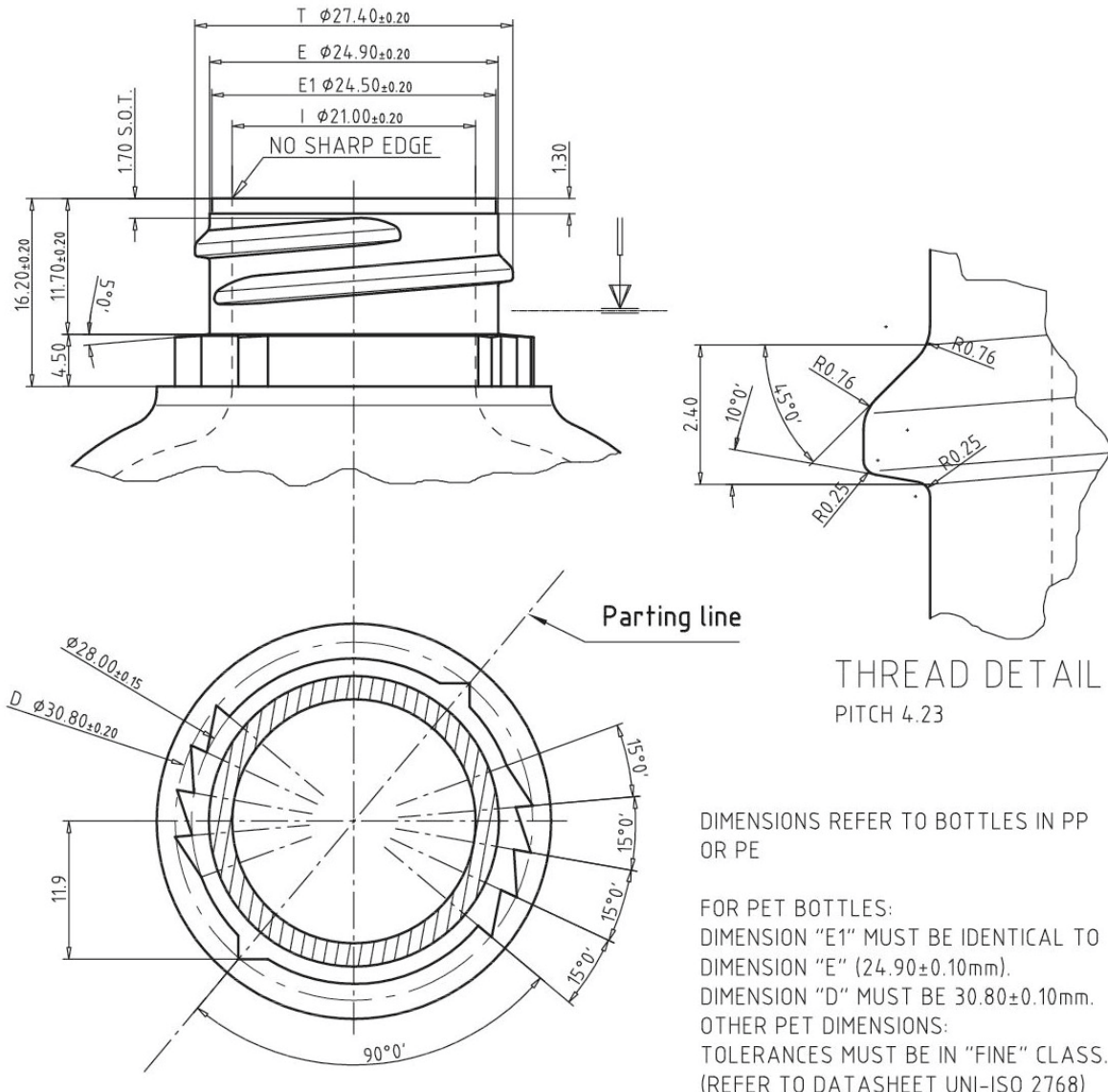
PITCH 4.23

DIMENSIONS REFER TO BOTTLES
IN PP OR PE

FOR PET BOTTLES TOLERANCES
MUST BE IN "FINE" CLASS
(REFER TO DATASHEET UNI-ISO 2768)

4.2.3 Lock Cap

The recommended closing torque value for the Lock Cap Closure is about 3 – 3,5 Nm, anyway customers must make their own determination based on their process and their bottle neck.

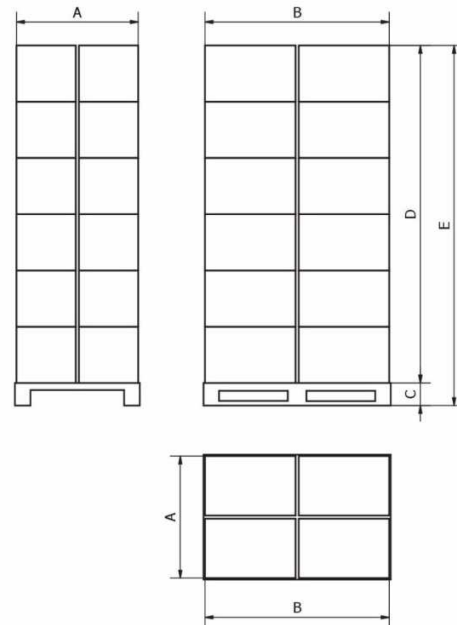


5. Packaging, Shipping & Labeling

5.1. Standard Packaging, Shipping

Dimension	Value
A	80 cm
B	120 cm
C	15 cm
D	215 cm
E	230 cm
Boxes per pallet	24
Boxes per layer	4
Layers per pallet	6
Box size	60 x 40 x 36 cm
Pieces per box	370
Pieces per pallet	8.880
Box weight	9,5 kg (*)
Pallet total weight	247 kg (*)
Pallet Type	Standard

(*) Average value



The pallet is wrapped with stretch PE film.

Other different packaging configurations are available on demand (see TPS Addendum).

5.2. Labeling

Each carton is labeled with the information below:

1. Customer Name and Address
2. Silgan Product Code
3. Quantity of trigger sprayers per carton
4. Dip Tube length
5. Production Lot starting date
6. Customer Product Code (optional)
7. Internal Bar Code
8. Silgan Lot Number
9. Carton Number
10. Total Number of Cartons

Customer 1		
		Product Code 2 PSP050027/14
Qty per Carton 3 370	Dip tube length 4 250 mm	Production date 5 2/09/18
Customer Product Code MTP223 6 MTP223		
7  185368045300370		
Lot 8 185368	Carton N° 9 453 10 456 MADE IN ITALY	

6. Revision History

Date	Rev.	Change	Issued by	Checked by	Approved by
21/11/2018	00	First Issue	N. Cocco	E. Carbone	S. de Vecchi
22/07/2019	01	Updated Safety Regulation	N. Cocco	E. Carbone	S. de Vecchi
24/02/2020	02	Updated Material of Construction	N. Cocco	E. Carbone	S. de Vecchi
24/08/2021	03	Updated Site Quality Management Systems	N. Cocco	E. Carbone	S. de Vecchi
30/03/2022	04	Added PCR Option	N. Cocco	E. Carbone	S. de Vecchi
09/05/2022	05	Delisted Welded Mesh Foamer Option Added Foamer M3B Options	N. Cocco	E. Carbone	S. de Vecchi