FAST MOVING TECHNOLOGY

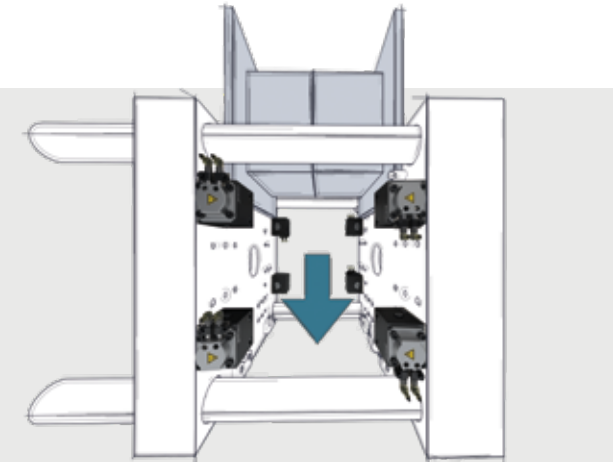
STÄUBLI

Hydraulic Clamping System QMC 100

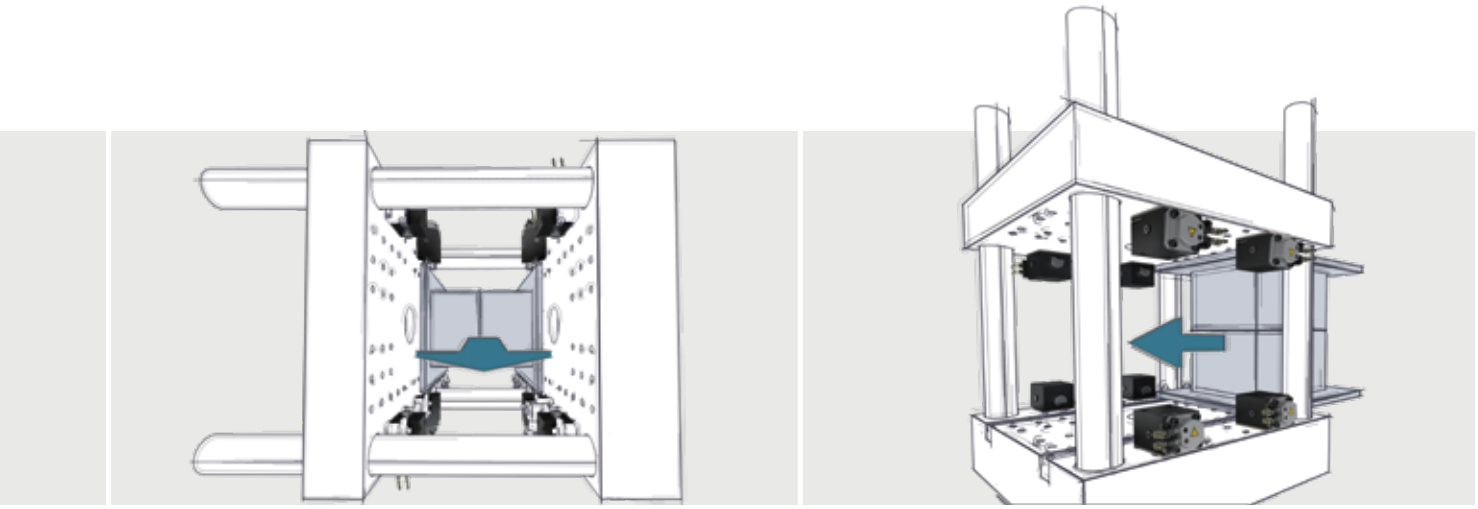
Higher productivity | Plastics industry

VERSATILE AND SIMPLE INTEGRATION

Efficient clamping with QMC 100 clamping elements



Discover Stäubli's full range of solutions for the plastics industry at:
www.quick-mould-change.com



Full flexibility for mould loading

QMC 100 clamping elements can be used for vertical and horizontal mould changes.

The applicable safety requirements and standards must be checked and adhered to when using in vertical presses.

The QMC 100 hydraulic clamping system substantially reduces the time required to change a mould. It provides a significant, highly cost-effective contribution to optimising overall setup times, which forms the basis for achieving Single Minute Exchange of Die (SMED).

Seamless integration

QMC 100 clamping elements are easily integrated into the production process without reducing any mould installation height. The integrated sensor technology enables moulds to be changed automatically in a matter of minutes. Thanks to their versatility, QMC 100 clamping elements can be incorporated in all machine types and applications.

Easy assembly

On new machines and in an existing machine park, the QMC 100 clamping elements are mounted directly on the machine platen in accordance with EUROMAP 2/3/11 or AN-136 (SPI) drilling patterns. Additional holes in the platen can be avoided by adjusting the clamping element hole position.

For all moulds

Due to standardised back plates supporting their configuration, the QMC 100 clamping system can be effectively integrated into an existing mould park.

No hardened inserts or clamping bevels are required on the mould back plates. All common types of steel can be used.

- Tolerance compensation for mould-side back plates of up to +/- 0.1 mm
- Individual clamping height with the fixed spacer plate underneath the clamping element

- **Wide variety of applications** with 6 sizes and high temperature variants
- **Secure clamping** with spring force and friction locking
- **High economic efficiency** due to seamless integration and long service life
- **Full mould height** is retained
- **High process reliability** through standardised mould change procedure

Applications

- Injection moulding machines
- Presses
- Turntable machines
- Retractable tie bars
- Test units

Robust and compact

Flexible hydraulic connection
QMC 100 clamping elements feature hydraulic connections on both sides.

The robust construction makes QMC 100 clamping elements the ideal core component for automatic mould changing.

System sizes
With six sizes available and a clamping force of between 25 and 300 kN per element, QMC 100 clamping elements are ideal for confined spaces and small to medium sized machines.

Materials
The use of high quality materials makes the system virtually maintenance free.

- Hardened clamping block made of quenched and tempered steel with enhanced corrosion protection
- Piston contact surface with enhanced strength & low friction
- Heat-treated and honed piston made of high alloy steel
- Seals made of NBR + FKM

Operating temperature
Capable of handling operating temperatures of up to 100 °C, QMC 100 clamping elements from Stäubli are suitable for a wide range of applications. Special HT elements are also available for high temperature applications.

QMC 100 / HT
for high temperatures
All sizes of QMC 100 hydraulic clamping systems are available in high temperature versions.

- For ambient temperatures greater than 100 °C
- Sustained temperature resistance up to 180 °C
- Special high temperature seal made of PFA SI
- Piston position sensing with heat-resistant limit switches

Friction locking and integrated sensor technology for a high degree of reliability
In addition to the spring force, the piston also locks itself into position during the clamping action. Proximity switches determine and signal the position of the piston.

Powerful and reliable

The Stäubli QMC 100 clamping system follows the principle of a single acting cylinder for reliable clamping of your moulds on the machine platen.

How does it work?
In the home position – without an external power supply – the piston of the QMC 100 clamping element is extended.

The piston is retracted within 2 seconds at a hydraulic pressure of 16 MPa (160 bar), releasing the mould from the machine. It remains in the retracted position for as long as this pressure is applied. When the hydraulic pressure is removed, the piston is automatically extended again by the integrated spring.

Once the clamping process has been completed, no further hydraulic pressure is required. The integrated spring holds the piston firmly on the mould back plate. A self-locking mechanism between the piston and housing provides additional security.

Machine reliability
Two inductive proximity switches sense whether the piston of the QMC 100 is retracted or extended. The corresponding status is indicated by signal LEDs on the clamping element.

- Easily verifiable clamping status
- Conforms to EN 201 safety requirements

Maintenance friendly
QMC 100 clamping elements require virtually no maintenance. Seals can be replaced as necessary without detaching the clamping element from the machine platen.

Hydraulic actuation
QMC 100 clamping elements are operated via one hydraulic circuit per machine platen. The hydraulic pressure can be delivered by a moving core or a standalone hydraulic power pack.

- Hydraulic connection available as an option on both sides of the clamping element

Stäubli hydraulic power pack
If the machine is not fitted with enough hydraulic circuits, Stäubli can provide a separate hydraulic power pack. This removes the need for a costly machine retrofit.

TECHNICAL DATA

Model series

Euromap

QMC 100

QMC 100 / HT

SPI

QMC 100

QMC 100 / HT

	QMC 100, QMC 100 / HT					
	100.025	100.050	100.080	100.120	100.200	100.300
Retention force	25 kN	50 kN	80 kN	120 kN	200 kN	300 kN
Clamping force	2.4 kN	8 kN	8 kN	9 kN	9 kN	11 kN
Unlock pressure	16 MPa	16 MPa	16 MPa	16 MPa	16 MPa	16 MPa
Hydraulic fluid	22 HLP	22 HLP	22 HLP	22 HLP	22 HLP	22 HLP
Viscosity 0 °C - 100 °C	300-4 mm^2/s	300-4 mm^2/s	300-4 mm^2/s	300-4 mm^2/s	300-4 mm^2/s	300-4 mm^2/s
Oil volume	18 cm^3	37 cm^3	37 cm^3	106 cm^3	113 cm^3	154 cm^3
Max. flow rate	1 l / min	1.5 l / min	1.5 l / min	3.5 l / min	4 l / min	5 l / min
Max. residual pressure in return line to tank	0.5 MPa	0.5 MPa	0.5 MPa	0.5 MPa	0.5 MPa	0.5 MPa
Max. environment temperature QMC 100	100 °C	100 °C	100 °C	100 °C	100 °C	100 °C
Max. environment temperature QMC 100 / HT	180 °C	180 °C	180 °C	180 °C	180 °C	180 °C
Sealing system QMC 100	NBR+FKM	NBR+FKM	NBR+FKM	NBR+FKM	NBR+FKM	NBR+FKM
Sealing system QMC 100 / HT	PFA SI	PFA SI	PFA SI	PFA SI	PFA SI	PFA SI

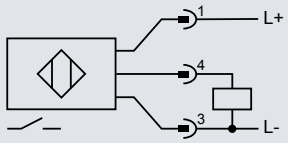
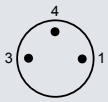
Items included:

- Clamping element
- Energy chain compatible cables for sensor set
- Spacer plate
- Screws (Euromap)

Available on request:

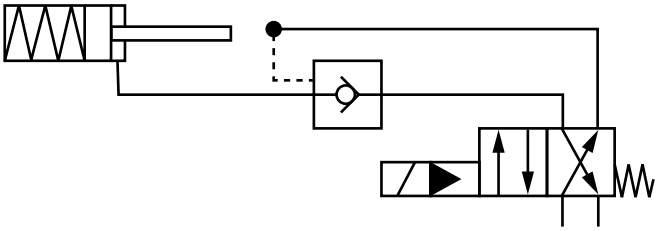
- Special dimensions
- Special piston geometry
- Variants suitable for JIS B 6702
- Separate power pack

Piston position sensing

	QMC 100	
	100.025	100.050 – 100.300
		
Technical data, proximity switch		
Type	M8 x 1	M12 x 1
Operating voltage	10-30 VDC	10-36 VDC
Output function	N/O contact, PNP	N/O contact, PNP
Electrical connection	M8 x 1 plug, 3-pin	M12 x 1 plug, 4-pin
Protection class, query set	IP68	IP68
Max. ambient temperature	100 °C	100 °C
Display unit	LED	LED
Approval / conformity	CE, cULus	CE, cULus
Technical data, energy chain compatible cables		
Type	M8 x 1 socket, angled, 3-pin	M12 x 1 socket, angled, 4-pin
Length	5 m	15 m
Display unit	Green LED: Voltage Yellow LED: Sensor, damped (Pin 4)	Green LED: Voltage Yellow LED: Sensor, damped (Pin 4)
Approval / conformity	cULus	CE, cULus

	QMC 100 / HT
	100.025 – 100.300
	
Technical data for the mechanical switch	
Type	Housing with micro switch
Breaking capacity	15 A (250 VAC); 6 A (24 VDC)
Output function	N/O contact
Line connection	M2.6 x 4 ISO 1207
Interior / connection protection class	IP 40 / IP 00
Max. ambient temperature	180 °C
Approval / conformity	CE

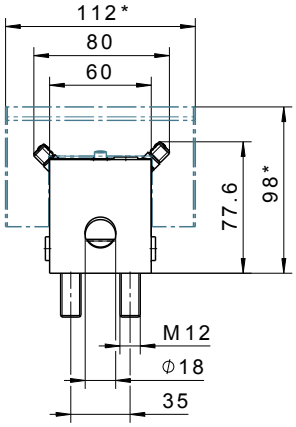
Hydraulic actuation

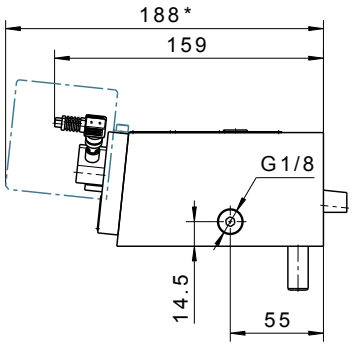


TECHNICAL DATA

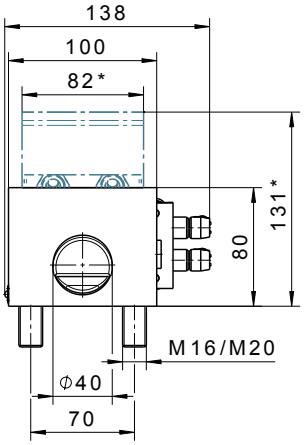
Euromap

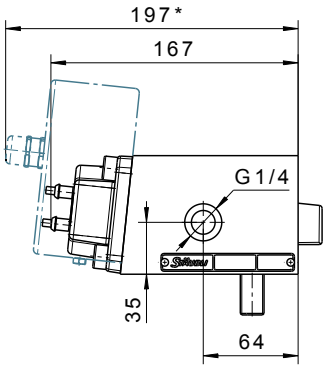
QMC 100.025



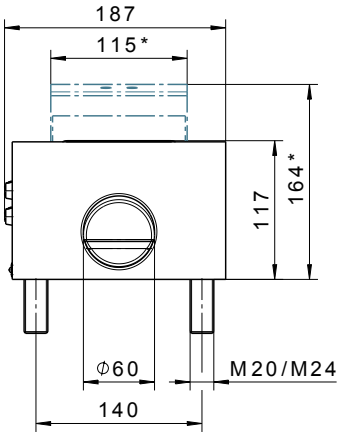


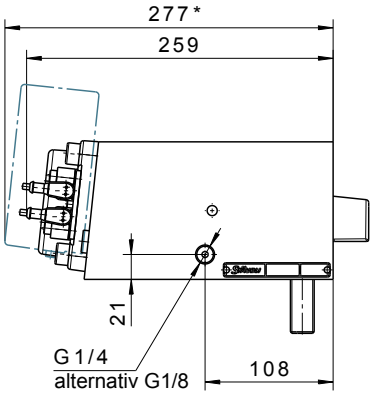
QMC 100.050 - QMC 100.080





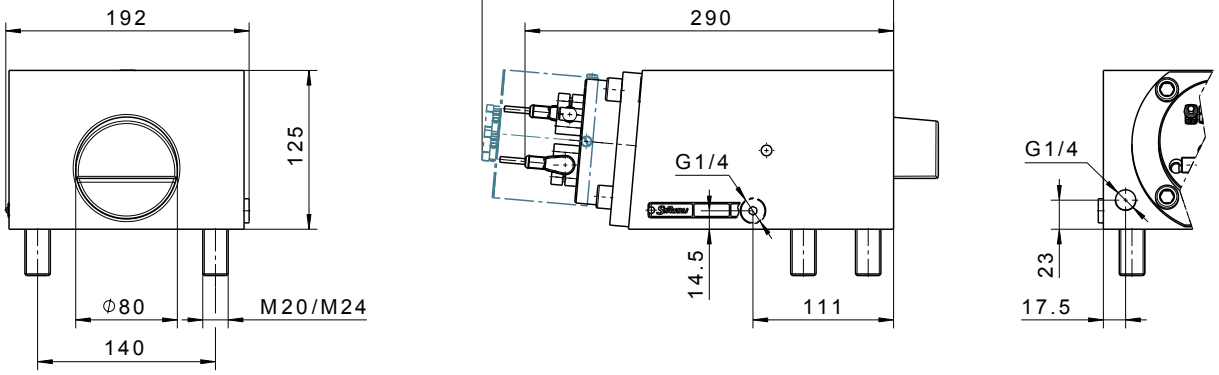
QMC 100.120



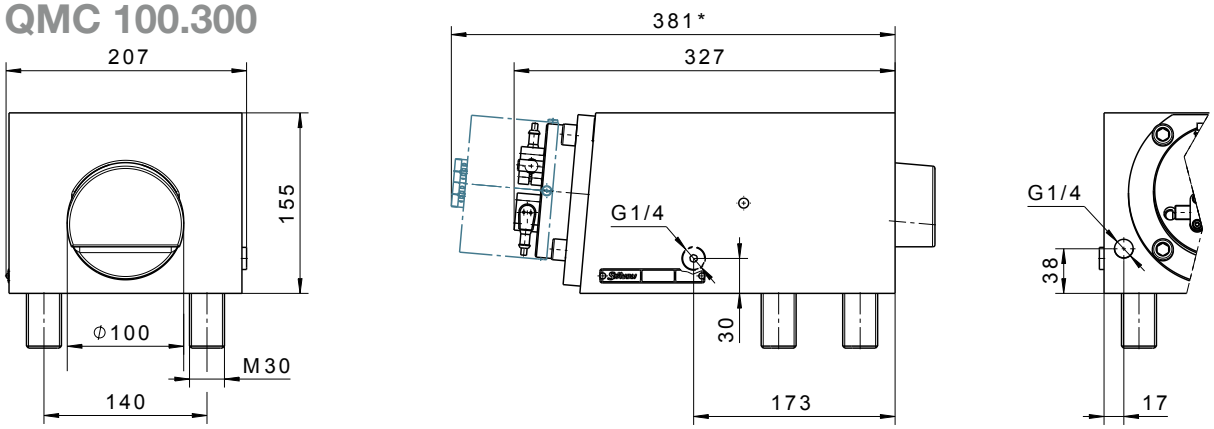


* Varying dimensions of the HT variant are shown as dash lines.

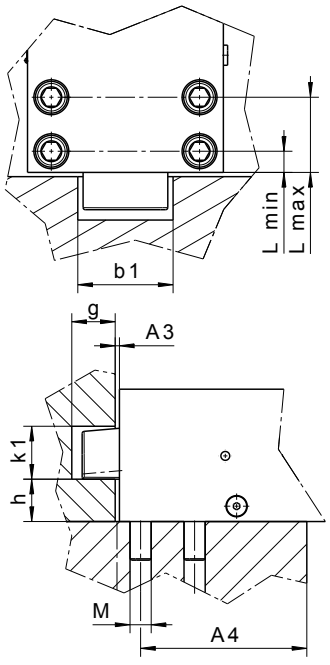
QMC 100.200



QMC 100.300



Installation dimensions

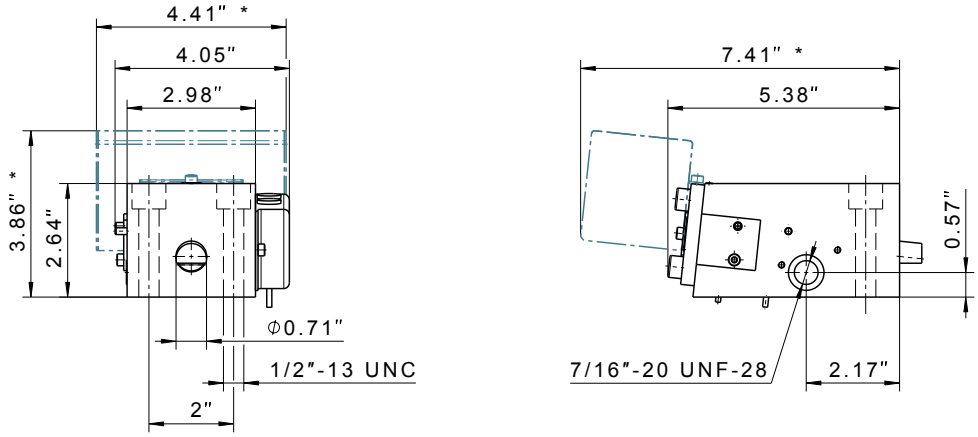


	Euromap					
	QMC 100					
	100.025	100.050	100.080	100.120	100.200	100.300
M	2 x M12	2 x M16	2 x M16 2 x M20	2 x M20 2 x M24	4 x M20 2 x M24	4 x M30
Tightening torque	84 Nm	200 Nm	200 Nm 300 Nm	470 Nm 550 Nm	600 Nm 850 Nm	1400 Nm
L min	10 mm	12 mm	12 mm 15 mm	15 mm 18 mm	15 mm 18 mm	26 mm
L max	37 mm	45 mm	45 mm 43 mm	77 mm 74 mm	71 mm 51 mm	131 mm
b1 min.	25 mm	50 mm	50 mm	70 mm	90 mm	110 mm
g min.	20 mm	25 mm	25 mm	38 mm	45 mm	50 mm
h ± 0.1	20 mm	20 mm	20 mm	32 mm	40 mm	50 mm
k1 min.	13 mm	28 mm	28 mm	38 mm	50 mm	65 mm
A3	2 mm	2 mm	2 mm	4 mm	4 mm	5 mm
A4 min.	50 mm	75 mm	75 mm	125 mm	157 mm	210 mm

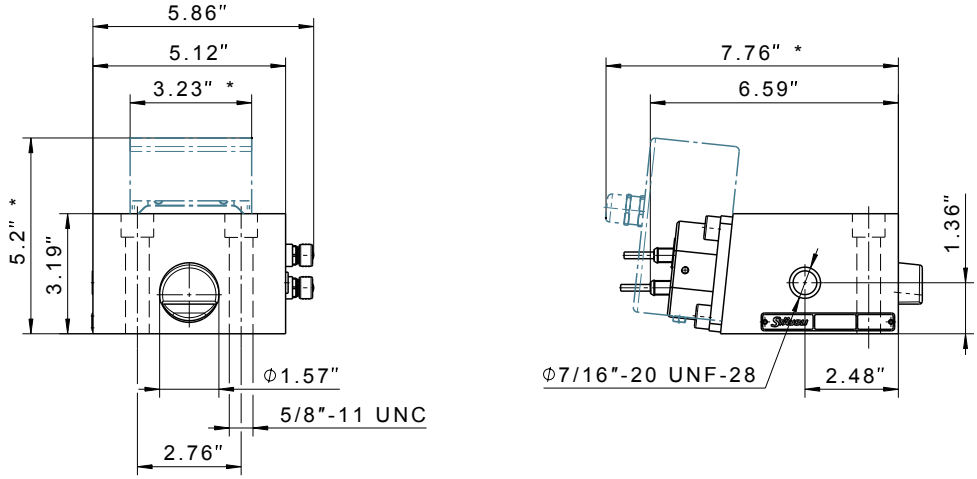
TECHNICAL DATA

SPI

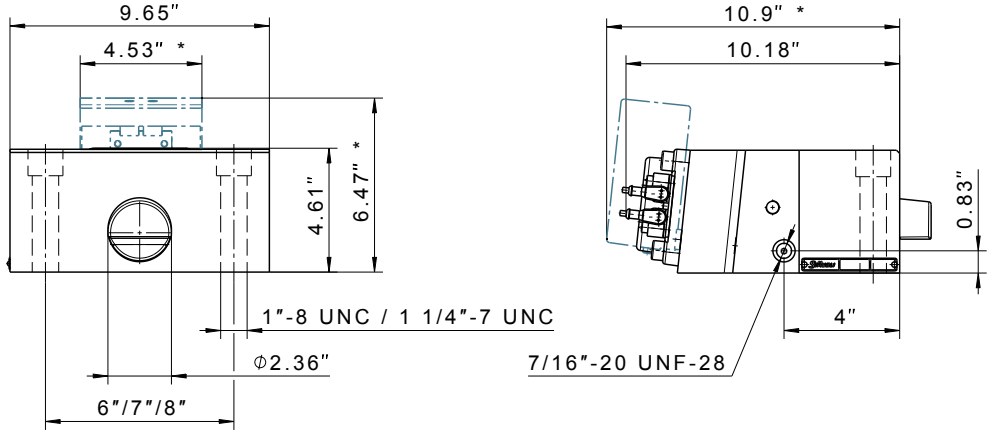
QMC 100.025



QMC 100.050 - QMC 100.080

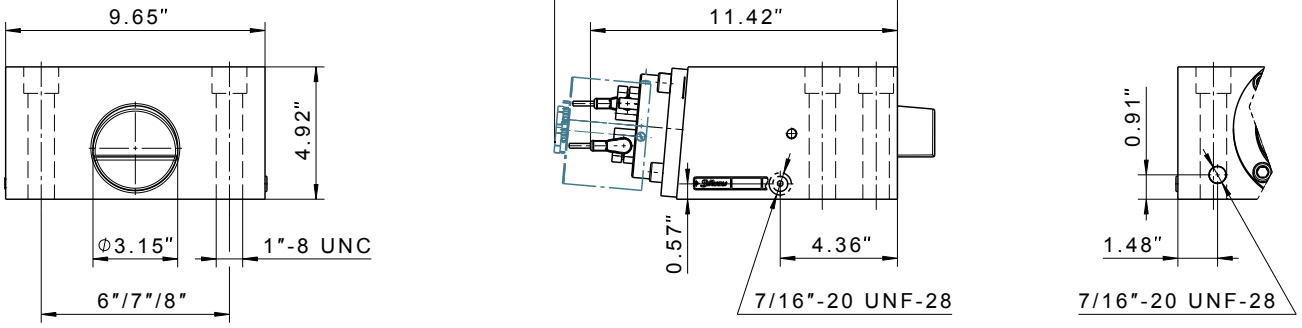


QMC 100.120

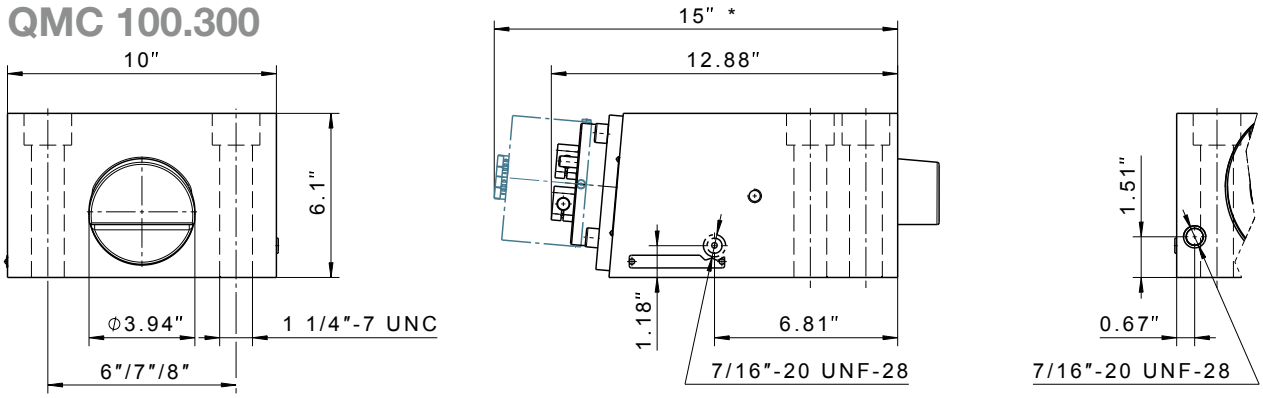


* Varying dimensions of the HT variant are shown as dash lines.

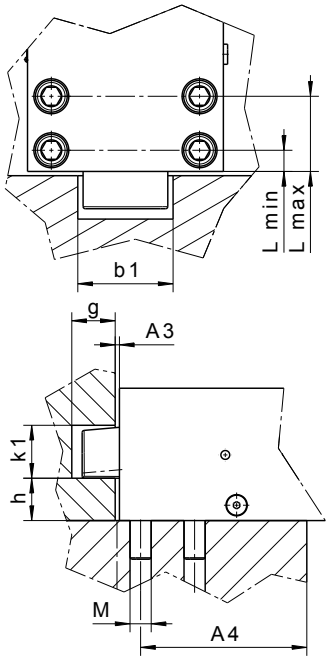
QMC 100.200



QMC 100.300



Installation dimensions



	SPI					
	QMC 100					
	100.025	100.050	100.080	100.120	100.200	100.300
M	1/2"-13	5/8"-11	5/8"-11 3/4"-10	1"-8 1 1/4"-7	1"-8	1 1/4"-7
Tightening torque	1300 lbs	2530 lbs	2530 lbs 4400 lbs	10400 lbs 21000 lbs	10400 lbs	21000 lbs
L min	0.39"	0.59"	0.59" 0.59"	0.84" 0.91"	0.79"	1.02"
L max	1.46"	1.69"	1.69" 1.69"	2.84" 2.76"	2.79"	2.4"
b1 min.	0.98"	1.97"	1.97"	2.76"	3.54"	4.33"
g min.	0.79"	0.98"	0.98"	1.50"	1.77"	1.97"
h ±0,004"	0.79"	0.79"	0.79"	1.26"	1.57"	1.97"
k1 min.	0.51"	1.1"	1.1"	1.5"	1.97"	2.56"
A3	0.08"	0.08"	0.08"	0.16"	0.16"	0.2"
A4 min.	1.96"	2.95"	2.95"	4.92"	6.18"	8.27"

RL.2000305A

■ Stäubli Units ○ Representatives/Agents

Global presence of the Stäubli Group

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