



 **Automotion**<sup>®</sup>  
AN ESSENTRA COMPANY

# PRECISION SCREWS IN-HOUSE SELECTION

SEALING | CAPTIVE | VENTED | SHOULDER



**Wixroyd**<sup>®</sup>  
**GROUP**  
AN ESSENTRA COMPANY

## Discover our in-house manufacturing capabilities

Since moving to our Chichester site in 2019, we have brought the manufacture of our range of precision fasteners in-house. Our CNC lathes are working day and night to produce our wide selection of shoulder screws, captive screws, and more in many different sizes and materials!

To ensure we are running as efficiently as possible, we have written custom software that works with our warehouse and ordering system to reduce the average lead time significantly. Our system means that we can offer bespoke variations on our existing products with no hassle, and at lower minimum quantities.



## Our CNC machined parts



### Sealing Screws

We are the only manufacturers in Europe for Integral O-Ring Sealing Screws.



### Captive Screws

Our popular range of captive screws and mounting fittings are ideal for panel applications.



### Vented Screws

The highest quality vented fasteners, made in Chichester for your vacuum system.



### Shoulder Screws

A massive lineup of shoulder screws in different materials and head styles.



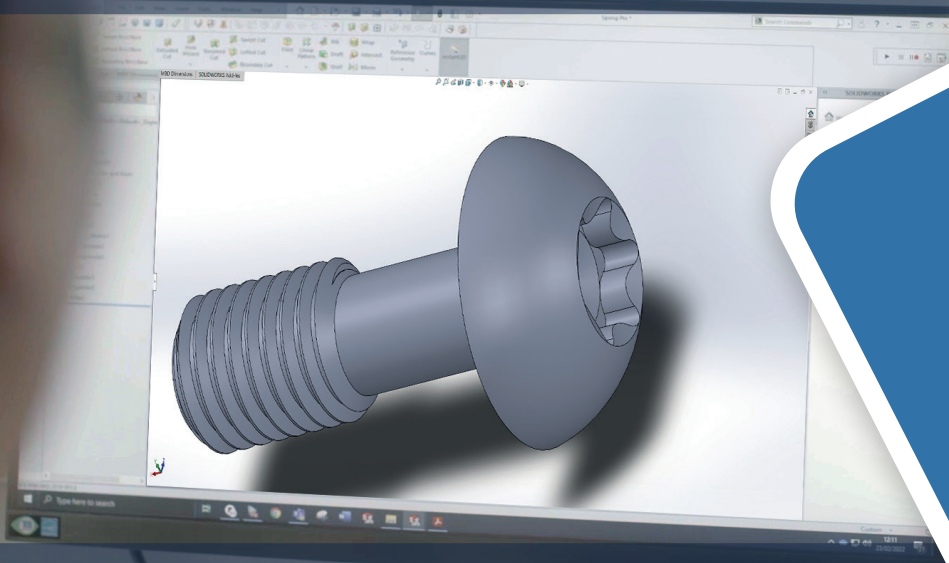
# Bespoke parts made in-house to meet customer requirements

Our range of precision fasteners; sealing, captive, shoulder and vented screws benefit from being manufactured in-house in our Chichester site.

We can custom make special executions of our standard fasteners; varying thread length, thread

size and material with an extremely efficient production time.

Get in touch with our technical team to discuss your ideas and see how we can help you with your project.



## Why order with us?



### HIGH STOCK LEVELS

With a high commitment to stock holding, we can offer next day delivery on most products. We deliver what you need, whenever you need it.



### STREAMLINE ORDERING PROCESS

Whether you're an account holder or choose to shop as a guest, our on-line ordering system is reliable and easy to use.



### MADE IN BRITAIN

Established in 1951, the Wixroyd Group supply innovative engineering products with free online CAD models and in-house technical expertise.



### HIGH QUALITY PRODUCTION

Trusted by some of the best known design & manufacturing companies, we pride ourselves on producing the highest quality components at the best value.



### TECHNICAL SALES SUPPORT

Available via telephone, email or our live web chat service, we work to find a solution for your application.



### BESPOKE CAPABILITIES

Our in-house manufacturing can make your idea a reality. Call our technical team to discuss.

# AN INTRODUCTION TO SHOULDER SCREWS

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## WHAT IS A SHOULDER SCREW?

Shoulder screws are also known as **shoulder bolts** and **stripper bolts**. Their sizes are normally described by the **shoulder diameter x shoulder length**. Once installed, the shoulder section, which is slightly larger in diameter to the threaded section, **can act as a shaft for rotating bearings to create simple cam followers, pivot points, or for pulley's and gears.**

Manufactured in house, not only do we have large volumes of shoulder screws in stock in a wide variety of styles, materials and sizes, **we are also able to manufacture specials to your bespoke requirements with very quick turnaround times.**



# SHOULDER SCREWS

Shoulder screws, also known as shoulder bolts or sometimes referred to as stripper bolts, distinguish themselves by featuring a head, a threaded portion, and an additional unthreaded "shoulder" in between. This shoulder, with a larger diameter than the thread and high precision tolerance, serves a dual purpose as both a fastener and a precise guide for moving parts. Available in various materials, including stainless steel and titanium, shoulder screws offer versatility and reliability in applications requiring precise alignment and support for moving components.






**Cap Head - P0130**

Available in the following materials: 303 stainless steel, 316 stainless steel, blackened 303 stainless steel, blackened 316 stainless steel, grade 2 titanium or grade 5 titanium.






**Slot Head - P0133**

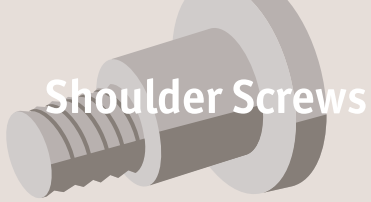
Available in 316 stainless steel.





**Countersunk - P0128**

Available in the following materials: 303 stainless steel, 316 stainless steel, blackened 303 stainless steel, blackened 316 stainless steel.



# Shoulder Screws

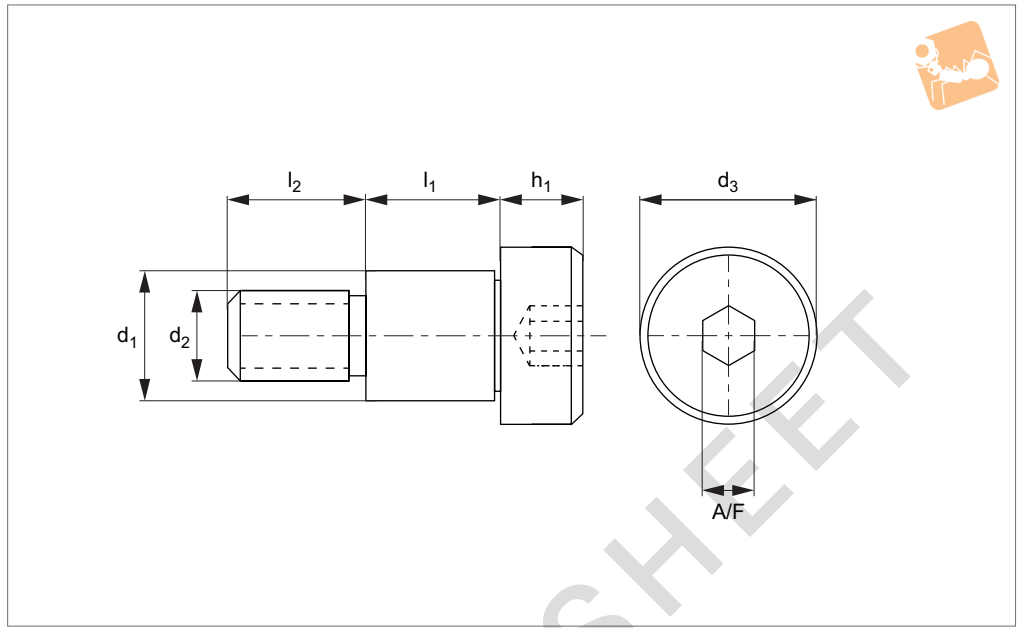
# Shoulder Screws - Cap Head hex drive



SHOULDER SCREWS



**P0130**



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

**Material**

Stainless steel (AISI 303, 1.4305), black oxide coating. Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel.

**Suffix B2,B4,A2,A4,T5,T2 onto end of your part number for required material e.g. P0130.030-002-A2 = 303 stainless.**

**Technical Notes**

303 series stainless steel provides good

resistance to corrosion. It is mildly magnetic.

For torx drive versions please see P0145.

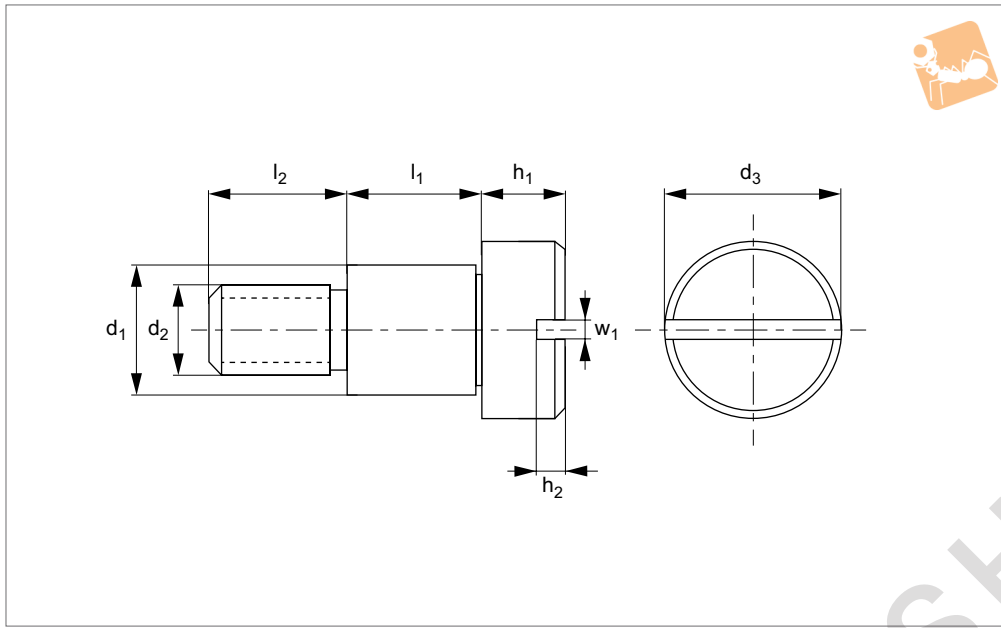
Special lengths and diameters produced to drawings.

Order No.	d <sub>1</sub> +0 -0.025	l <sub>1</sub> +0.05 -0.0	d <sub>2</sub>	d <sub>3</sub>	l <sub>2</sub>	h <sub>1</sub>	A/F
P0130.030-002	3	2	M 2	5	4	2	1.5
P0130.030-003	3	3	M 2	5	4	2	1.5
P0130.030-004	3	4	M 2	5	4	2	1.5
P0130.030-005	3	5	M 2	5	4	2	1.5
P0130.030-006	3	6	M 2	5	4	2	1.5
P0130.030-007	3	7	M 2	5	4	2	1.5
P0130.030-008	3	8	M 2	5	4	2	1.5
P0130.030-010	3	10	M 2	5	4	2	1.5
P0130.030-012	3	12	M 2	5	4	2	1.5
P0130.030-014	3	14	M 2	5	4	2	1.5
P0130.030-016	3	16	M 2	5	4	2	1.5
P0130.030-018	3	18	M 2	5	4	2	1.5
P0130.030-020	3	20	M 2	5	4	2	1.5
P0130.030-025	3	25	M 2	5	4	2	1.5
P0130.040-002	4	2	M 3	6	4	3	2
P0130.040-003	4	3	M 3	6	4	3	2
P0130.040-004	4	4	M 3	6	4	3	2
P0130.040-005	4	5	M 3	6	4	3	2
P0130.040-006	4	6	M 3	6	4	3	2
P0130.040-007	4	7	M 3	6	4	3	2
P0130.040-008	4	8	M 3	6	4	3	2
P0130.040-010	4	10	M 3	6	4	3	2
P0130.040-012	4	12	M 3	6	4	3	2
P0130.040-014	4	14	M 3	6	4	3	2
P0130.040-016	4	16	M 3	6	4	3	2
P0130.040-018	4	18	M 3	6	4	3	2
P0130.040-020	4	20	M 3	6	4	3	2
P0130.040-025	4	25	M 3	6	4	3	2
P0130.040-030	4	30	M 3	6	4	3	2
P0130.040-035	4	35	M 3	6	4	3	2
P0130.040-040	4	40	M 3	6	4	3	2
P0130.040-045	4	45	M 3	6	4	3	2
P0130.040-050	4	50	M 3	6	4	3	2



# Shoulder Screws - Slot Head slot drive

## Shoulder Screws



**P0133**

SHOULDER SCREWS

### ADDITIONAL SIZES AVAILABLE

#### Material

Stainless steel (AISI 416, 1.4005). Tensile strength 650 N/mm<sup>2</sup>. Proof stress min. 450 N/mm<sup>2</sup>, martensitic stainless steel.

#### Technical Notes

Stainless steel 416 is a harder, stronger

grade of stainless steel than the 303 stainless alternatives.

They are magnetic and slightly less resistant to corrosion than the 303 alternative (see P0130 or P0132).

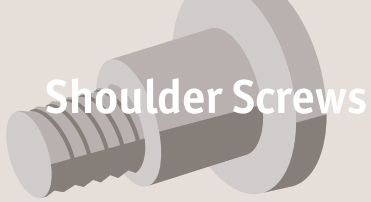
For corrosion resistance it is suited to dry

atmosphere, fresh water and mild alkalis and acids.

Special lengths and diameters produced to drawings.

Order No.	d <sub>1</sub> +0 -0.025	l <sub>1</sub> +0.05 -0.0	d <sub>2</sub>	d <sub>3</sub>	l <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	w <sub>1</sub>
P0133.040-004-A6	4	4	M 3	6	4	3	0.3	0.4
P0133.040-005-A6	4	5	M 3	6	4	3	0.3	0.4
P0133.040-006-A6	4	6	M 3	6	4	3	0.3	0.4
P0133.040-008-A6	4	8	M 3	6	4	3	0.3	0.4
P0133.040-010-A6	4	10	M 3	6	4	3	0.3	0.4
P0133.050-004-A6	5	4	M 4	8	5	4	0.9	0.8
P0133.050-005-A6	5	5	M 4	8	5	4	0.9	0.8
P0133.050-006-A6	5	6	M 4	8	5	4	0.9	0.8
P0133.050-008-A6	5	8	M 4	8	5	4	0.9	0.8
P0133.050-010-A6	5	10	M 4	8	5	4	0.9	0.8
P0133.050-012-A6	5	12	M 4	8	5	4	0.9	0.8
P0133.050-014-A6	5	14	M 4	8	5	4	0.9	0.8
P0133.050-016-A6	5	16	M 4	8	5	4	0.9	0.8
P0133.050-020-A6	5	20	M 4	8	5	4	0.9	0.8
P0133.050-030-A6	5	30	M 4	8	5	4	0.9	0.8
P0133.060-004-A6	6	4	M 5	10	6	5	1.2	1.0
P0133.060-005-A6	6	5	M 5	10	6	5	1.2	1.0
P0133.060-006-A6	6	6	M 5	10	6	5	1.2	1.0
P0133.060-008-A6	6	8	M 5	10	6	5	1.2	1.0
P0133.060-010-A6	6	10	M 5	10	6	5	1.2	1.0
P0133.060-014-A6	6	14	M 5	10	6	5	1.2	1.0
P0133.060-016-A6	6	16	M 5	10	6	5	1.2	1.0
P0133.060-020-A6	6	20	M 5	10	6	5	1.2	1.0
P0133.060-025-A6	6	25	M 5	10	6	5	1.2	1.0
P0133.060-030-A6	6	30	M 5	10	6	5	1.2	1.0
P0133.080-006-A6	8	6	M 6	12	11	6	1.3	1.2
P0133.080-008-A6	8	8	M 6	12	11	6	1.3	1.2
P0133.080-010-A6	8	10	M 6	12	11	6	1.3	1.2
P0133.080-012-A6	8	12	M 6	12	11	6	1.3	1.2
P0133.080-016-A6	8	16	M 6	12	11	6	1.3	1.2
P0133.100-008-M6	10	8	M 6	12	11	6	1.5	1.6





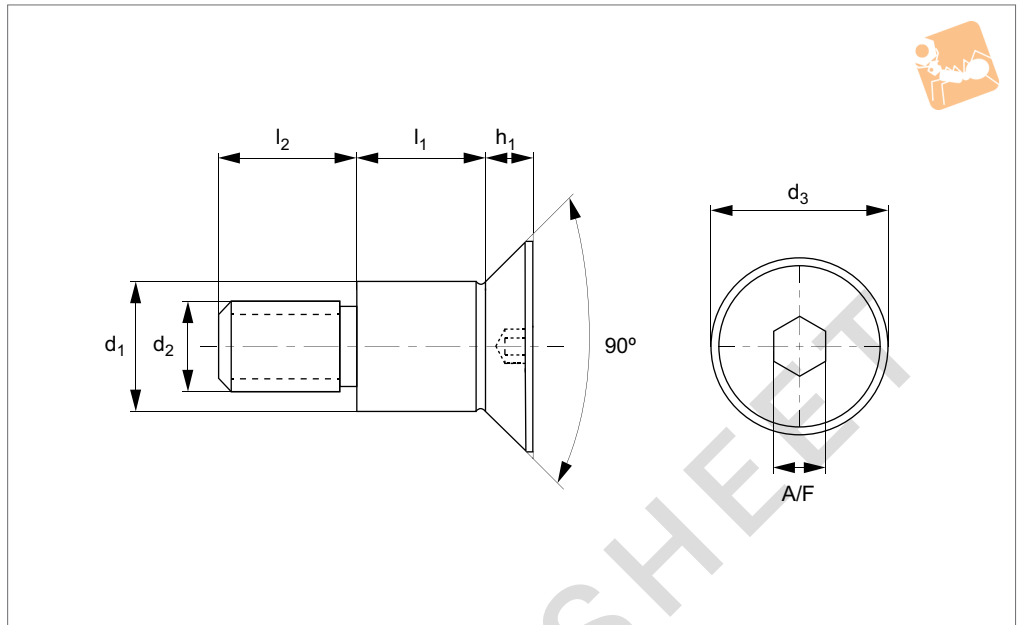
# Shoulder Screws - Countersunk hex drive



SHOULDER SCREWS



**P0128**



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

**Material**

Stainless steel (AISI 303, 1.4305).  
Tensile strength 550 N/mm<sup>2</sup>.  
Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel.

Suffix B2, B4, A2 or A4 onto end of part number for material type.

**Technical Notes**

303 stainless steel provides good resi-

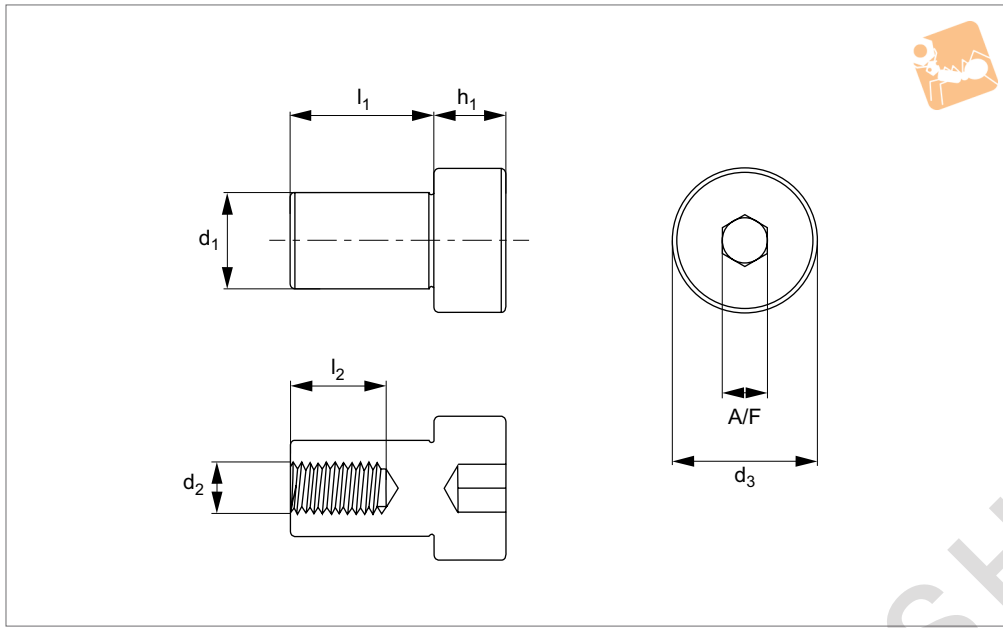
stance to corrosion. It is mildly magnetic. Special lengths and diameters produced to drawings.

Order No.	d <sub>1</sub> +0.000 -0.025	l <sub>1</sub> +0.05 -0.00	d <sub>2</sub> tol. G6	d <sub>3</sub>	l <sub>2</sub> +0.05 -0.00	h <sub>1</sub> +0.00 -0.05	A/F
P0128.040-010	4	10	M 3	8	4	2.0	2
P0128.040-012	4	12	M 3	8	4	2.0	2
P0128.040-014	4	14	M 3	8	4	2.0	2
P0128.040-016	4	16	M 3	8	4	2.0	2
P0128.040-018	4	18	M 3	8	4	2.0	2
P0128.040-020	4	20	M 3	8	4	2.0	2
P0128.040-025	4	25	M 3	8	4	2.0	2
P0128.040-030	4	30	M 3	8	4	2.0	2
P0128.050-010	5	10	M 4	10	5	2.5	2.5
P0128.050-012	5	12	M 4	10	5	2.5	2.5
P0128.050-016	5	16	M 4	10	5	2.5	2.5
P0128.050-020	5	20	M 4	10	5	2.5	2.5
P0128.050-025	5	25	M 4	10	5	2.5	2.5
P0128.050-030	5	30	M 4	10	5	2.5	2.5
P0128.050-035	5	35	M 4	10	5	2.5	2.5
P0128.050-040	5	40	M 4	10	5	2.5	2.5
P0128.060-010	6	10	M 5	12	6	3.0	3
P0128.060-012	6	12	M 5	12	6	3.0	3
P0128.060-016	6	16	M 5	12	6	3.0	3
P0128.060-020	6	20	M 5	12	6	3.0	3
P0128.060-025	6	25	M 5	12	6	3.0	3
P0128.060-030	6	30	M 5	12	6	3.0	3
P0128.060-035	6	35	M 5	12	6	3.0	3
P0128.060-040	6	40	M 5	12	6	3.0	3
P0128.080-010	8	10	M 6	16	11	4.0	4
P0128.080-012	8	12	M 6	16	11	4.0	4
P0128.080-016	8	16	M 6	16	11	4.0	4
P0128.080-020	8	20	M 6	16	11	4.0	4
P0128.080-025	8	25	M 6	16	11	4.0	4
P0128.080-030	8	30	M 6	16	11	4.0	4
P0128.080-035	8	35	M 6	16	11	4.0	4
P0128.080-040	8	40	M 6	16	11	4.0	4
P0128.100-012	10	12	M 8	20	12	5.0	5
P0128.100-016	10	16	M 8	20	12	5.0	5



# Shoulder Nuts - Cap Head hex drive

# Shoulder Screws



P0127

SHOULDER SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

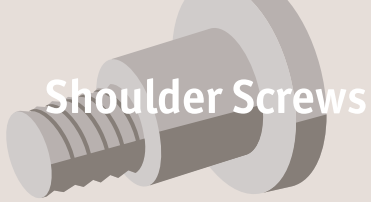
Stainless steel (AISI 303, 1.4305).  
Tensile strength 550 N/mm<sup>2</sup>.  
Proof stress min. 190 N/mm<sup>2</sup>, austenitic

stainless steel. Suffix B2, B4, A2 or A4  
onto end of your part number for  
material type. E.g. P0127.040-006-A2 =  
303 stainless.

### Technical Notes

303 stainless steel provides good resistance to corrosion, it is mildly magnetic.

Order No.	d <sub>1</sub> +0.000 -0.025	l <sub>1</sub> +0.05 -0.00	d <sub>2</sub>	d <sub>3</sub>	l <sub>2</sub>	h <sub>1</sub>	A/F
P0127.040-006	4	6	M 2	6	4	3	2
P0127.040-008	4	8	M 2	6	4	3	2
P0127.040-010	4	10	M 2	6	4	3	2
P0127.040-012	4	12	M 2	6	4	3	2
P0127.040-014	4	14	M 2	6	4	3	2
P0127.040-016	4	16	M 2	6	4	3	2
P0127.040-018	4	18	M 2	6	4	3	2
P0127.040-020	4	20	M 2	6	4	3	2
P0127.050-008	5	8	M 2,5	8	5	4	2,5
P0127.050-010	5	10	M 2,5	8	5	4	2,5
P0127.050-012	5	12	M 2,5	8	5	4	2,5
P0127.050-016	5	16	M 2,5	8	5	4	2,5
P0127.050-020	5	20	M 2,5	8	5	4	2,5
P0127.050-025	5	25	M 2,5	8	5	4	2,5
P0127.060-008	6	8	M 3	10	6	5	3
P0127.060-010	6	10	M 3	10	6	5	3
P0127.060-012	6	12	M 3	10	6	5	3
P0127.060-016	6	16	M 3	10	6	5	3
P0127.060-020	6	20	M 3	10	6	5	3
P0127.060-025	6	25	M 3	10	6	5	3
P0127.060-030	6	30	M 3	10	6	5	3
P0127.060-040	6	40	M 3	10	6	5	3
P0127.060-050	6	50	M 3	10	6	5	3
P0127.080-016	8	16	M 3,5	12	11	6	4
P0127.080-020	8	20	M 3,5	12	11	6	4
P0127.080-025	8	25	M 3,5	12	11	6	4
P0127.080-030	8	30	M 3,5	12	11	6	4
P0127.080-040	8	40	M 3,5	12	11	6	4
P0127.080-050	8	50	M 3,5	12	11	6	4
P0127.100-016	10	16	M 4	14	12	7	5
P0127.100-020	10	20	M 4	14	12	7	5
P0127.100-025	10	25	M 4	14	12	7	5
P0127.100-030	10	30	M 4	14	12	7	5
P0127.100-040	10	40	M 4	14	12	7	5



# Shoulder Screws

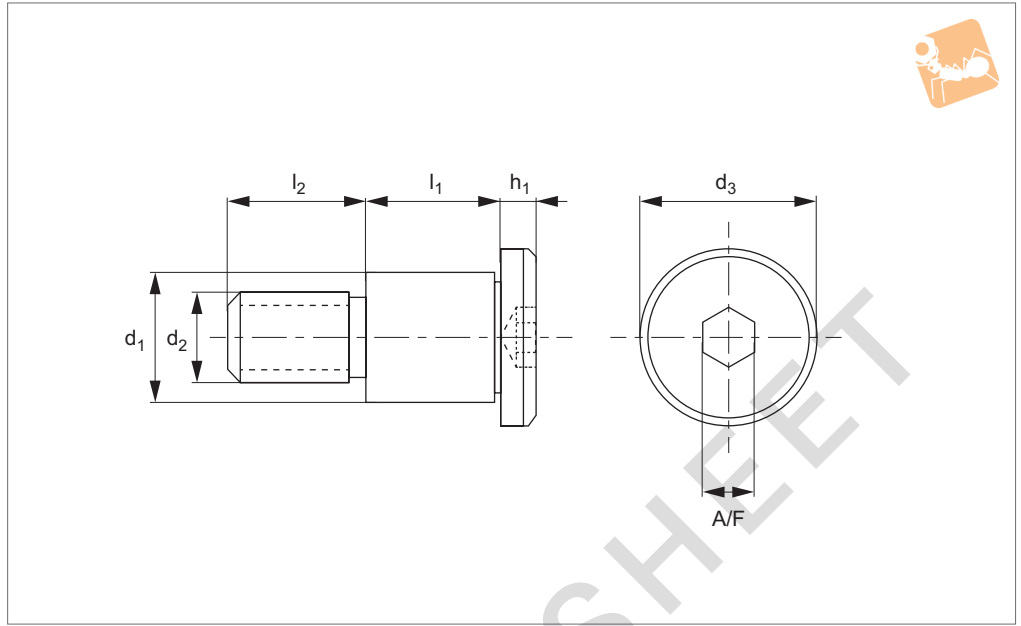
## Ultra Low Head - Shoulder Screw hex drive



SHOULDER SCREWS



**P0134**



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

**Material**

Stainless steel (AISI 316, 1.440). Tensile strength 480 N/mm<sup>2</sup>. Proof stress min. 200 N/mm<sup>2</sup>, austenitic stainless steel.

**Suffix A2, A4, B2 or B4 onto end of part number for material type. E.g.**

**P0134.040-004-A2 = 303 stainless.**

**Technical Notes**

These very low profile socket shoulder screws have a head height approximately 1/3 that of normal shoulder screws (P0130).

316 Series stainless have excellent corrosion resistance. Stainless steel suitable for marine and other applications.

Order No.	d <sub>1</sub> +0 -0.025	l <sub>1</sub> +0.05 -0.0	d <sub>2</sub>	d <sub>3</sub>	l <sub>2</sub>	h <sub>1</sub>	A/F
P0134.040-004	4	4	M 3	6	4	1.3	2
P0134.040-005	4	5	M 3	6	4	1.3	2
P0134.040-006	4	6	M 3	6	4	1.3	2
P0134.040-008	4	8	M 3	6	4	1.3	2
P0134.040-010	4	10	M 3	6	4	1.3	2
P0134.040-012	4	12	M 3	6	4	1.3	2
P0134.040-016	4	16	M 3	6	4	1.3	2
P0134.040-020	4	20	M 3	6	4	1.3	2
P0134.050-004	5	4	M 4	9	5	1.3	2.5
P0134.050-005	5	5	M 4	9	5	1.3	2.5
P0134.050-006	5	6	M 4	9	5	1.3	2.5
P0134.050-008	5	8	M 4	9	5	1.3	2.5
P0134.050-010	5	10	M 4	9	5	1.3	2.5
P0134.050-012	5	12	M 4	9	5	1.3	2.5
P0134.050-016	5	16	M 4	9	5	1.3	2.5
P0134.050-020	5	20	M 4	9	5	1.3	2.5
P0134.050-025	5	25	M 4	9	5	1.3	2.5
P0134.050-030	5	30	M 4	9	5	1.3	2.5
P0134.050-040	5	40	M 4	9	5	1.3	2.5
P0134.060-004	6	4	M 5	10	6	1.7	3
P0134.060-005	6	5	M 5	10	6	1.7	3
P0134.060-006	6	6	M 5	10	6	1.7	3
P0134.060-008	6	8	M 5	10	6	1.7	3
P0134.060-010	6	10	M 5	10	6	1.7	3
P0134.060-012	6	12	M 5	10	6	1.7	3
P0134.060-016	6	16	M 5	10	6	1.7	3
P0134.060-020	6	20	M 5	10	6	1.7	3
P0134.060-025	6	25	M 5	10	6	1.7	3
P0134.060-030	6	30	M 5	10	6	1.7	3
P0134.060-040	6	40	M 5	10	6	1.7	3
P0134.080-006	8	6	M 6	13	11	2.0	4

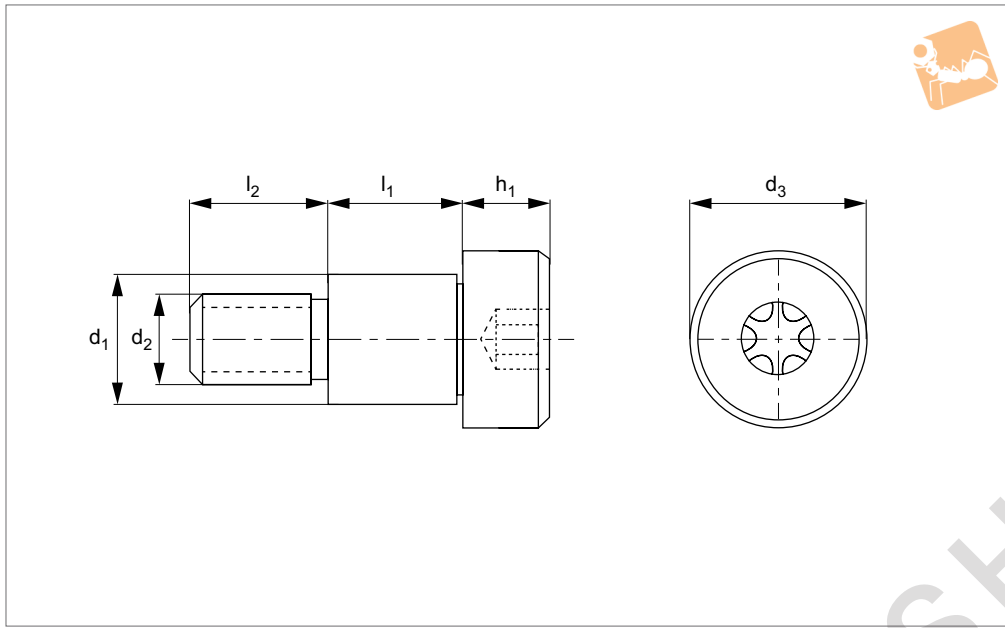




# Shoulder Screws - Cap Head

TX drive

## Shoulder Screws



P0145

SHOULDER SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

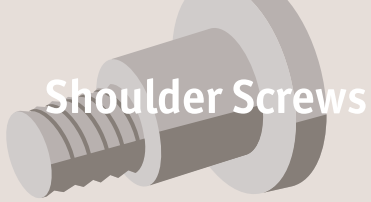
Stainless steel (AISI 303, 1.4305).  
Tensile strength 550 N/mm<sup>2</sup>.  
Proof stress min. 190 N/mm<sup>2</sup>, austenitic

stainless steel. Suffix A2, A4, B2 or B4 onto end of part number for material type. E.g. P0145.040-002-A2 = 303 stainless.

### Technical Notes

303 series stainless steel provides good resistance to corrosion. It is mildly magnetic.

Order No.	d <sub>1</sub> +0.0 -0.025	l <sub>1</sub> +0.05 -0.0	d <sub>2</sub>	d <sub>3</sub>	l <sub>2</sub>	h <sub>1</sub>	TX size
P0145.040-002	4	2	M 3	6	4	3	TX-10
P0145.040-003	4	3	M 3	6	4	3	TX-10
P0145.040-004	4	4	M 3	6	4	3	TX-10
P0145.040-005	4	5	M 3	6	4	3	TX-10
P0145.040-006	4	6	M 3	6	4	3	TX-10
P0145.040-007	4	7	M 3	6	4	3	TX-10
P0145.040-008	4	8	M 3	6	4	3	TX-10
P0145.040-010	4	10	M 3	6	4	3	TX-10
P0145.040-012	4	12	M 3	6	4	3	TX-10
P0145.040-014	4	14	M 3	6	4	3	TX-10
P0145.040-016	4	16	M 3	6	4	3	TX-10
P0145.040-018	4	18	M 3	6	4	3	TX-10
P0145.040-020	4	20	M 3	6	4	3	TX-10
P0145.040-025	4	25	M 3	6	4	3	TX-10
P0145.040-030	4	30	M 3	6	4	3	TX-10
P0145.040-035	4	35	M 3	6	4	3	TX-10
P0145.040-040	4	40	M 3	6	4	3	TX-10
P0145.040-045	4	45	M 3	6	4	3	TX-10
P0145.040-050	4	50	M 3	6	4	3	TX-10
P0145.050-002	5	2	M 4	8	5	4	TX-20
P0145.050-003	5	3	M 4	8	5	4	TX-20
P0145.050-004	5	4	M 4	8	5	4	TX-20
P0145.050-005	5	5	M 4	8	5	4	TX-20
P0145.050-006	5	6	M 4	8	5	4	TX-20
P0145.050-007	5	7	M 4	8	5	4	TX-20
P0145.050-008	5	8	M 4	8	5	4	TX-20
P0145.050-010	5	10	M 4	8	5	4	TX-20
P0145.050-012	5	12	M 4	8	5	4	TX-20
P0145.050-014	5	14	M 4	8	5	4	TX-20
P0145.050-016	5	16	M 4	8	5	4	TX-20
P0145.050-018	5	18	M 4	8	5	4	TX-20
P0145.050-020	5	20	M 4	8	5	4	TX-20
P0145.050-025	5	25	M 4	8	5	4	TX-20
P0145.050-030	5	30	M 4	8	5	4	TX-20



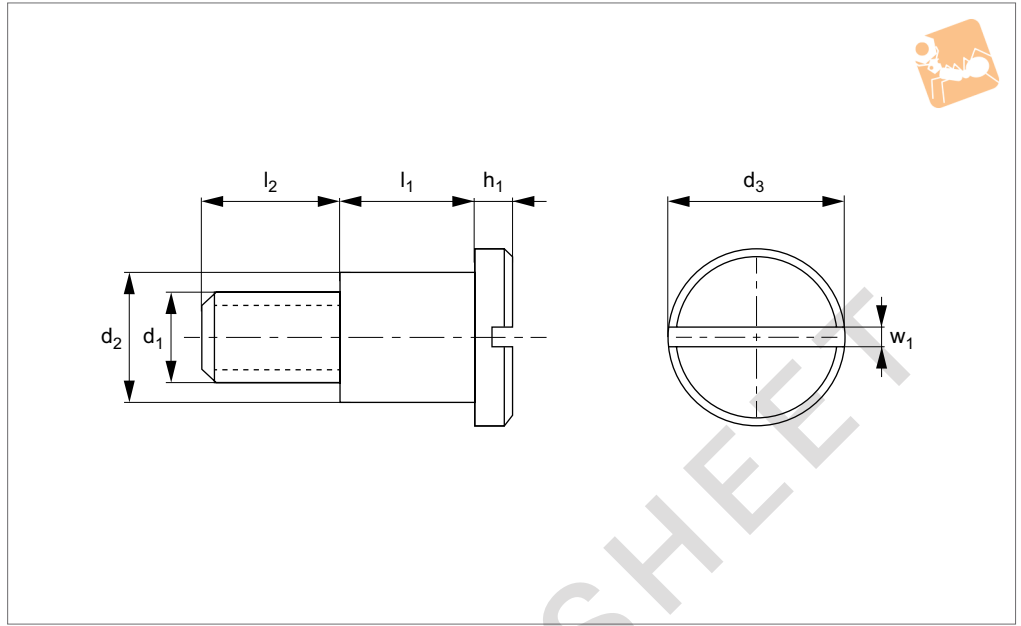
# Pan Head Shoulder Screws



SHOULDER SCREWS



**P0144**



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

**Material**

Stainless steel (A2, AISI 303). **Suffix A2 or ZP onto end of part number for required**

material type. E.g. P0144.030-003-A2 = 303 stainless.

**Technical Notes**

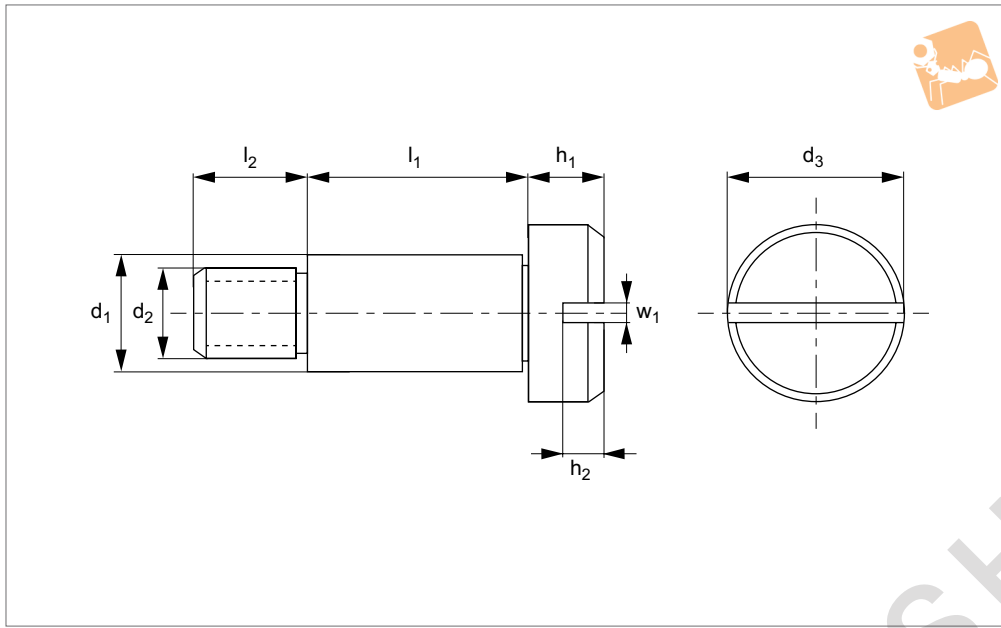
DIN 923. Mildly magnetic, available on request in A4 stainless steel.

Order No.	d <sub>1</sub>	l <sub>1</sub>	d <sub>2</sub> tol. h9	d <sub>3</sub>	l <sub>2</sub>	h <sub>1</sub>	w <sub>1</sub>
P0144.030-003	M3	3	4.0	7.0	4.5	1.8	0.8
P0144.030-004	M3	4	4.0	7.0	4.5	1.8	0.8
P0144.030-005	M3	5	4.0	7.0	4.5	1.8	0.8
P0144.030-006	M3	6	4.0	7.0	4.5	1.8	0.8
P0144.030-008	M3	8	4.0	7.0	4.5	1.8	0.8
P0144.030-010	M3	10	4.0	7.0	4.5	1.8	0.8
P0144.030-012	M3	12	4.0	7.0	4.5	1.8	0.8
P0144.040-003	M4	3	5.5	8.5	6.0	2.4	1.0
P0144.040-004	M4	4	5.5	8.5	6.0	2.4	1.0
P0144.040-005	M4	5	5.5	8.5	6.0	2.4	1.0
P0144.040-006	M4	6	5.5	8.5	6.0	2.4	1.0
P0144.040-008	M4	8	5.5	8.5	6.0	2.4	1.0
P0144.040-010	M4	10	5.5	8.5	6.0	2.4	1.0
P0144.040-012	M4	12	5.5	8.5	6.0	2.4	1.0
P0144.040-016	M4	16	5.5	8.5	6.0	2.4	1.0
P0144.040-020	M4	20	5.5	8.5	6.0	2.4	1.0
P0144.050-003	M5	3	7.0	11.0	7.0	2.7	1.2
P0144.050-004	M5	4	7.0	11.0	7.0	2.7	1.2
P0144.050-005	M5	5	7.0	11.0	7.0	2.7	1.2
P0144.050-006	M5	6	7.0	11.0	7.0	2.7	1.2
P0144.050-008	M5	8	7.0	11.0	7.0	2.7	1.2
P0144.050-010	M5	10	7.0	11.0	7.0	2.7	1.2
P0144.050-012	M5	12	7.0	11.0	7.0	2.7	1.2
P0144.050-016	M5	16	7.0	11.0	7.0	2.7	1.2
P0144.050-020	M5	20	7.0	11.0	7.0	2.7	1.2
P0144.060-003	M6	3	8.0	13.0	9.0	3.1	1.6
P0144.060-004	M6	4	8.0	13.0	9.0	3.1	1.6
P0144.060-005	M6	5	8.0	13.0	9.0	3.1	1.6
P0144.060-006	M6	6	8.0	13.0	9.0	3.1	1.6
P0144.060-008	M6	8	8.0	13.0	9.0	3.1	1.6
P0144.060-010	M6	10	8.0	13.0	9.0	3.1	1.6
P0144.060-012	M6	12	8.0	13.0	9.0	3.1	1.6
P0144.060-016	M6	16	8.0	13.0	9.0	3.1	1.6
P0144.060-020	M6	20	8.0	13.0	9.0	3.1	1.6



# Shoulder Screw - Cap Head slot drive

## Shoulder Screws



**P0132**

SHOULDER SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303, 1.4305) black oxide coating. Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel.

**Suffix A2 or B2 onto end of part number for material type. E.g. P0132.020-001-A2 = 303 stainless.**

### Technical Notes

303 series stainless steel provides good resistance to corrosion. It is mildly magnetic.

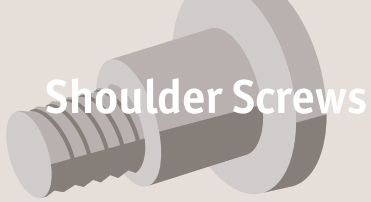
These shoulder screws are less expensive than the 416 steel grade (see part no. P0133), which are harder but less resistant to

corrosion.

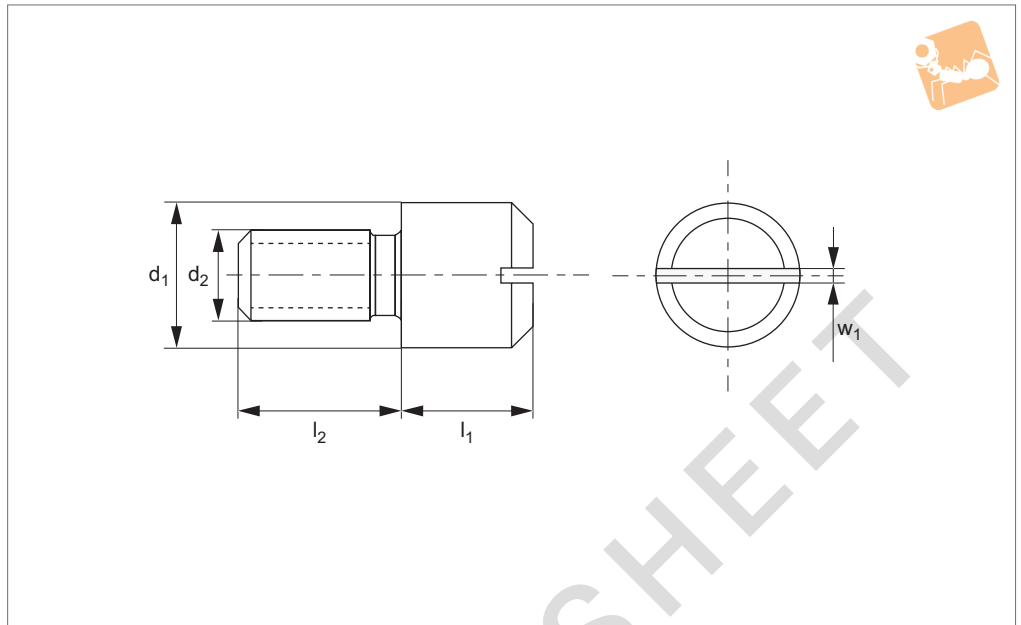
For Ø16 (and above) stainless steel shoulder screws see part no. P0137. Special lengths and diameters produced to drawings.

Order No.	d <sub>1</sub> +0 -0.025	l <sub>1</sub> +0.05 -0.0	d <sub>2</sub>	d <sub>3</sub>	l <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	w <sub>1</sub>
P0132.020-001	2	1	M 1,6	3	2.5	1	0.3	0.4
P0132.020-002	2	2	M 1,6	3	2.5	1	0.3	0.4
P0132.020-003	2	3	M 1,6	3	2.5	1	0.3	0.4
P0132.020-004	2	4	M 1,6	3	2.5	1	0.3	0.4
P0132.020-005	2	5	M 1,6	3	2.5	1	0.3	0.4
P0132.020-006	2	6	M 1,6	3	2.5	1	0.3	0.4
P0132.020-008	2	8	M 1,6	3	2.5	1	0.3	0.4
P0132.020-010	2	10	M 1,6	3	2.5	1	0.3	0.4
P0132.020-012	2	12	M 1,6	3	2.5	1	0.3	0.4
P0132.040-004	4	4	M 3	6	4.0	3	0.9	0.8
P0132.040-005	4	5	M 3	6	4.0	3	0.9	0.8
P0132.040-006	4	6	M 3	6	4.0	3	0.9	0.8
P0132.040-008	4	8	M 3	6	4.0	3	0.9	0.8
P0132.040-010	4	10	M 3	6	4.0	3	0.9	0.8
P0132.040-012	4	12	M 3	6	4.0	3	0.9	0.8
P0132.040-016	4	16	M 3	6	4.0	3	0.9	0.8
P0132.040-020	4	20	M 3	6	4.0	3	0.9	0.8
P0132.050-004	5	4	M 4	8	5.0	4	1.2	1.0
P0132.050-005	5	5	M 4	8	5.0	4	1.2	1.0
P0132.050-006	5	6	M 4	8	5.0	4	1.2	1.0
P0132.050-008	5	8	M 4	8	5.0	4	1.2	1.0
P0132.050-010	5	10	M 4	8	5.0	4	1.2	1.0
P0132.050-012	5	12	M 4	8	5.0	4	1.2	1.0
P0132.050-014	5	14	M 4	8	5.0	4	1.2	1.0
P0132.050-016	5	16	M 4	8	5.0	4	1.2	1.0
P0132.050-020	5	20	M 4	8	5.0	4	1.2	1.0
P0132.050-025	5	25	M 4	8	5.0	4	1.2	1.0
P0132.050-030	5	30	M 4	8	5.0	4	1.2	1.0
P0132.060-004	6	4	M 5	10	6.0	5	1.3	1.2
P0132.060-005	6	5	M 5	10	6.0	5	1.3	1.2





## P0126.A2



ADDITIONAL SIZES AVAILABLE

### Material

Austenitic stainless steel  
(AISI 303, 1.4305)

### Technical Notes

303 series stainless steel provides good resistance to corrosion. It is mildly magnetic.

Special lengths and diameters produced to drawings.

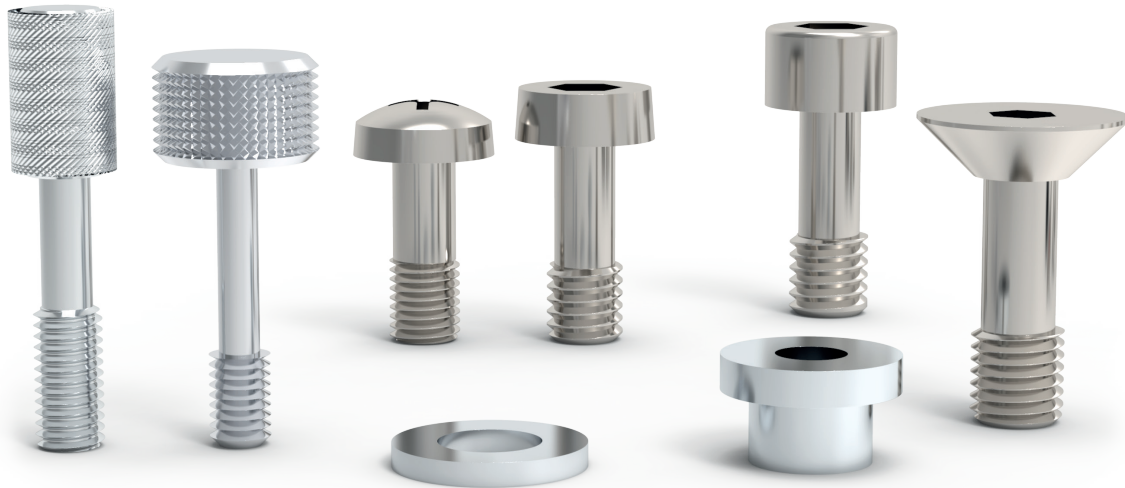
$l_1+l_2$  tolerance js15.

Order No.	$d_1$ h9	$l_1$	$d_2$	$l_2$ +0.3/-0.0	$w_1$
P0126.040-025-A2	4.0	2.5	M 3	4.5	0.5
P0126.040-030-A2	4.0	3.0	M 3	4.5	0.5
P0126.040-040-A2	4.0	4.0	M 3	4.5	0.5
P0126.040-050-A2	4.0	5.0	M 3	4.5	0.5
P0126.040-060-A2	4.0	6.0	M 3	4.5	0.5
P0126.055-030-A2	5.5	3.0	M 4	6.0	0.6
P0126.055-040-A2	5.5	4.0	M 4	6.0	0.6
P0126.055-050-A2	5.5	5.0	M 4	6.0	0.6
P0126.055-060-A2	5.5	6.0	M 4	6.0	0.6
P0126.055-080-A2	5.5	8.0	M 4	6.0	0.6
P0126.065-040-A2	6.5	4.0	M 5	7.0	0.8
P0126.065-050-A2	6.5	5.0	M 5	7.0	0.8
P0126.065-060-A2	6.5	6.0	M 5	7.0	0.8
P0126.065-080-A2	6.5	8.0	M 5	7.0	0.8
P0126.065-100-A2	6.5	10.0	M 5	7.0	0.8
P0126.080-040-A2	8.0	4.0	M 6	8.0	1.0
P0126.080-050-A2	8.0	5.0	M 6	8.0	1.0
P0126.080-060-A2	8.0	6.0	M 6	8.0	1.0
P0126.080-080-A2	8.0	8.0	M 6	8.0	1.0
P0126.080-100-A2	8.0	10.0	M 6	8.0	1.0

# AN OVERVIEW OF OUR STANDARD PARTS IN THIS RANGE

## CAPTIVE SCREWS

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### WHAT IS A CAPTIVE SCREW?

A captive screw is a fastener specially designed to remain in place within an assembly when the panel or cover is removed. Generally, the captive screw has a thinner diameter shank over the length of the screw, and a larger threaded portion at the end. Therefore, when removing a panel, the screws do not come away from the panel itself. For example, you may need to remove a cover

panel (such as a guard panel) from an assembly whilst performing maintenance. The screws are required to remain with the panel so that they don't get misplaced.

Consequently, these fasteners are important when used in safety equipment, where it is important to avoid loose components.

## CAPTIVE SCREWS

VIEW THE FULL RANGE



Captive screws, designed for permanent hold or “captivation,” offer enhanced safety by significantly reducing the likelihood of accidental removal once installed. The reduced diameter section of the screw helps keep the screw captivated in the panel once the panel has been removed, hence the name. This captivation is crucial for compliance with safety regulations, such as the EU Machine Safety Directive (2006/42/EC) and/or ISO 14583, where certain equipment, like safety covers or panels, require permanent fastenings.



 AN ESSENTRA COMPANY



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BRITAIN

### Cap Head - P0154

Available in the following materials: 303 stainless & 316 stainless, blackened 303 & 316 stainless, titanium, zinc-plated and blackened.

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BRITAIN

### Countersunk - P0153

Available in the following materials: 303 stainless & 316 stainless, blackened 303 & 316 stainless and titanium.

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BRITAIN

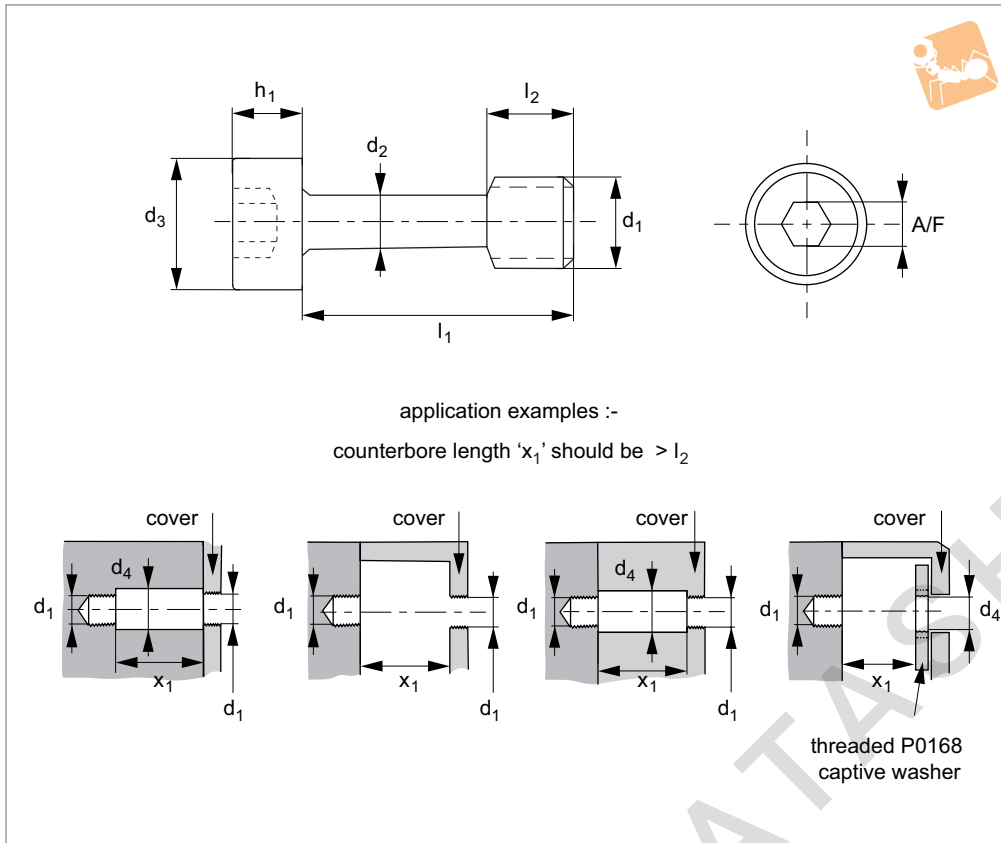
### Hex Bolts - P0158

Available in the following materials: 303 stainless & 316 stainless, blackened 303 & 316 stainless and titanium.



# Captive Screws - Cap Head hex drive

## Captive Screws



P0154

CAPTIVE SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 316, 1.440).  
Tensile strength 480 N/mm<sup>2</sup>. Proof stress min. 200 N/mm<sup>2</sup>, austenitic stainless steel.  
Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 303, 1.4305), brass, aluminium etc.

Suffix part number with A2, A4, B2, BL, B4, Ti or ZP for required material type.

E.g. P0154.025-005-B2 = 303 stainless, blackened.

### Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 4762. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers (P0168) should be considered when fitted in panels with

unthreaded holes.

### Tips

For TX drive style, see P0156.

### Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub> max.	d <sub>4</sub> min.	h <sub>1</sub> max.	l <sub>2</sub> ±0.25	A/F
P0154.025-005	M 2,5	5	1.8	4.5	2.8	2.5	3.0	2
P0154.025-008	M 2,5	8	1.8	4.5	2.8	2.5	3.0	2
P0154.025-010	M 2,5	10	1.8	4.5	2.8	2.5	3.0	2
P0154.025-012	M 2,5	12	1.8	4.5	2.8	2.5	3.0	2
P0154.030-008	M 3	8	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-010	M 3	10	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-012	M 3	12	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-016	M 3	16	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-020	M 3	20	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-025	M 3	25	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-030	M 3	30	2.0	5.5	3.5	3.0	4.5	2.5
P0154.040-010	M 4	10	2.8	7.0	4.5	4.0	6.0	3
P0154.040-012	M 4	12	2.8	7.0	4.5	4.0	6.0	3
P0154.040-016	M 4	16	2.8	7.0	4.5	4.0	6.0	3
P0154.040-020	M 4	20	2.8	7.0	4.5	4.0	6.0	3
P0154.040-025	M 4	25	2.8	7.0	4.5	4.0	6.0	3
P0154.040-030	M 4	30	2.8	7.0	4.5	4.0	6.0	3
P0154.040-035	M 4	35	2.8	7.0	4.5	4.0	6.0	3



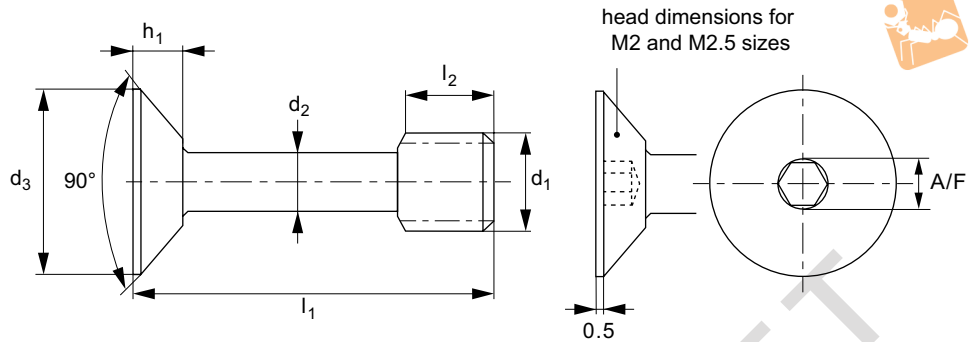


CAPTIVE SCREWS



**P0153**

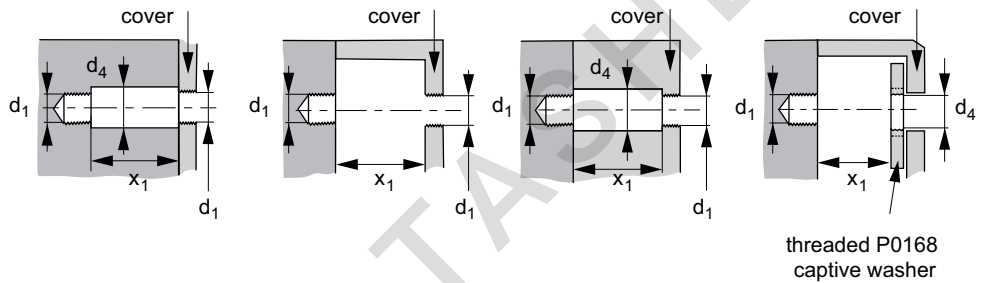
MADE IN BRITAIN



head dimensions for  
M2 and M2.5 sizes

application examples :-

counterbore length 'x<sub>1</sub>' should be > l<sub>2</sub>



threaded P0168  
captive washer

**ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE**

**Material**

Stainless steel (AISI 303, 1.4305), black oxide coating. Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel.

Also available on request in steel (anodised, black oxide or zinc plated), brass, aluminium etc. **Suffix part number with A2, A4, B2, B4 or Ti for required material type. E.g P0153.020-010-A2 =**

**303 stainless.**

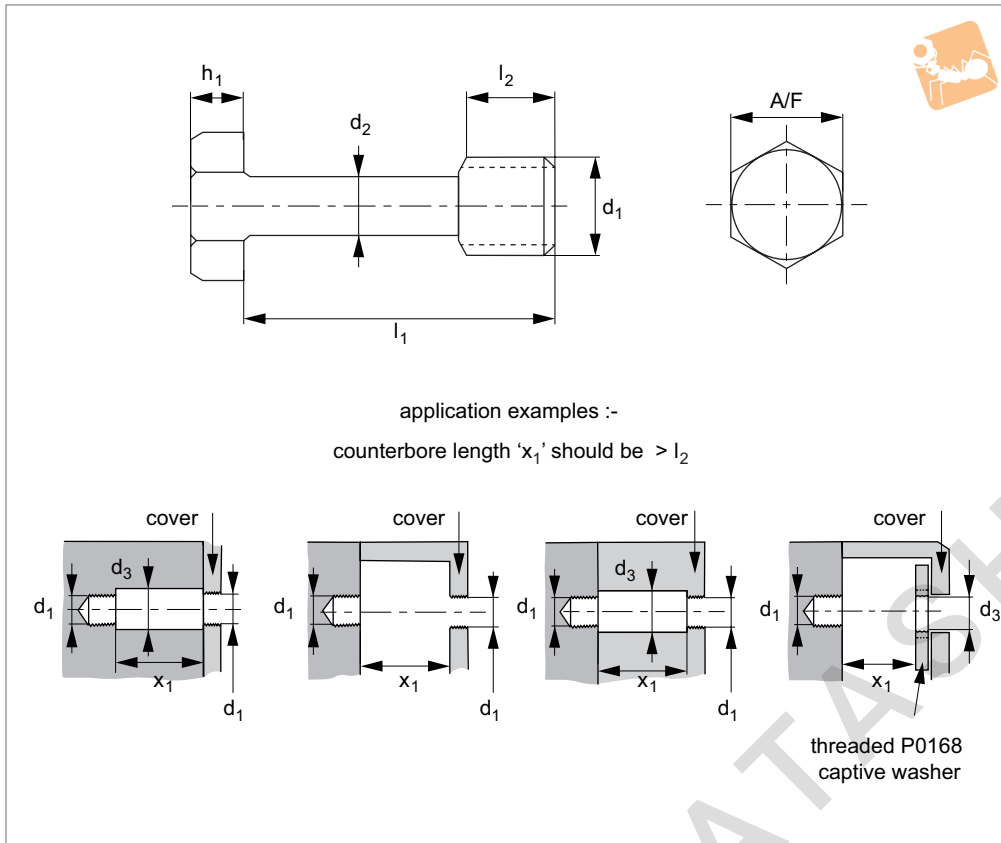
**Technical Notes**

Used to comply with the Machinery Directive 2006/42/EC. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

**Important Notes**

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>. To accommodate the slight undercut at the top of the shank, the hex socket is smaller than on a similar threaded machine screw.

Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	l <sub>2</sub> ±0.25	d <sub>3</sub> max.	d <sub>4</sub> min.	h <sub>1</sub> max.	A/F
P0153.020-010	M 2	10	1.2	3.5	3.8	2.5	1.20	1.0
P0153.020-012	M 2	12	1.2	3.5	3.8	2.5	1.20	1.0
P0153.020-016	M 2	16	1.2	3.5	3.8	2.5	1.20	1.0
P0153.020-020	M 2	20	1.2	3.5	3.8	2.5	1.20	1.0
P0153.025-010	M 2,5	10	1.7	3.7	4.7	2.8	1.80	1.3
P0153.025-012	M 2,5	12	1.7	3.7	4.7	2.8	1.80	1.3
P0153.025-016	M 2,5	16	1.7	3.7	4.7	2.8	1.80	1.3
P0153.025-020	M 2,5	20	1.7	3.7	4.7	2.8	1.80	1.3
P0153.030-008	M 3	10	2.0	4.5	5.6	3.5	1.65	1.5
P0153.030-010	M 3	10	2.0	4.5	5.6	3.5	1.65	1.5
P0153.030-012	M 3	12	2.0	4.5	5.6	3.5	1.65	1.5
P0153.030-016	M 3	16	2.0	4.5	5.6	3.5	1.65	1.5
P0153.030-020	M 3	20	2.0	4.5	5.6	3.5	1.65	1.5
P0153.030-025	M 3	25	2.0	4.5	5.6	3.5	1.65	1.5
P0153.030-030	M 3	30	2.0	4.5	5.6	3.5	1.65	1.5
P0153.030-035	M 3	35	2.0	4.5	5.6	3.5	1.65	1.5
P0153.030-040	M 3	40	2.0	4.5	5.6	3.5	1.65	1.5
P0153.040-010	M 4	10	2.8	6.0	7.5	4.5	2.20	2.0



**P0158**

CAPTIVE SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel.

**Suffix part number with A2, A4, Ti, B2 or B4 for required material E.g. P0158.030-010-B2 = 303 stainless, blackened.**

### Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

### Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub> min.	h <sub>1</sub> max.	l <sub>2</sub> ±0.25	A/F
P0158.030-010	M 3	10	2.0	3.5	2.2	4.5	6
P0158.030-016	M 3	16	2.0	3.5	2.2	4.5	6
P0158.030-020	M 3	20	2.0	3.5	2.2	4.5	6
P0158.030-025	M 3	25	2.0	3.5	2.2	4.5	6
P0158.030-030	M 3	30	2.0	3.5	2.2	4.5	6
P0158.030-040	M 3	40	2.0	3.5	2.2	4.5	6
P0158.040-012	M 4	12	2.8	4.5	2.9	6.0	7
P0158.040-016	M 4	16	2.8	4.5	2.9	6.0	7
P0158.040-020	M 4	20	2.8	4.5	2.9	6.0	7
P0158.040-025	M 4	25	2.8	4.5	2.9	6.0	7
P0158.040-030	M 4	30	2.8	4.5	2.9	8.0	7
P0158.040-035	M 4	35	2.8	4.5	2.9	8.0	7
P0158.040-040	M 4	40	2.8	4.5	2.9	8.0	7
P0158.040-050	M 4	50	2.8	4.5	2.9	8.0	7
P0158.040-060	M 4	60	2.8	4.5	2.9	8.0	7
P0158.050-012	M 5	12	3.7	5.5	3.6	7.5	8
P0158.050-016	M 5	16	3.7	5.5	3.6	7.5	8
P0158.050-020	M 5	20	3.7	5.5	3.6	7.5	8
P0158.050-025	M 5	25	3.7	5.5	3.6	7.5	8
P0158.050-030	M 5	30	3.7	5.5	3.6	10.0	8
P0158.050-035	M 5	35	3.7	5.5	3.6	10.0	8

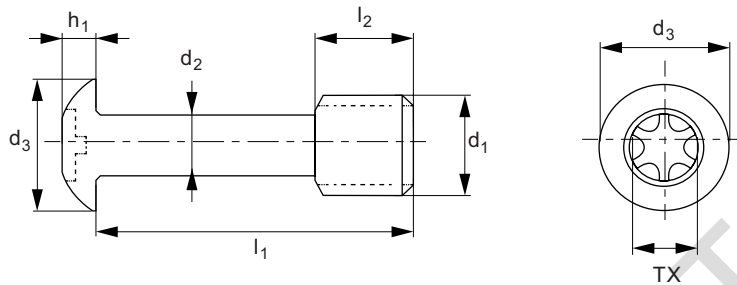


CAPTIVE SCREWS

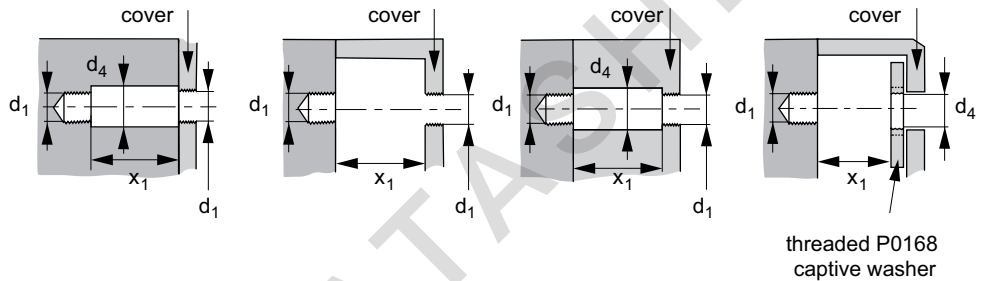


**P0149**

MADE IN BRITAIN



application examples :-  
counterbore length 'x<sub>1</sub>' should be > l<sub>2</sub>



**ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE**

**Material**

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel. Also available with blackened finish (P0149.B2), in marine grade stainless steel (AISI 316 series; P0149.A4), in titanium (P0149.Ti), or in other materials such as steel, brass, aluminium etc. on request.

Suffix part number with A2, A4, B4 or B2 material type e.g. P0149.025-008-A2 = 303 stainless.

**Technical Notes**

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 7380-1. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered

when fitted in panels with unthreaded holes.

**Important Notes**

This product was formerly known as P0151. TX. Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

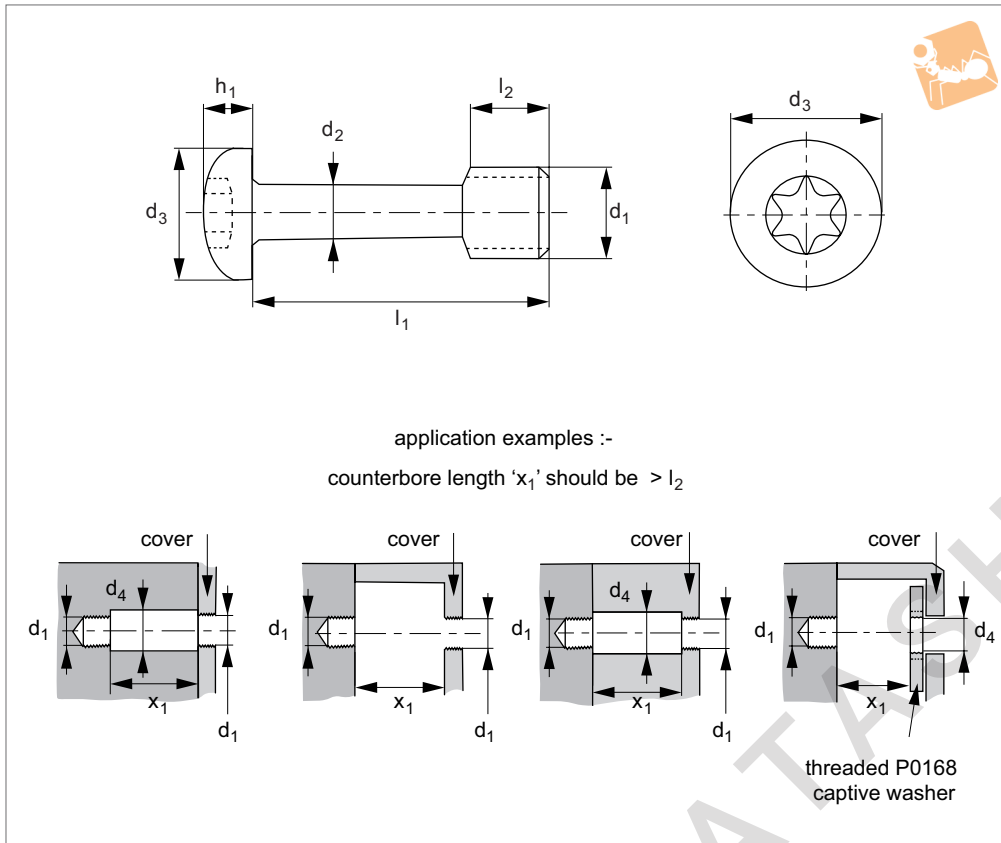
Order No.	d <sub>1</sub>	l <sub>1</sub> 0,25	d <sub>2</sub> 0,12	d <sub>3</sub> max.	d <sub>4</sub> min.	h <sub>1</sub> max.	l <sub>2</sub> -0,2	TX size
P0149.025-008	M 2,5	8	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.025-010	M 2,5	10	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.025-012	M 2,5	12	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.025-016	M 2,5	16	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.025-020	M 2,5	20	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.030-010	M 3	10	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-016	M 3	16	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-020	M 3	20	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-025	M 3	25	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-030	M 3	30	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-040	M 3	40	2.0	5.7	3.5	1.65	5.0	TX-10
P0149.040-012	M 4	12	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-016	M 4	16	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-020	M 4	20	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-025	M 4	25	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-030	M 4	30	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-040	M 4	40	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-050	M 4	50	2.8	7.6	4.5	3.10	6.0	TX-20



# Captive Screws - Pan Head

TX drive

## Captive Screws



**P0150**

CAPTIVE SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 316, 1.440). Tensile strength 480 N/mm<sup>2</sup>. Proof stress min. 200 N/mm<sup>2</sup>, austenitic stainless steel. Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 303, 1.4305), brass, aluminium etc.

Suffix part number with **A2, A4, B4 B2 or Ti** for required material type e.g. **P0150.025-008-A2 = 303 stainless.**

### Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 14583. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered

when fitted in panels with unthreaded holes.

\*M 8 sizes have a reduced TX size.

### Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub> max.	d <sub>4</sub> min.	h <sub>1</sub> max.	l <sub>2</sub> ±0.25	TX size
P0150.030-008	M 3	8	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-010	M 3	10	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-016	M 3	16	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-020	M 3	20	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-025	M 3	25	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-030	M 3	30	2.0	6	3.5	2.5	4.5	TX-10
P0150.040-008	M 4	8	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-010	M 4	10	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-012	M 4	12	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-016	M 4	16	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-020	M 4	20	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-025	M 4	25	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-030	M 4	30	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-040	M 4	40	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-050	M 4	50	2.8	8	4.5	3.2	6.0	TX-20
P0150.050-010	M 5	10	3.7	10	5.5	3.9	7.5	TX-25
P0150.050-012	M 5	12	3.7	10	5.5	3.9	7.5	TX-25
P0150.050-016	M 5	16	3.7	10	5.5	3.9	7.5	TX-25

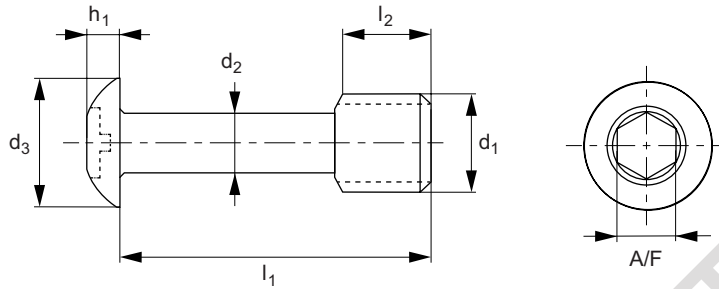


CAPTIVE SCREWS



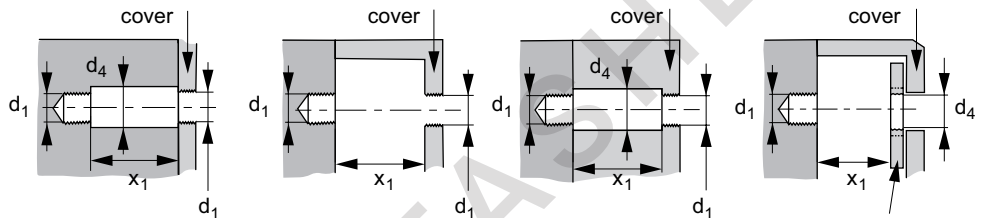
**P0151**

MADE IN BRITAIN



application examples :-

counterbore length 'x<sub>1</sub>' should be > l<sub>2</sub>



threaded P0168 captive washer

**ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE**

**Material**

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel.

Suffix with A2,A4,B2,B4,Ti for required material type. E.g. P0151.025-008-A2.

**Technical Notes**

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 7380-1. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded

holes.

**Important Notes**

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

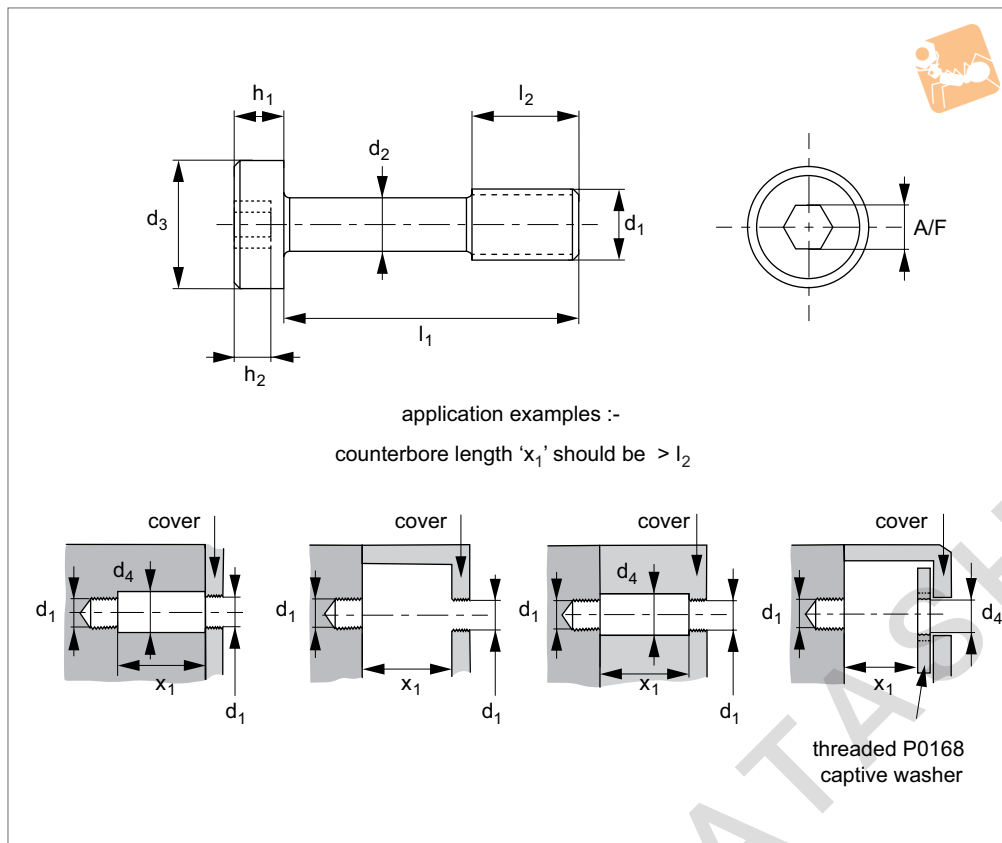
Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub> max.	d <sub>4</sub> min.	h <sub>1</sub> max.	l <sub>2</sub> ±0.25	A/F
P0151.025-008	M 2,5	8	1.7	4.5	2.8	1.50	3.7	1.5
P0151.025-010	M 2,5	10	1.7	4.5	2.8	1.50	3.7	1.5
P0151.025-012	M 2,5	12	1.7	4.5	2.8	1.50	3.7	1.5
P0151.025-016	M 2,5	16	1.7	4.5	2.8	1.50	3.7	1.5
P0151.025-020	M 2,5	20	1.7	4.5	2.8	1.50	3.7	1.5
P0151.030-008	M 3	8	2.0	5.7	3.5	1.53	4.5	2
P0151.030-010	M 3	10	2.0	5.7	3.5	1.53	4.5	2
P0151.030-016	M 3	16	2.0	5.7	3.5	1.53	4.5	2
P0151.030-020	M 3	20	2.0	5.7	3.5	1.53	4.5	2
P0151.030-025	M 3	25	2.0	5.7	3.5	1.53	4.5	2
P0151.030-030	M 3	30	2.0	5.7	3.5	1.53	4.5	2
P0151.030-040	M 3	40	2.0	5.7	3.5	1.53	4.5	2
P0151.040-010	M 4	10	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-012	M 4	12	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-016	M 4	16	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-020	M 4	20	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-025	M 4	25	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-030	M 4	30	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-035	M 4	35	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-040	M 4	40	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-050	M 4	50	2.8	7.6	4.5	2.10	6.0	2.5





# Captive Screws - Cheese Head hex drive

Captive Screws



P0152

CAPTIVE SCREWS

## ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 316, 1.4401). This grade of stainless steel is highly resistant to corrosion and is suitable for outdoor, medical and marine applications. Tensile strength 550 N/mm<sup>2</sup>. Also available on request in titanium, steel (anodised, black oxide coated or zinc plated), brass, aluminium etc.

Suffix with A2,A4,B2,B4 or Ti for required material type. E.g. P0152.020-010-A2 = 303 stainless.

### Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 1207. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our

captive washers should be considered when fitted in panels with unthreaded holes.

### Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub>	d <sub>4</sub> min.	h <sub>1</sub>	h <sub>2</sub>	l <sub>2</sub> ±0.25	A/F
P0152.020-010	M 2	10	1.2	3.8	2.5	1.3	0.85	3.0	1.3
P0152.020-012	M 2	12	1.2	3.8	2.5	1.3	0.85	3.0	1.3
P0152.020-016	M 2	16	1.2	3.8	2.5	1.3	0.85	3.0	1.3
P0152.020-020	M 2	20	1.2	3.8	2.5	1.3	0.85	3.0	1.3
P0152.025-008	M 2,5	8	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-010	M 2,5	10	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-016	M 2,5	16	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-020	M 2,5	20	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-025	M 2,5	25	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-030	M 2,5	30	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.030-010	M 3	10	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.030-011	M 3	11	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.030-013	M 3	13	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.030-016	M 3	16	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.030-018	M 3	18	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.030-020	M 3	20	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.030-025	M 3	25	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.030-030	M 3	30	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.030-040	M 3	40	2.0	5.5	3.5	2.0	1.30	4.5	2
P0152.035-010	M 3,5	10	2.3	6.0	3.8	2.4	1.4	5.2	2.5

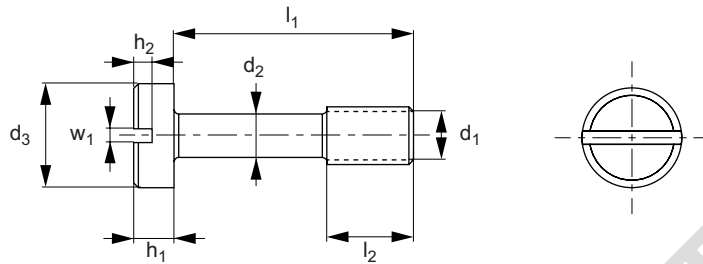


CAPTIVE SCREWS



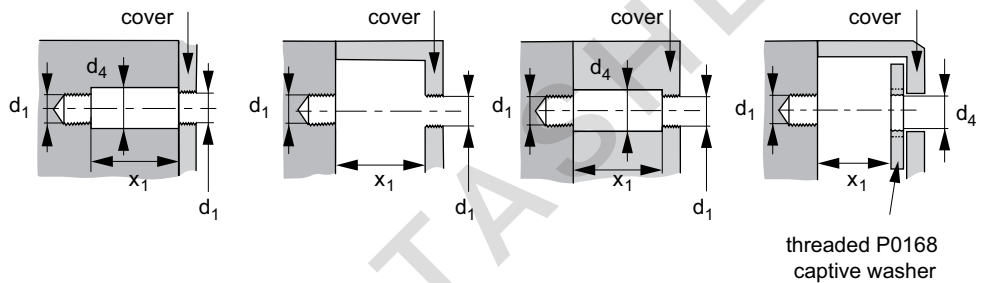
## P0155

MADE IN BRITAIN



application examples :-

counterbore length 'x<sub>1</sub>' should be > l<sub>2</sub>



threaded P0168 captive washer

**ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE**

**Material**

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel. Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.

Suffix with A2,A4,B2,B4 or Ti for required material type. E.g. P0155.020-

010-A2 = 303 stainless.

**Technical Notes**

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 1207. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

**Tips**

Other head drive styles - add suffix:  
-TX for Torx (hexalobular).  
-PZ for Pozidrive.  
-SE for snake-eye security.

**Important Notes**

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

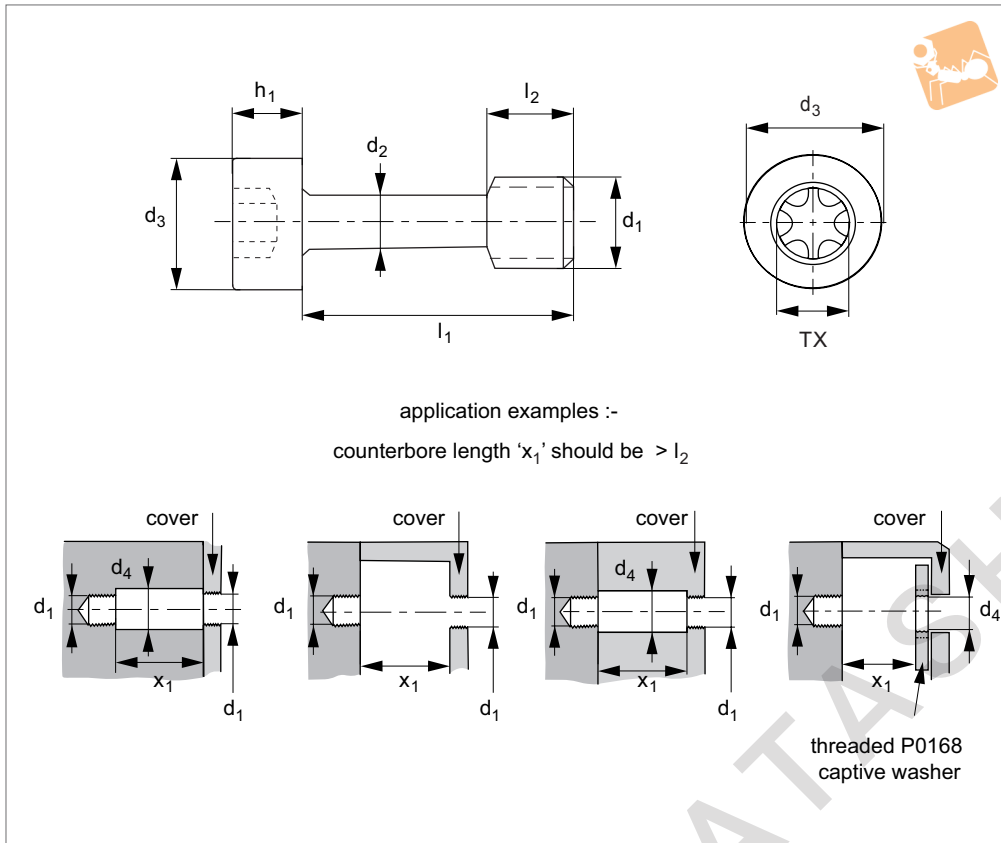
Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub>	d <sub>4</sub> min.	h <sub>1</sub>	h <sub>2</sub>	l <sub>2</sub> ±0.25	w <sub>1</sub>
P0155.020-010	M 2	10	1.2	3.8	2.5	1.3	0.85	3.0	0.5
P0155.020-012	M 2	12	1.2	3.8	2.5	1.3	0.85	3.0	0.5
P0155.020-016	M 2	16	1.2	3.8	2.5	1.3	0.85	3.0	0.5
P0155.020-020	M 2	20	1.2	3.8	2.5	1.3	0.85	3.0	0.5
P0155.025-010	M 2,5	10	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-012	M 2,5	12	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-016	M 2,5	16	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-020	M 2,5	20	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-025	M 2,5	25	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-030	M 2,5	30	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.030-006	M 3	6	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-008	M 3	8	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-010	M 3	10	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-011	M 3	11	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-013	M 3	13	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-016	M 3	16	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-018	M 3	18	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-020	M 3	20	2.0	5.5	3.5	2.0	1.30	4.5	0.8



# Captive Screws - Cap Head

TX drive

## Captive Screws



P0156

CAPTIVE SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel. Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc. **Suffix part number with A2, A4, B2, B4 for required material type e.g. P0156.030-008-A2 for 303**

### stainless.

### Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 4762. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

\*M 8 sizes have a reduced TX size.

### Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

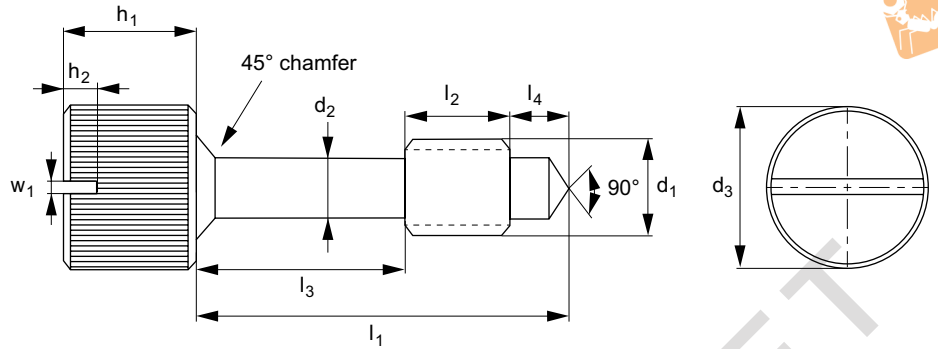
Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub> max.	d <sub>4</sub> min.	h <sub>1</sub> max.	l <sub>2</sub> ±0.25	TX size
P0156.030-008	M 3	8	2.0	5.5	3.5	3	4.5	TX-10
P0156.030-010	M 3	10	2.0	5.5	3.5	3	4.5	TX-10
P0156.030-016	M 3	16	2.0	5.5	3.5	3	4.5	TX-10
P0156.030-020	M 3	20	2.0	5.5	3.5	3	4.5	TX-10
P0156.030-025	M 3	25	2.0	5.5	3.5	3	4.5	TX-10
P0156.030-030	M 3	30	2.0	5.5	3.5	3	4.5	TX-10
P0156.040-008	M 4	8	2.8	7.0	4.5	4	6.0	TX-20
P0156.040-010	M 4	10	2.8	7.0	4.5	4	6.0	TX-20
P0156.040-012	M 4	12	2.8	7.0	4.5	4	6.0	TX-20
P0156.040-016	M 4	16	2.8	7.0	4.5	4	6.0	TX-20
P0156.040-020	M 4	20	2.8	7.0	4.5	4	6.0	TX-20
P0156.040-025	M 4	25	2.8	7.0	4.5	4	6.0	TX-20
P0156.040-030	M 4	30	2.8	7.0	4.5	4	6.0	TX-20
P0156.040-040	M 4	40	2.8	7.0	4.5	4	6.0	TX-20
P0156.040-050	M 4	50	2.8	7.0	4.5	4	6.0	TX-20
P0156.050-010	M 5	10	3.7	8.5	5.5	5	7.5	TX-25
P0156.050-012	M 5	12	3.7	8.5	5.5	5	7.5	TX-25
P0156.050-016	M 5	16	3.7	8.5	5.5	5	7.5	TX-25



**P0159**

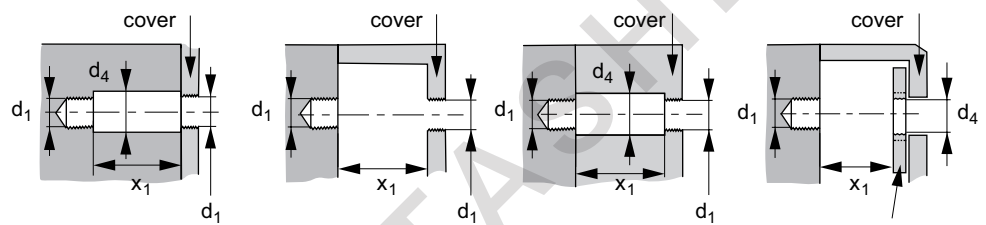
MADE IN BRITAIN

CAPTIVE SCREWS



application examples :-

counterbore length 'x<sub>1</sub>' should be > l<sub>2</sub>



threaded P0168 captive washer

**ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE**

**Material**

Tensile strength 480 N/mm<sup>2</sup>. Proof stress min. 200 N/mm<sup>2</sup>, austenitic stainless steel. Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 303, 1.4305), brass,

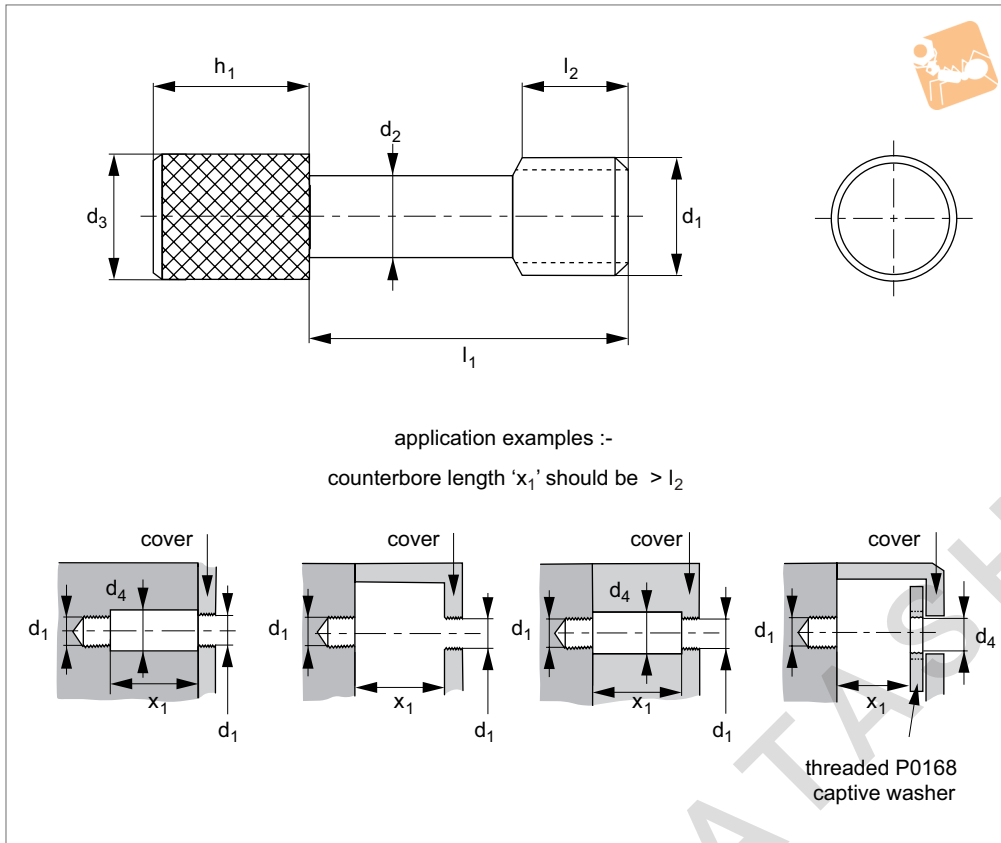
aluminium etc. **Suffix part number with required material type e.g. P0159.030-010-A2 = 303 stainless.**

**Technical Notes**

Used to comply with the Machinery Direc-

tive 2006/42/EC. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub>	d <sub>4</sub> min.	h <sub>1</sub>	h <sub>2</sub>	l <sub>2</sub> ±0.25	l <sub>3</sub>	l <sub>4</sub>	w <sub>1</sub>
P0159.030-010	M 3	10	2	6.5	3.5	6.5	2.0	3.2	4.8	2.0	1.2
P0159.030-014	M 3	14	2	6.5	3.5	6.5	2.0	3.2	8.8	2.0	1.2
P0159.030-016	M 3	16	2	6.5	3.5	6.5	2.0	3.2	10.8	2.0	1.2
P0159.030-020	M 3	20	2	6.5	3.5	6.5	2.0	3.2	14.8	2.0	1.2
P0159.030-022	M 3	22	2	6.5	3.5	6.5	2.0	3.2	16.8	2.0	1.2
P0159.030-024	M 3	24	2	6.5	3.5	6.5	2.0	3.2	18.8	2.0	1.2
P0159.030-026	M 3	26	2	6.5	3.5	6.5	2.0	3.2	20.8	2.0	1.2
P0159.031-010	M 3	10	2	8	3.5	8.0	2.0	3.2	4.8	2.0	1.2
P0159.031-014	M 3	14	2	8	3.5	8.0	2.0	3.2	8.8	2.0	1.2
P0159.031-016	M 3	16	2	8	3.5	8.0	2.0	3.2	10.8	2.0	1.2
P0159.031-020	M 3	20	2	8	3.5	8.0	2.0	3.2	14.8	2.0	1.2
P0159.031-022	M 3	22	2	8	3.5	8.0	2.0	3.2	16.8	2.0	1.2
P0159.031-024	M 3	24	2	8	3.5	8.0	2.0	3.2	18.8	2.0	1.2
P0159.040-010	M 4	10	3	8	4.5	8.0	2.0	5.5	2.0	2.5	1.2
P0159.040-014	M 4	14	3	8	4.5	8.0	2.0	5.5	6.0	2.5	1.2
P0159.040-016	M 4	16	3	8	4.5	8.0	2.0	5.5	8.0	2.5	1.2
P0159.040-020	M 4	20	3	8	4.5	8.0	2.0	5.5	12.0	2.5	1.2
P0159.040-022	M 4	22	3	8	4.5	8.0	2.0	5.5	14.0	2.5	1.2
P0159.040-024	M 4	24	3	8	4.5	8.0	2.0	5.5	16.0	2.5	1.2
P0159.040-027	M 4	27	3	8	4.5	8.0	2.0	5.5	19.0	2.5	1.2
P0159.040-032	M 4	32	3	8	4.5	8.0	2.0	5.5	24.0	2.5	1.2
P0159.050-014	M 5	14	3.5	10	5.5	10.0	2.5	6.5	3.5	4.0	1.5
P0159.050-016	M 5	16	3.5	10	5.5	10.0	2.5	6.5	5.5	4.0	1.5



**P0160**

CAPTIVE SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 316, 1.440).  
Tensile strength 480 N/mm<sup>2</sup>. Proof stress min. 200 N/mm<sup>2</sup>, austenitic stainless steel.  
**Suffix part number with A2,A4,B2,B4 or Ti for required material type. E.g. P0160.030-016-A2 = 303 stainless.**

### Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Often used with our captive washer (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washer should be considered when fitted in panels with unthreaded holes.

### Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

Order No.	d <sub>1</sub>	d <sub>2</sub> ±0.12	l <sub>1</sub> ±0.25	l <sub>2</sub> ±0.25	d <sub>3</sub>	d <sub>4</sub> min.	h <sub>1</sub>
P0160.030-016	M 3	2.0	16	8.0	5	3.5	10
P0160.030-020	M 3	2.0	20	10.0	5	3.5	10
P0160.030-025	M 3	2.0	25	12.5	5	3.5	10
P0160.030-030	M 3	2.0	30	15.0	5	3.5	10
P0160.030-035	M 3	2.0	35	17.5	5	3.5	10
P0160.030-040	M 3	2.0	40	20.0	5	3.5	10
P0160.030-050	M 3	2.0	50	25.0	5	3.5	10
P0160.035-016	M 3.5	2.3	16	8.0	5	3.8	10
P0160.035-020	M 3.5	2.3	20	10.0	5	3.8	10
P0160.035-025	M 3.5	2.3	25	12.5	5	3.8	10
P0160.035-030	M 3.5	2.3	30	15.0	5	3.8	10
P0160.035-035	M 3.5	2.3	35	17.5	5	3.8	10
P0160.035-040	M 3.5	2.3	40	20.0	5	3.8	10
P0160.035-050	M 3.5	2.3	50	25.0	5	3.8	10
P0160.040-016	M 4	2.8	16	8.0	5	4.5	10
P0160.040-020	M 4	2.8	20	10.0	5	4.5	10
P0160.040-025	M 4	2.8	25	12.5	5	4.5	10
P0160.040-030	M 4	2.8	30	15.0	5	4.5	10
P0160.040-035	M 4	2.8	35	17.5	5	4.5	10
P0160.040-040	M 4	2.8	40	20.0	5	4.5	10
P0160.040-050	M 4	2.8	50	25.0	5	4.5	10



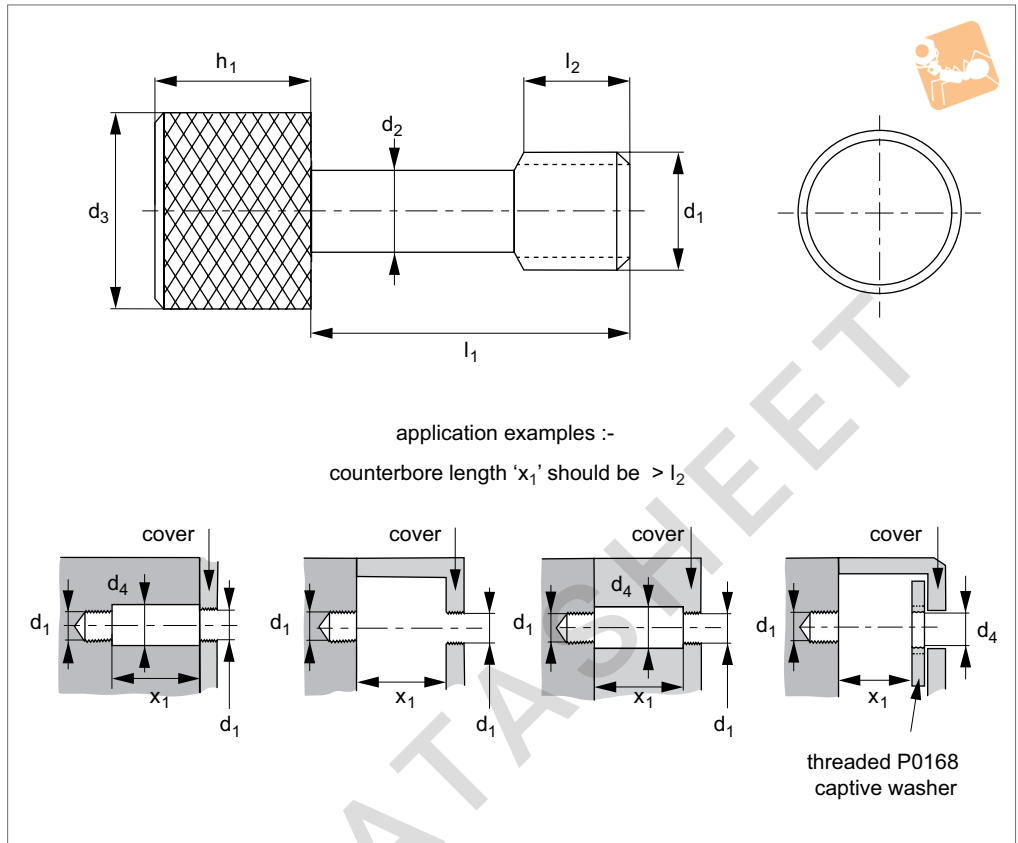


CAPTIVE SCREWS



**P0161**

MADE IN BRITAIN



**ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE**

**Material**

Stainless steel (AISI 316, 1.440).  
Tensile strength 480 N/mm<sup>2</sup>. Proof stress min. 200 N/mm<sup>2</sup>, austenitic stainless steel.  
**Suffix part number with A2, A4, B2, B4 or Ti for required material. E.g. P0161.030-008-A2 = 303 stainless.**

**Technical Notes**

Used to comply with the Machinery Directive 2006/42/EC. Often used with our captive washer (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washer should be considered when fitted in panels with unthreaded holes.

**Important Notes**

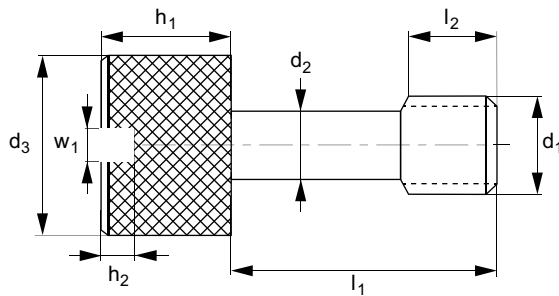
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

Order No.	d <sub>1</sub>	d <sub>2</sub> ±0.12	l <sub>1</sub> ±0.25	l <sub>2</sub> ±0.25	d <sub>3</sub>	d <sub>4</sub> min.	h <sub>1</sub>
P0161.030-008	M 3	2.0	8	4.5	8	3.5	5
P0161.030-010	M 3	2.0	10	4.5	8	3.5	5
P0161.030-012	M 3	2.0	12	4.5	8	3.5	5
P0161.030-014	M 3	2.0	14	4.5	8	3.5	5
P0161.030-016	M 3	2.0	16	4.5	8	3.5	5
P0161.035-008	M3,5	2.3	8	6.0	8	3.8	5
P0161.035-010	M3,5	2.3	10	6.0	8	3.8	5
P0161.035-012	M3,5	2.3	12	6.0	8	3.8	5
P0161.035-014	M3,5	2.3	14	6.0	8	3.8	5
P0161.035-016	M3,5	2.3	16	6.0	8	3.8	5
P0161.040-010	M 4	2.8	10	6.0	10	4.5	5
P0161.040-012	M 4	2.8	12	6.0	10	4.5	5
P0161.040-014	M 4	2.8	14	6.0	10	4.5	5
P0161.040-016	M 4	2.8	16	6.0	10	4.5	5
P0161.040-018	M 4	2.8	18	6.0	10	4.5	5
P0161.040-020	M 4	2.8	20	6.0	10	4.5	5
P0161.040-025	M 4	2.8	25	6.0	10	4.5	5
P0161.050-010	M 5	3.7	10	7.5	10	5.5	5
P0161.050-012	M 5	3.7	12	7.5	10	5.5	5
P0161.050-014	M 5	3.7	14	7.5	10	5.5	5
P0161.050-016	M 5	3.7	16	7.5	10	5.5	5



# Captive Thumb Screws slot drive

Captive Screws

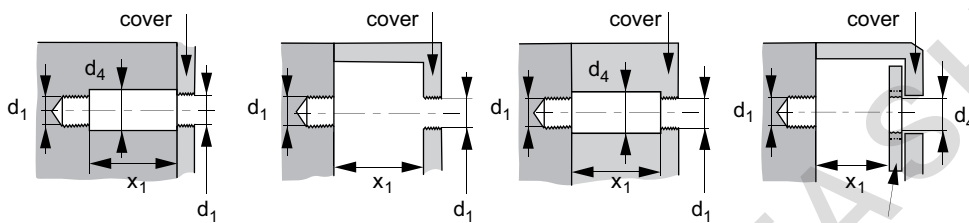


P0162

CAPTIVE SCREWS

application examples :-

counterbore length 'x<sub>1</sub>' should be > l<sub>2</sub>



threaded P0168  
captive washer

**ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE**

**Material**

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel.

**Suffix part number with A2, A4, B2, B4 or Ti for required material type. E.g. P0162.030-008-A4 = 316 stainless.**

**Technical Notes**

Used to comply with the Machinery Directive 2006/42/EC. Often used with our captive washer (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washer should be considered when fitted in panels with unthreaded holes.

**Important Notes**

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

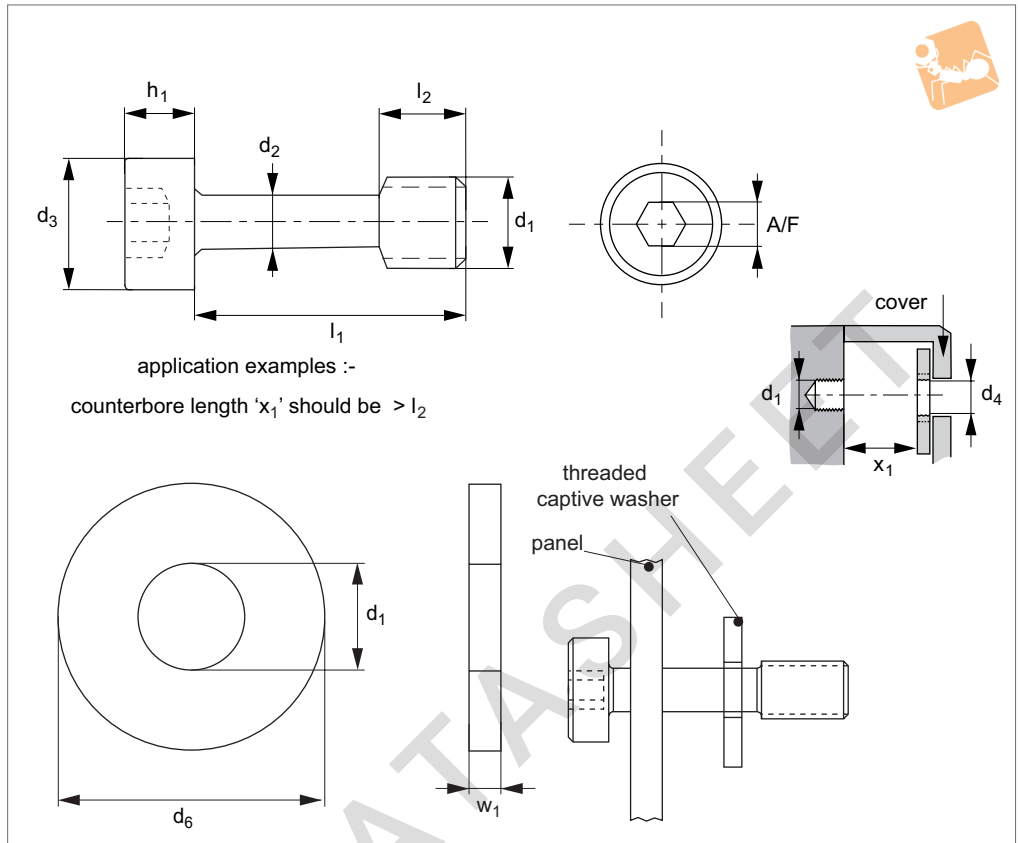
Order No.	d <sub>1</sub>	d <sub>2</sub> ±0.12	l <sub>1</sub> ±0.25	l <sub>2</sub> ±0.25	d <sub>3</sub>	d <sub>4</sub> min.	h <sub>1</sub>	h <sub>2</sub>	w <sub>1</sub>
P0162.030-008	M 3	2.0	8.0	4.5	8	3.5	5	1.8	0.8
P0162.030-010	M 3	2.0	10.0	4.5	8	3.5	5	1.8	0.8
P0162.030-012	M 3	2.0	12.0	4.5	8	3.5	5	1.8	0.8
P0162.030-014	M 3	2.0	14.0	4.5	8	3.5	5	1.8	0.8
P0162.030-016	M 3	2.0	16.0	4.5	8	3.5	5	1.8	0.8
P0162.040-010	M 4	2.8	10.0	6.0	10	4.5	5	2.2	1.0
P0162.040-012	M 4	2.8	12.0	6.0	10	4.5	5	2.2	1.0
P0162.040-014	M 4	2.8	14.0	6.0	10	4.5	5	2.2	1.0
P0162.040-016	M 4	2.8	16.0	6.0	10	4.5	5	2.2	1.0
P0162.040-018	M 4	2.8	18.0	6.0	10	4.5	5	2.2	1.0
P0162.040-020	M 4	2.8	20.0	6.0	10	4.5	5	2.2	1.0
P0162.040-025	M 4	2.8	25.0	6.0	10	4.5	5	2.2	1.0
P0162.050-010	M 5	3.7	10.0	7.5	10	5.5	5	2.8	1.2
P0162.050-012	M 5	3.7	12.0	7.5	10	5.5	5	2.8	1.2
P0162.050-014	M 5	3.7	14.0	7.5	10	5.5	5	2.8	1.2
P0162.050-016	M 5	3.7	16.0	7.5	10	5.5	5	2.8	1.2
P0162.050-018	M 5	3.7	18.0	7.5	10	5.5	5	2.8	1.2
P0162.050-020	M 5	3.7	20.0	7.5	10	5.5	5	2.8	1.2
P0162.050-025	M 5	3.7	25.0	7.5	10	5.5	5	2.8	1.2
P0162.050-030	M 5	3.7	30.0	7.5	10	5.5	5	2.8	1.2
P0162.060-012	M 6	4.5	12.0	7.5	12	6.5	6	3.5	1.6



CAPTIVE SCREWS



## P0163.A2



ADDITIONAL SIZES AVAILABLE

### Material

Screw.

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm<sup>2</sup>. Proof stress min. 190 N/mm<sup>2</sup>, austenitic stainless steel.

Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.

Washer.

Stainless steel (AISI 303, 1.4305 and AISI 316, 1.440), Also available on request in

steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc steel (zinc-plated or black-oxide) and titanium (grade 2 and grade 5)

### Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 4762.

### Tips

TX drive style also available.

Captive washers are primarily used to retain captive screws in panels which have

unthreaded holes. The panel (onto which the screw needs to be retained) is placed onto the captive screw, the threaded washer is then threaded onto the screw, past the threaded section and the screw is therefore captive to the panel.

### Important Notes

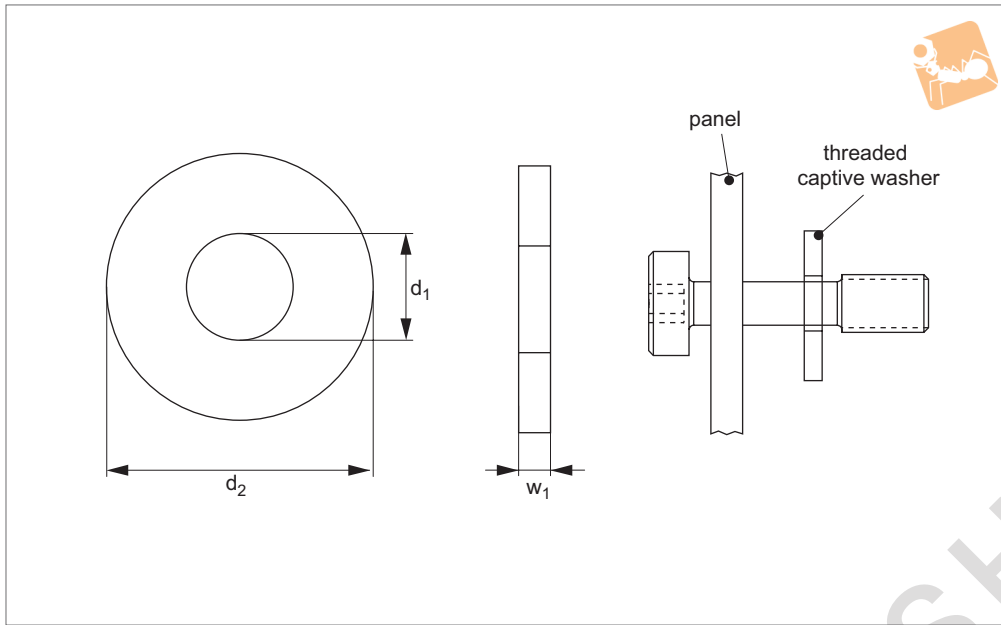
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d<sub>1</sub>.

Order No.	d <sub>1</sub>	l <sub>1</sub> ±0.25	d <sub>2</sub> ±0.12	d <sub>3</sub> max.	d <sub>4</sub> min.	d <sub>6</sub>	h <sub>1</sub> max.	l <sub>2</sub> ±0.25	w <sub>1</sub> ±0.05	A/F
P0163.025-005-A2	M 2.5	5	1.8	4.5	2.8	5.0	2.5	3.0	1.0	2.0
P0163.025-008-A2	M 2.5	8	1.8	4.5	2.8	5.0	2.5	3.0	1.0	2.0
P0163.025-010-A2	M 2.5	10	1.8	4.5	2.8	5.0	2.5	3.0	1.0	2.0
P0163.025-012-A2	M 2.5	12	1.8	4.5	2.8	5.0	2.5	3.0	1.0	2.0
P0163.030-008-A2	M 3	8	2.0	5.5	3.5	6.0	3.0	4.5	1.0	2.5
P0163.030-010-A2	M 3	10	2.0	5.5	3.5	6.0	3.0	4.5	1.0	2.5
P0163.030-012-A2	M 3	12	2.0	5.5	3.5	6.0	5.5	4.5	1.0	2.5
P0163.030-016-A2	M 3	16	2.0	5.5	3.5	6.0	3.0	4.5	1.0	2.5
P0163.030-020-A2	M 3	20	2.0	5.5	3.5	6.0	3.0	4.5	1.0	2.5
P0163.030-025-A2	M 3	25	2.0	5.5	3.5	6.0	3.0	4.5	1.0	2.5
P0163.030-030-A2	M 3	30	2.0	5.5	3.5	6.0	3.0	4.5	1.0	2.5
P0163.040-010-A2	M 4	10	2.8	7.0	4.5	8.0	4.0	6.0	1.2	3.0
P0163.040-012-A2	M 4	12	2.8	7.0	4.5	8.0	4.0	6.0	1.2	3.0
P0163.040-016-A2	M 4	16	2.8	7.0	4.5	8.0	4.0	5.0	1.2	3.0
P0163.040-020-A2	M 4	20	2.8	7.0	4.5	8.0	4.0	6.0	1.2	3.0



# Threaded Captive Washers for captive screws

Captive Screws



P0168

CAPTIVE SCREWS

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303, 1.4305 and AISI 316, 1.440), steel (zinc-plated or black-oxide) and titanium (grade 2 and grade 5).  
\*Suffix part number with A2, A4, B2, B4, ZP, T2 or T5 for required material type.

### Technical Notes

Captive washers have a very shallow thread

on the i/d.

This enables them to be screwed on, and once past the threads they do not separate from the captive screw or bolt.

### Tips

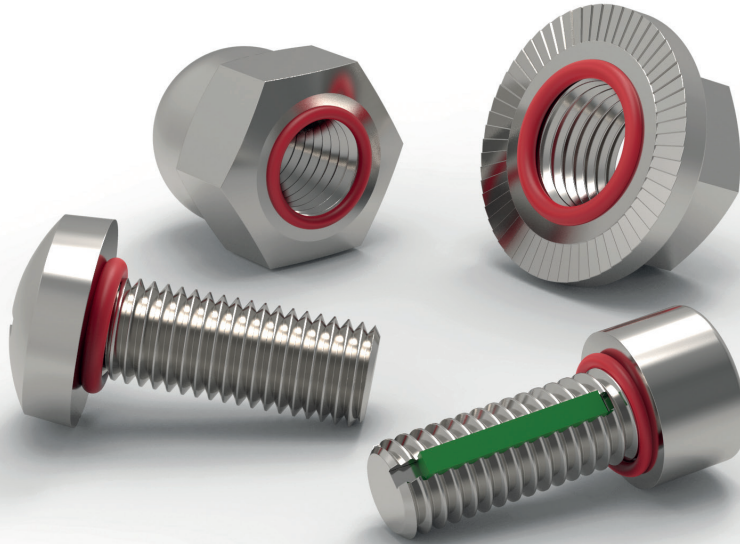
Captive washers are primarily used to retain captive screws in panels which have unthreaded holes. The panel (onto which

the screw needs to be retained) is placed onto the captive screw, the threaded washer is then threaded onto the screw, past the threaded section and the screw is therefore captive to the panel.

Order No.	d <sub>1</sub>	w <sub>1</sub> ±0.05	d <sub>2</sub>	Material
P0168.025	M 2,5	1.0	5.0	*See above notes for material options
P0168.030	M 3	1.0	6.0	*See above notes for material options
P0168.035	M 3,5	1.2	8.0	*See above notes for material options
P0168.040	M 4	1.2	8.0	*See above notes for material options
P0168.050	M 5	1.5	10.0	*See above notes for material options
P0168.060	M 6	1.6	12.0	*See above notes for material options
P0168.080	M 8	2.0	16.0	*See above notes for material options
P0168.100	M10	3.0	20.0	*See above notes for material options
P0168.120	M12	3.5	24.0	*See above notes for material options
P0168.160	M16	4.0	32.0	*See above notes for material options
P0168.200	M20	5.0	40.0	*See above notes for material options
P0168.025	M 2,5	1.0	5.0	*See above notes for material options
P0168.030	M 3	1.0	6.0	*See above notes for material options
P0168.035	M 3,5	1.2	8.0	*See above notes for material options
P0168.040	M 4	1.2	8.0	*See above notes for material options
P0168.050	M 5	1.5	10.0	*See above notes for material options
P0168.060	M 6	1.6	12.0	*See above notes for material options
P0168.080	M 8	2.0	16.0	*See above notes for material options
P0168.100	M10	3.0	20.0	*See above notes for material options
P0168.120	M12	3.5	24.0	*See above notes for material options
P0168.160	M16	4.0	32.0	*See above notes for material options
P0168.200	M20	5.0	40.0	*See above notes for material options

# AN INTRODUCTION TO SEALING SCREWS

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## WHAT IS A SEALING SCREW?

An ordinary screw lacks seal protection, allowing dirt, fluids, gases etc, to infiltrate and damage sensitive devices. **Sealing screws provide bi-directional sealing protection to systems where screws are used, to protect them against foreign contaminants,** which with a standard fastening may penetrate or leak and cause damage.

The seal screws **incorporate an O-ring underneath the screw, bolt etc, which forms a sealant layer.** The seal provides bi-directional sealing. The screws are very easy to use and do not need any special preparation or re-tightening.

Automotion Components self sealing fasteners are designed and manufactured with a precision engineered groove beneath the head of the fastener. As the fastener is tightened, the O-ring is compressed, squeezing the O-ring between the groove and mating surface to complete the seal. The design of the groove controls the amount of compression of the O-ring and, because O-rings retain their elastic memory, the screws are reusable time after time. There are a range of O-ring materials that can resist virtually all chemical and environmental conditions. We can also provide sealing screws (on request) to military specifications (MILSPEC).

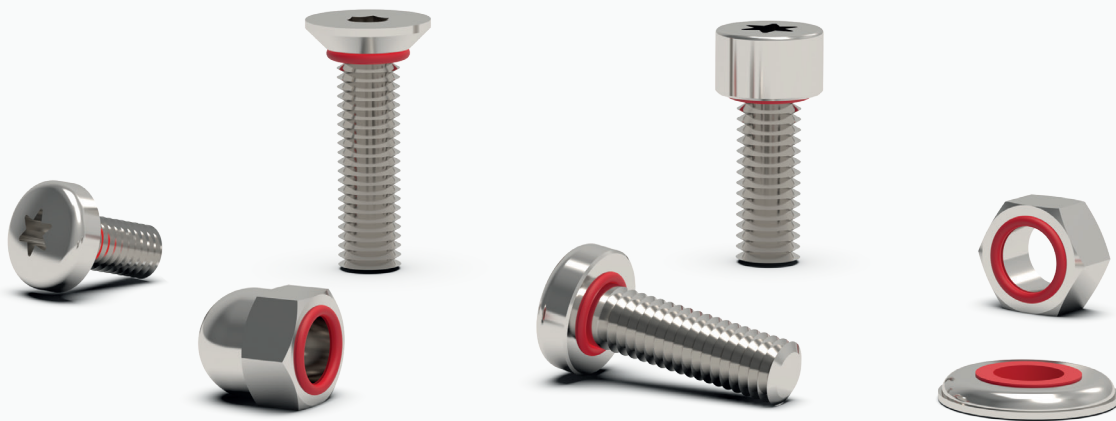


## SEALING SCREWS

Sealing screws offer crucial bi-directional protection against contaminants, preventing potential damage to sensitive devices. Featuring an O-ring beneath the screw or bolt, these screws create a reliable seal as they are tightened, controlled by a precision-engineered groove. This design ensures consistent O-ring compression, making the screws reusable. Various O-ring materials resist diverse chemical and environmental conditions. Sealing screws, available to military specifications (MILSPEC) on request, are user-friendly, requiring no special preparation or re-tightening.



VIEW THE FULL RANGE



### Pan Head Seal Screws - P0171

Available in 303 and 316 stainless steel.



### Cap Head Seal Screws - P0173

Available in 303 and 316 stainless steel.

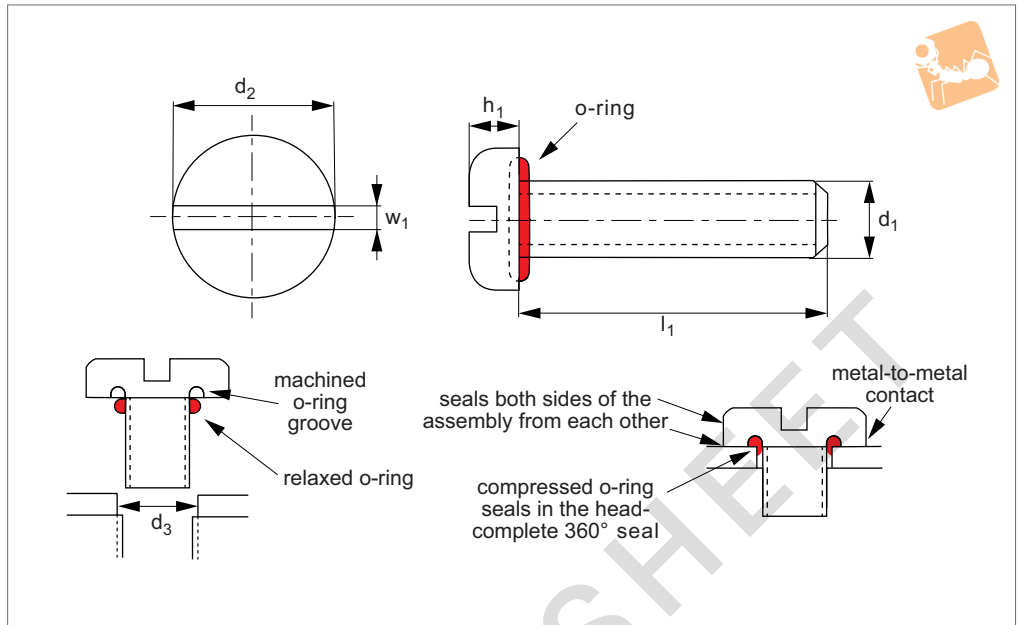


### Button Head Seal Screws - P0174

Available in 303 and 316 stainless steel.



## P0171



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303 1.4305 tensile strength 550 N/mm<sup>2</sup>), with silicone „O“ ring as standard.

### See page 40 for O-Ring material options.

(-FS = fluorosilicone, -EP = EPDM, -VI = viton, -NI = nitrile, -BN = Buna etc.).  
Other thread lengths, and stainless steel A4 (AISI 316) on request.

### Technical Notes

Screws generally as DIN 85 A, ISO 1580, seals substances in and contaminants out. Re-useable. Clearance holes recommended for maximum sealing.  
Max temperature range: -100°C to +260°C, pressure range - up to 410 bar (6000 psi). Also available (on request) with thread-locking.

### Tips

Clearance holes recommended for maximum sealing performance (see dimensions below).  
Clearance hole depth 2-3 x thread pitch, threads are metric coarse pitch.

Order No.	d <sub>1</sub>	l <sub>1</sub>	h <sub>1</sub> max.	w <sub>1</sub>	d <sub>2</sub> max.	d <sub>3</sub> ±0.05
P0171.020-004-SI	M 2	4	1.3	0.7	4.0	2.35
P0171.020-008-SI	M 2	8	1.3	0.7	4.0	2.35
P0171.020-010-SI	M 2	10	1.3	0.7	4.0	2.35
P0171.020-012-SI	M 2	12	1.3	0.7	4.0	2.35
P0171.025-006-SI	M2,5	6	1.5	0.8	5.0	2.75
P0171.025-008-SI	M2,5	8	1.5	0.8	5.0	2.75
P0171.025-010-SI	M2,5	10	1.5	0.8	5.0	2.75
P0171.025-012-SI	M2,5	12	1.5	0.8	5.0	2.75
P0171.030-006-SI	M 3	6	1.8	1.0	6.0	3.6
P0171.030-008-SI	M 3	8	1.8	1.0	6.0	3.6
P0171.030-010-SI	M 3	10	1.8	1.0	6.0	3.6
P0171.030-012-SI	M 3	12	1.8	1.0	6.0	3.6
P0171.030-020-SI	M 3	20	1.8	1.0	6.0	3.6
P0171.040-006-SI	M 4	6	2.4	1.4	8.0	4.5
P0171.040-008-SI	M 4	8	2.4	1.4	8.0	4.5
P0171.040-010-SI	M 4	10	2.4	1.4	8.0	4.5
P0171.040-012-SI	M 4	12	2.4	1.4	8.0	4.5
P0171.040-016-SI	M 4	16	2.4	1.4	8.0	4.5
P0171.040-020-SI	M 4	20	2.4	1.4	8.0	4.5
P0171.050-008-SI	M 5	8	3.0	1.6	10.0	5.6
P0171.050-010-SI	M 5	10	3.0	1.6	10.0	5.6
P0171.050-012-SI	M 5	12	3.0	1.6	10.0	5.6
P0171.050-016-SI	M 5	16	3.0	1.6	10.0	5.6
P0171.050-020-SI	M 5	20	3.0	1.6	10.0	5.6
P0171.060-012-SI	M 6	12	3.6	2.0	12.0	6.8
P0171.060-016-SI	M 6	16	3.6	2.0	12.0	6.8
P0171.060-020-SI	M 6	20	3.6	2.0	12.0	6.8
P0171.060-025-SI	M 6	25	3.6	2.0	12.0	6.8

# Cap Head Seal Screws

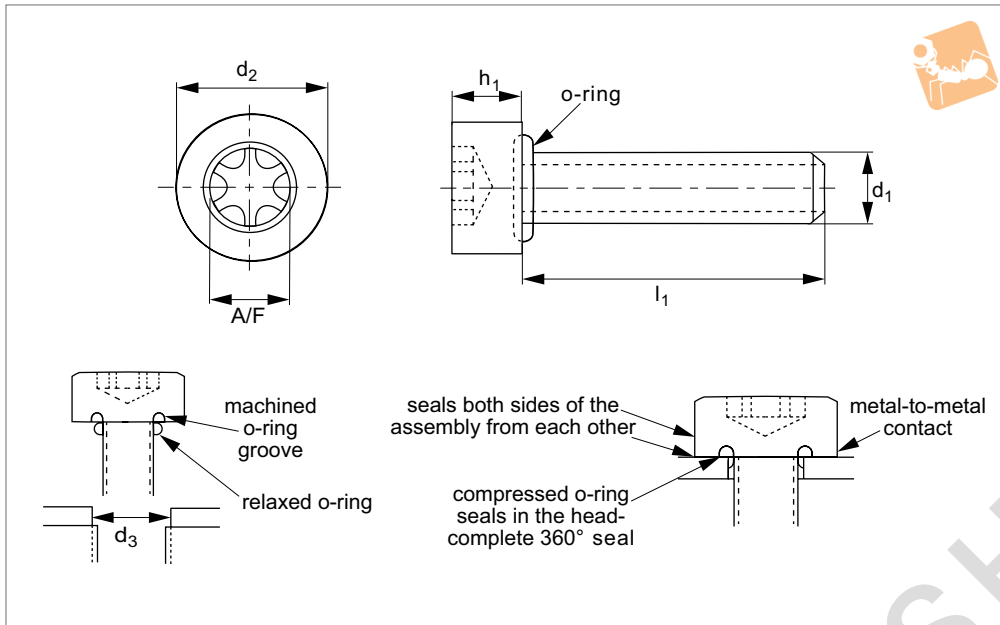
torx drive

# Sealing Screws



**P0173.TX**

SEALING SCREWS



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303 1.4305 tensile strength 550 N/mm<sup>2</sup> or AISI 316 1.440 tensile strength 480 N/mm<sup>2</sup>), with silicone „O“ ring as standard.

**See page 40 for O-Ring material options.**

(-FS = fluorosilicone, -EP = EPDM, -VI = viton, -NI = nitrile, -BN = Buna etc.).

Other thread lengths on request.

### Technical Notes

Screws generally as ISO 14759, seals substances in and contaminants out  
Re-useable, clearance holes recommended for maximum sealing.

Max temperature range: -100°C to +260°C, pressure range - up to 410 bar (6000 psi). Also available (on request) with thread-locking.

### Tips

Clearance holes recommended for maximum sealing performance (see dimensions below).

Clearance hole depth 2-3 x thread pitch, threads are metric coarse pitch.

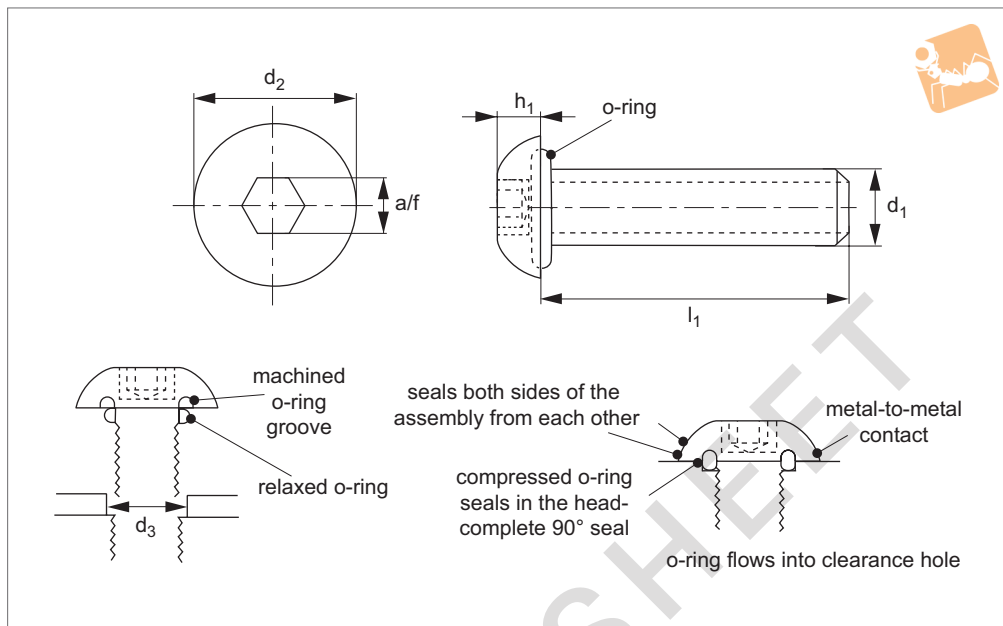
Order No.	d <sub>1</sub>	l <sub>1</sub>	h <sub>1</sub> max.	d <sub>2</sub> max.	Drive	d <sub>3</sub> ±0.05	Material
P0173.020-004-TX	M 2	4	2.0	3.8	TX 6	2.35	A2 s/s
P0173.020-008-TX	M 2	8	2.0	3.8	TX 6	2.35	A2 s/s
P0173.020-010-TX	M 2	10	2.0	3.8	TX 6	2.35	A2 s/s
P0173.020-012-TX	M 2	12	2.0	3.8	TX 6	2.35	A2 s/s
P0173.025-006-TX	M2,5	6	2.5	4.5	TX 8	2.75	A2 s/s
P0173.025-008-TX	M2,5	8	2.5	4.5	TX 8	2.75	A2 s/s
P0173.025-010-TX	M2,5	10	2.5	4.5	TX 8	2.75	A2 s/s
P0173.025-012-TX	M2,5	12	2.5	4.5	TX 8	2.75	A2 s/s
P0173.030-006-TX	M 3	6	3.0	5.5	TX10	3.6	A2 s/s
P0173.030-008-TX	M 3	8	3.0	5.5	TX10	3.6	A2 s/s
P0173.030-010-TX	M 3	10	3.0	5.5	TX10	3.6	A2 s/s
P0173.030-012-TX	M 3	12	3.0	5.5	TX10	3.6	A2 s/s
P0173.030-020-TX	M 3	20	3.0	5.5	TX10	3.6	A2 s/s
P0173.040-006-TX	M 4	6	4.0	7.0	TX20	4.5	A2 s/s
P0173.040-008-TX	M 4	8	4.0	7.0	TX20	4.5	A2 s/s
P0173.040-010-TX	M 4	10	4.0	7.0	TX20	4.5	A2 s/s
P0173.040-012-TX	M 4	12	4.0	7.0	TX20	4.5	A2 s/s
P0173.040-016-TX	M 4	16	4.0	7.0	TX20	4.5	A2 s/s
P0173.040-020-TX	M 4	20	4.0	7.0	TX20	4.5	A2 s/s
P0173.050-008-TX	M 5	8	5.0	8.5	TX25	5.6	A2 s/s
P0173.050-010-TX	M 5	10	5.0	8.5	TX25	5.6	A2 s/s
P0173.050-012-TX	M 5	12	5.0	8.5	TX25	5.6	A2 s/s
P0173.050-016-TX	M 5	16	5.0	8.5	TX25	5.6	A2 s/s
P0173.050-020-TX	M 5	20	5.0	8.5	TX25	5.6	A2 s/s
P0173.060-012-TX	M 6	12	6.0	10.0	TX30	6.8	A2 s/s
P0173.060-016-TX	M 6	16	6.0	10.0	TX30	6.8	A2 s/s
P0173.060-020-TX	M 6	20	6.0	10.0	TX30	6.8	A2 s/s
P0173.060-025-TX	M 6	25	6.0	10.0	TX30	6.8	A2 s/s



SEALING SCREWS



## P0174



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303 1.4305 tensile strength 550 N/mm<sup>2</sup> or AISI 316 1.440 tensile strength 480 N/mm<sup>2</sup>), with silicone „O” ring as standard.

For other „O” ring materials see technical data pages

(-FS = fluorosilicone, -EP = EPDM, -VI = viton, -NI = nitrile, -BN = Buna etc.).

Other thread lengths on request.

### Technical Notes

Screws generally as ISO 7380, seals substances in and contaminants out.

Re-useable. Clearance holes recommended for maximum sealing.

Max temperature range: -100°C to +260°C, pressure range - up to 410 bar (6000 psi).

Also available (on request) with thread-locking. **See page 40 for O-Ring options.**

### Tips

Clearance holes recommended for maximum sealing performance (see dimensions below).

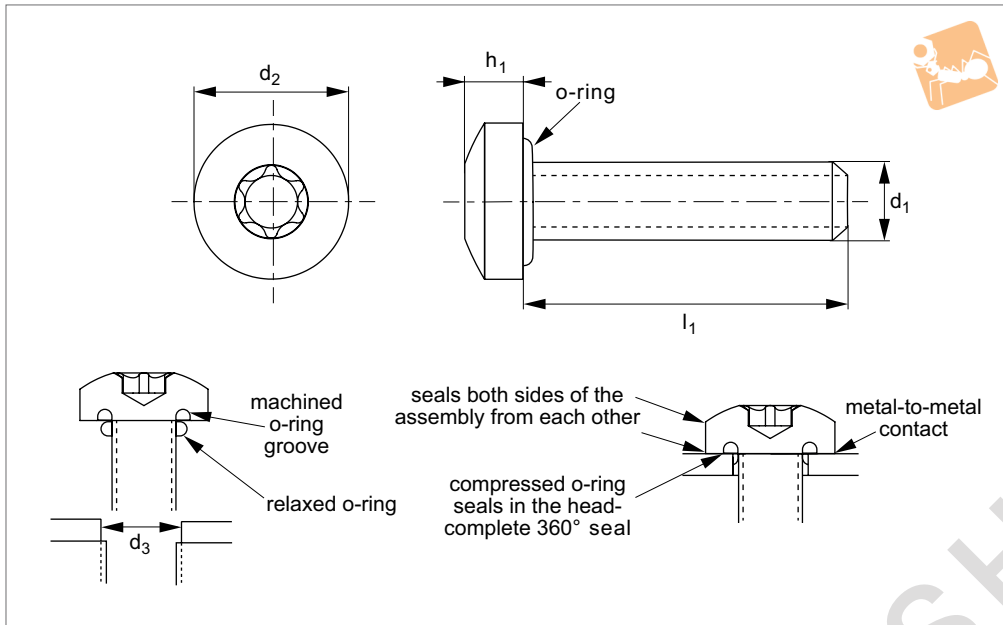
Clearance hole depth 2-3 x thread pitch, threads are metric coarse pitch.

Order No.	d <sub>1</sub>	l <sub>1</sub>	h <sub>1</sub> max.	d <sub>2</sub> max.	A/F	d <sub>3</sub> ±0.05	Material
P0174.030-006	M 3	6	1.7	5.7	2	3.6	A2 s/s
P0174.030-008	M 3	8	1.7	5.7	2	3.6	A2 s/s
P0174.030-010	M 3	10	1.7	5.7	2	3.6	A2 s/s
P0174.030-012	M 3	12	1.7	5.7	2	3.6	A2 s/s
P0174.030-020	M 3	20	1.7	5.7	2	3.6	A2 s/s
P0174.040-006	M 4	6	2.2	7.6	2.5	4.5	A2 s/s
P0174.040-008	M 4	8	2.2	7.6	2.5	4.5	A2 s/s
P0174.040-010	M 4	10	2.2	7.6	2.5	4.5	A2 s/s
P0174.040-012	M 4	12	2.2	7.6	2.5	4.5	A2 s/s
P0174.040-016	M 4	16	2.2	7.6	2.5	4.5	A2 s/s
P0174.040-020	M 4	20	2.2	7.6	2.5	4.5	A2 s/s
P0174.050-008	M 5	8	2.8	9.5	3	5.6	A2 s/s
P0174.050-010	M 5	10	2.8	9.5	3	5.6	A2 s/s
P0174.050-012	M 5	12	2.8	9.5	3	5.6	A2 s/s
P0174.050-016	M 5	16	2.8	9.5	3	5.6	A2 s/s
P0174.050-020	M 5	20	2.8	9.5	3	5.6	A2 s/s
P0174.060-012	M 6	12	3.3	10.5	4	6.8	A2 s/s
P0174.060-016	M 6	16	3.3	10.5	4	6.8	A2 s/s
P0174.060-020	M 6	20	3.3	10.5	4	6.8	A2 s/s
P0174.060-025	M 6	25	3.3	10.5	4	6.8	A2 s/s
P0174.060-030	M 6	30	3.3	10.5	4	6.8	A2 s/s
P0174.080-012	M 8	12	4.4	14.0	5	8.5	A2 s/s
P0174.080-016	M 8	16	4.4	14.0	5	8.5	A2 s/s
P0174.080-020	M 8	20	4.4	14.0	5	8.5	A2 s/s
P0174.080-025	M 8	25	4.4	14.0	5	8.5	A2 s/s
P0174.080-030	M 8	30	4.4	14.0	5	8.5	A2 s/s
P0174.100-016	M10	16	5.5	17.5	6	10.6	A2 s/s
P0174.100-020	M10	20	5.5	17.5	6	10.6	A2 s/s

# Pan Head Seal Screws

torx drive

## Sealing Screws



**P0172**

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303 1.4305 tensile strength 550 N/mm<sup>2</sup>), with silicone „O“ ring as standard.

### See page 40 for O-Ring material options.

(-FS = fluorosilicone, -EP = EPDM, -VI = viton, -NI = nitrile, -BN = Buna etc.). Other thread lengths, and stainless steel A4 (AISI 316) on request.

### Technical Notes

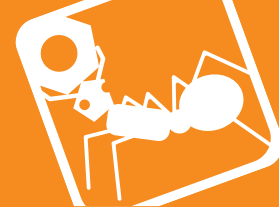
Seals substances in and contaminants out. Screws generally as DIN 7985 H, ISO 7045. Re-useable. Max temperature range: -100°C to +260°C. Pressure range - up to 410 bar (6000 psi). Also available (on request) with thread-locking.

### Tips

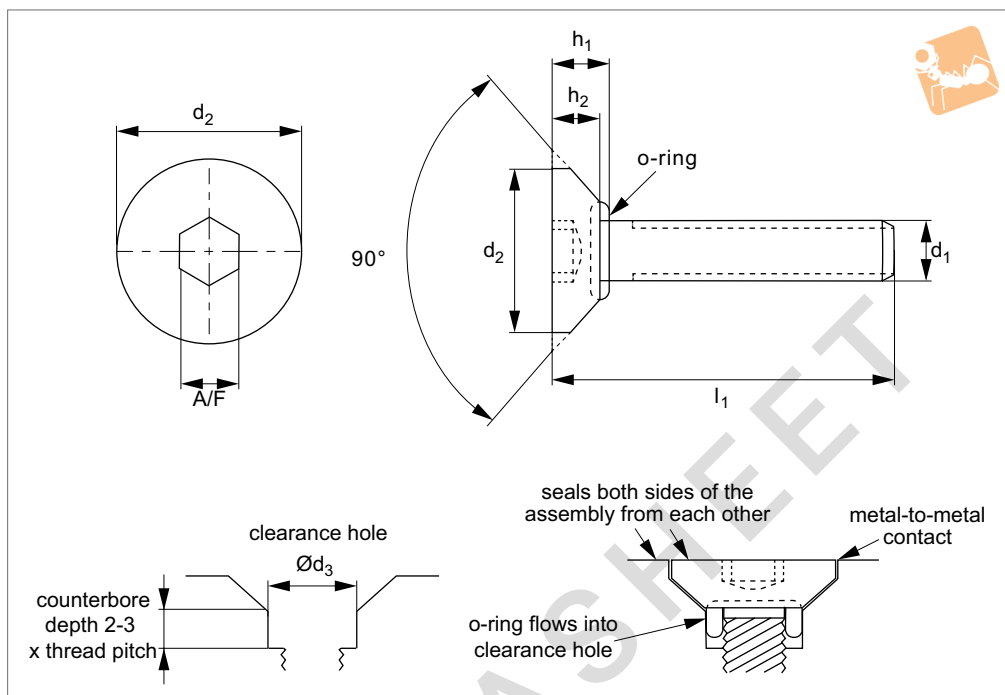
Clearance holes recommended for maximum sealing performance (see dimensions below). Clearance hole depth 2-3 x thread pitch. Threads are metric coarse pitch.

Order No.	d <sub>1</sub>	l <sub>1</sub>	h <sub>1</sub> max.	d <sub>2</sub> max.	d <sub>3</sub> ±0.05	Drive
P0172.030-006-SI	M 3	6	2.4	6.0	3.6	TX-10
P0172.030-008-SI	M 3	8	2.4	6.0	3.6	TX-10
P0172.030-010-SI	M 3	10	2.4	6.0	3.6	TX-10
P0172.030-012-SI	M 3	12	2.4	6.0	3.6	TX-10
P0172.030-020-SI	M 3	20	2.4	6.0	3.6	TX-10
P0172.040-006-SI	M 4	6	3.3	8.0	4.5	TX-20
P0172.040-008-SI	M 4	8	3.3	8.0	4.5	TX-20
P0172.040-010-SI	M 4	10	3.3	8.0	4.5	TX-20
P0172.040-012-SI	M 4	12	3.3	8.0	4.5	TX-20
P0172.040-016-SI	M 4	16	3.3	8.0	4.5	TX-20
P0172.040-020-SI	M 4	20	3.3	8.0	4.5	TX-20
P0172.050-008-SI	M 5	8	3.7	10.0	5.6	TX-25
P0172.050-010-SI	M 5	10	3.7	10.0	5.6	TX-25
P0172.050-012-SI	M 5	12	3.7	10.0	5.6	TX-25
P0172.050-016-SI	M 5	16	3.7	10.0	5.6	TX-25
P0172.050-020-SI	M 5	20	1.6	10.0	5.6	TX-25
P0172.060-012-SI	M 6	12	4.6	12.0	6.8	TX-30
P0172.060-016-SI	M 6	16	4.6	12.0	6.8	TX-30
P0172.060-020-SI	M 6	20	4.6	12.0	6.8	TX-30
P0172.060-025-SI	M 6	25	4.6	12.0	6.8	TX-30
P0172.060-030-SI	M 6	30	4.6	12.0	6.8	TX-30
P0172.080-012-SI	M 8	12	6.0	16.0	8.5	TX-40
P0172.080-016-SI	M 8	16	6.0	16.0	8.5	TX-40
P0172.080-020-SI	M 8	20	6.0	16.0	8.5	TX-40
P0172.080-025-SI	M 8	25	6.0	16.0	8.5	TX-40
P0172.080-030-SI	M 8	30	6.0	16.0	8.5	TX-40
P0172.030-006-VI	M 3	6	2.4	6.0	3.6	TX-10
P0172.030-008-VI	M 3	8	2.4	6.0	3.6	TX-10





## P0175



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303 1.4305 tensile strength 550 N/mm<sup>2</sup>), with silicone „O“ ring as standard.

### See page 40 for O-Ring material options.

(-FS = fluorosilicone, -EP = EPDM, -VI = viton, -NI = nitrile, -BN = Buna etc.).

Other thread lengths, and stainless steel (AISI 316, 1.440) on request.

### Technical Notes

Screws generally as DIN 7991, ISO 10642, seals substances in and contaminants out. Re-useable. Clearance holes recommended for maximum sealing.

Max temperature range: -100°C to +260°C, pressure range - up to 410 bar (6000 psi).

Also available (on request) with thread-locking.

### Tips

Clearance holes recommended for maximum sealing performance (see dimensions below).

Clearance hole depth 2-3 x thread pitch, threads are metric coarse pitch.

$h_1$  dimension is the intersection of the countersunk and shank.

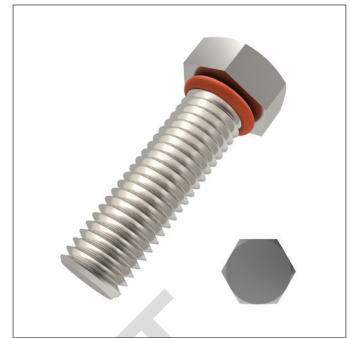
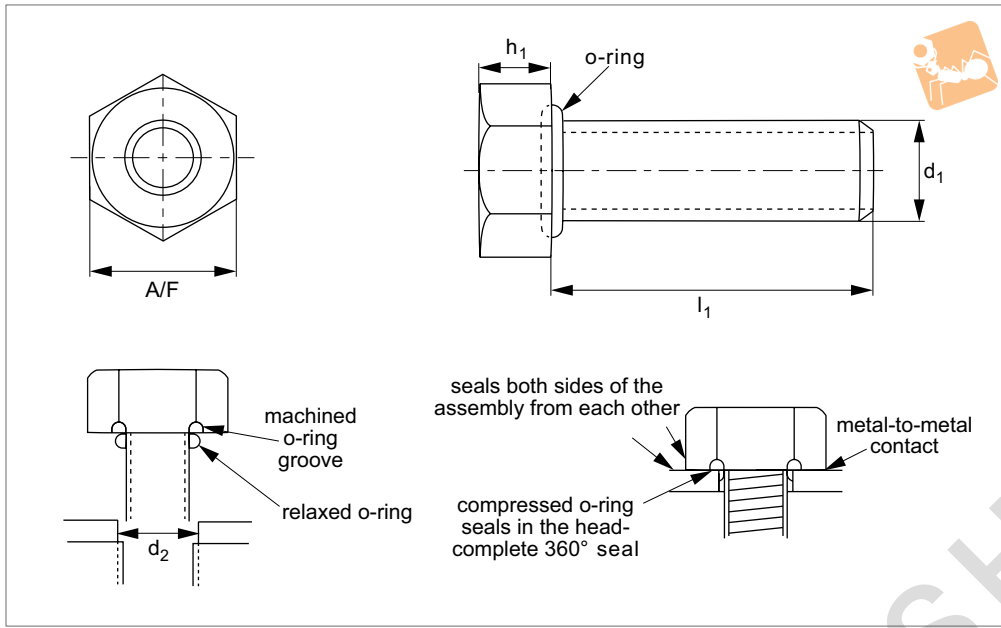
Order No.	$d_1$	$l_1$	$h_1$	$h_2$	$d_2$	$d_3$ ±0.05	A/F
P0175.030-006-SI	M 3	6	1.86	1.1	5.8	3.6	2.0
P0175.030-008-SI	M 3	8	1.86	1.1	5.8	3.6	2.0
P0175.030-010-SI	M 3	10	1.86	1.1	5.8	3.6	2.0
P0175.030-012-SI	M 3	12	1.86	1.1	5.8	3.6	2.0
P0175.030-020-SI	M 3	20	1.86	1.1	5.8	3.6	2.0
P0175.040-006-SI	M 4	6	2.48	1.5	7.8	4.5	2.5
P0175.040-008-SI	M 4	8	2.48	1.5	7.8	4.5	2.5
P0175.040-010-SI	M 4	10	2.48	1.5	7.8	4.5	2.5
P0175.040-012-SI	M 4	12	2.48	1.5	7.8	4.5	2.5
P0175.040-016-SI	M 4	16	2.48	1.5	7.8	4.5	2.5
P0175.040-020-SI	M 4	20	2.48	1.5	7.8	4.5	2.5
P0175.050-008-SI	M 5	8	3.10	1.8	9.7	5.6	3.0
P0175.050-010-SI	M 5	10	3.10	1.8	9.7	5.6	3.0
P0175.050-012-SI	M 5	12	3.10	1.8	9.7	5.6	3.0
P0175.050-016-SI	M 5	16	3.10	1.8	9.7	5.6	3.0
P0175.050-020-SI	M 5	20	3.10	1.8	9.7	5.6	3.0
P0175.060-012-SI	M 6	12	3.72	2.4	11.8	6.8	4.0
P0175.060-016-SI	M 6	16	3.72	2.4	11.8	6.8	4.0
P0175.060-020-SI	M 6	20	3.72	2.4	11.8	6.8	4.0
P0175.060-025-SI	M 6	25	3.72	2.4	11.8	6.8	4.0
P0175.060-030-SI	M 6	30	3.72	2.4	11.8	6.8	4.0
P0175.080-012-SI	M 8	12	4.96	3.0	15.8	8.5	5.0
P0175.080-016-SI	M 8	16	4.96	3.0	15.8	8.5	5.0
P0175.080-020-SI	M 8	20	4.96	3.0	15.8	8.5	5.0



# Integral Seal Bolts

hexagon head

# Sealing Screws



**P0176**

ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303 1.4305 tensile strength 550 N/mm<sup>2</sup> or AISI 316 1.440 tensile strength 480 N/mm<sup>2</sup>), with silicone „O“ ring as standard.

### See page 40 for O-Ring material options.

(-FS = fluorosilicone, -EP = EPDM, -VI = viton, -NI = nitrile, -BN = Buna etc.).

Other thread lengths on request.

### Technical Notes

Clearance holes recommended for maximum sealing, seals substances in and contaminants out.

Max temperature range: -100°C to +260°C, pressure range - up to 410 bar (6000 psi).

Re-useable, also available (on request) with thread-locking.

### Tips

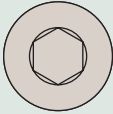

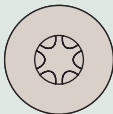
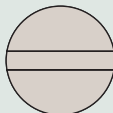
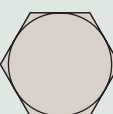
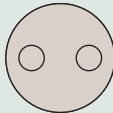
Clearance holes recommended for maximum sealing performance (see dimensions below).

Clearance hole depth 2-3 x thread pitch, threads are metric coarse pitch.

Order No.	d <sub>1</sub>	l <sub>1</sub>	A/F	h <sub>1</sub> max.	d <sub>2</sub> ±0.05	Material
P0176.020-004	M 2	4	4.0	1.6	2.35	A2 s/s
P0176.020-008	M 2	8	4.0	1.6	2.35	A2 s/s
P0176.020-010	M 2	10	4.0	1.6	2.35	A2 s/s
P0176.020-012	M 2	12	4.0	1.6	2.35	A2 s/s
P0176.020-020	M 2	20	4.0	1.6	2.35	A2 s/s
P0176.030-006	M 3	6	5.5	2.2	3.6	A2 s/s
P0176.030-008	M 3	8	5.5	2.2	3.6	A2 s/s
P0176.030-010	M 3	10	5.5	2.2	3.6	A2 s/s
P0176.030-012	M 3	12	5.5	2.2	3.6	A2 s/s
P0176.030-020	M 3	20	5.5	2.2	3.6	A2 s/s
P0176.040-006	M 4	6	7.0	3.0	4.5	A2 s/s
P0176.040-008	M 4	8	7.0	3.0	4.5	A2 s/s
P0176.040-010	M 4	10	7.0	3.0	4.5	A2 s/s
P0176.040-012	M 4	12	7.0	3.0	4.5	A2 s/s
P0176.040-016	M 4	16	7.0	3.0	4.5	A2 s/s
P0176.040-020	M 4	20	7.0	3.0	4.5	A2 s/s
P0176.050-008	M 5	8	8.0	3.7	5.6	A2 s/s
P0176.050-010	M 5	10	8.0	3.7	5.6	A2 s/s
P0176.050-012	M 5	12	8.0	3.7	5.6	A2 s/s
P0176.050-016	M 5	16	8.0	3.7	5.6	A2 s/s
P0176.050-020	M 5	20	8.0	3.7	5.6	A2 s/s
P0176.060-012	M 6	12	10.0	4.2	6.8	A2 s/s
P0176.060-016	M 6	16	10.0	4.2	6.8	A2 s/s
P0176.060-020	M 6	20	10.0	4.2	6.8	A2 s/s
P0176.060-025	M 6	25	10.0	4.2	6.8	A2 s/s
P0176.060-030	M 6	30	10.0	4.2	6.8	A2 s/s
P0176.080-012	M 8	12	13.0	5.5	8.5	A2 s/s
P0176.080-016	M 8	16	13.0	5.5	8.5	A2 s/s

# SEALING SCREWS

## DRIVE TYPES AND O-RING SELECTION

Schematic	Drive Types	Uses
	Hexagonal Socket	Ideal for precision assembly. Most recommended where less surface area is available.
	Cross Drive (Phillips®)	Provides good control in driving. Always use a driver bit of the proper size which is in good condition.
	Hexalobular (Torx®)	Positive-engaging, fast-locating method which transmits drive torque with less required downward pressure. Good fastening appearance.
	Slotted	Accepts standard blade screwdriver. Requires less downward pressure to drive parts than those with recessed openings. Use proper fitting blade to minimize slippage.
	Hex flange	Accepts hex wrench. Slotted drive is added to make it easier to remove the fastener (if required).
	Security	These screws are impossible to remove without the special matching screwdriver.

We can provide Torx® heads and security/tamper-proof screws, as well as special threads, grooves and cross holes for safety wires, and a further range of styles such as captive screws, anti-vibration strips on the threads etc (for extreme vibration applications).

### O Ring Selection

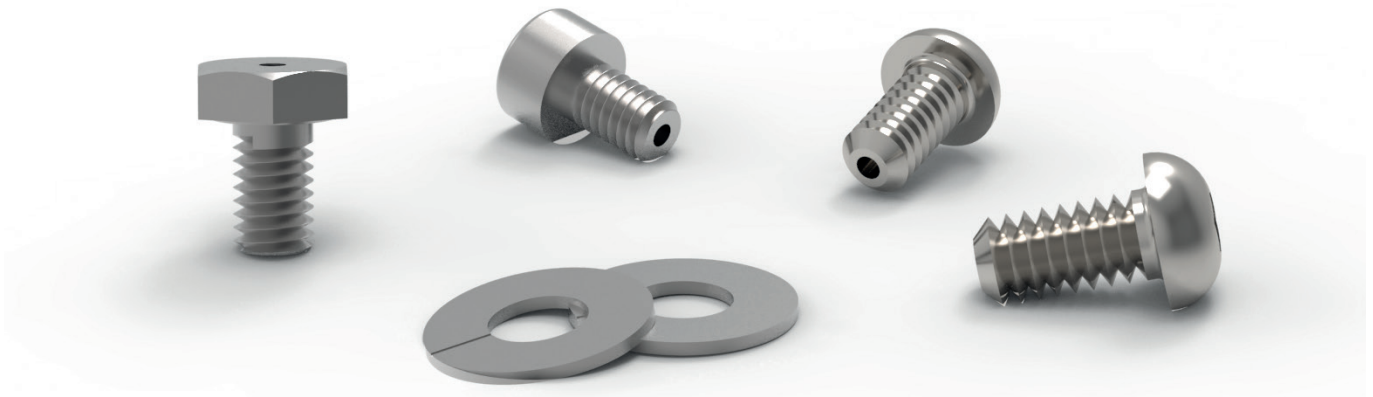
Standard O rings are red silicone, but a further five O ring material types are readily available. The main factor to consider when selection an O ring type is the environment in which it will be placed, and the temperature range it will be subjected to.

Material	Notes
<b>Silicone (SI)</b>	Our standard O ring type with a wide temperature range -60°C to +200°C. Resistant to moderate or oxidising chemical, but not generally oil or solvent resistant.
<b>Fluorosilicone (FS)</b>	Widely used in the automotive and aerospace industries as it has excellent resistance to fuel, oil and solvents. Standard temperature range -50°C to +170°C.
<b>EPDM (EP)</b>	These O rings are very suited for outdoor environments and are good for weather and water resistance applications having excellent ozone, steam and chemical resistance. Temperature range -50°C to +110°C.
<b>Viton-fluorocarbon (VI)</b>	These seals are widely used on aircraft engines and automotive fuel handling systems as they have excellent fuel, oil and solvent resistance. Standard temperature range -50°C to +200°C
<b>Nitrile (NI)</b>	Widely used as highly resistant to petroleum based substances, water and alcohols. Temperature range -50°C to +110°C.

Other O rings types can include Neoprene, Buna N, Teflon etc.

# AN INTRODUCTION TO VENTED SCREWS

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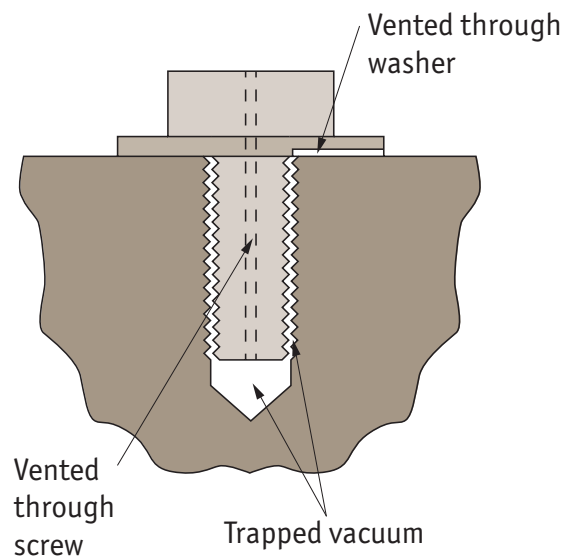


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## WHAT IS A VENTED SCREW?

Vented screws have a hole drilled through the centre to allow for the release of gasses and pressure, typically in vacuum applications.

A blind tapped hole inside a vacuum system leaves residual air space at the bottom that cannot be fully evacuated in the vacuum cycle when a bolt, screw, or other fastener is threaded into the hole. The screw itself is a helix with a large surface area also containing voids of trapped air. This produces virtual leaks. Vented screws and fasteners ensure direct ventilation of these voids, allowing the trapped volumes of air within the threads and at the bottoms of the holes to be fully evacuated. This speeds pump-down and helps improve system performance.



## VENTED SCREWS

VIEW THE FULL RANGE



Vented screws are purpose-built for applications where trapped air bubbles pose challenges, such as in vacuum systems and clean rooms. The vent allows trapped air under the screw to be released quickly. Therefore, systems that are subjected to vacuum conditions can reach low pressures more quickly and remain at low pressures more effectively. All products are ultrasonically cleaned to meet the cleanliness requirements of vacuum environments. Additionally, coatings are offered to reduce seizing or galling in vented screws.



 AN ESSENTRA COMPANY





### Cap Head - P0090

Available in 303 and 316 stainless steel.

 AN ESSENTRA COMPANY





### Hex. Head - P0091

Available in 303 and 316 stainless steel.

 AN ESSENTRA COMPANY





### Socket Button Head - P0094

Available in 303 and 316 stainless steel.





# Vented Screws - Cap Head

hex. drive

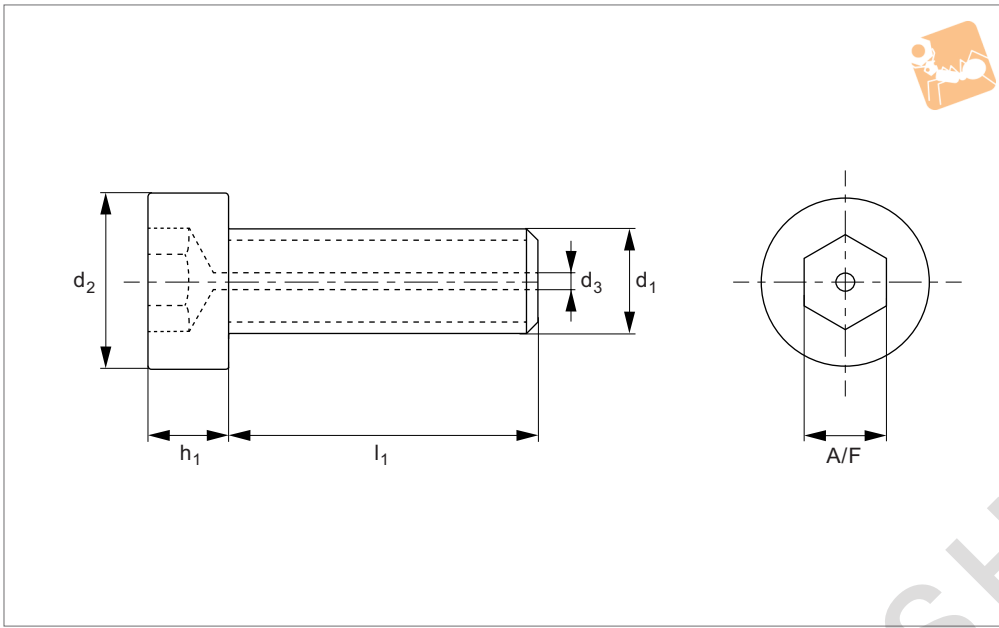
## Vented Screws



MADE IN BRITAIN

P0090

VENTED SCREWS



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 304, 1.4301), strength class 60.  
Ultrasonically cleaned. **Suffix A4 or A2 onto the end of your part number for material type. E.g. P0090.020-004-A4**

for 316 stainless.

### Technical Notes

To DIN 912 (with central vent), precision cleaned. Other sizes available on request.

### Tips

These products help eliminate virtual leaks

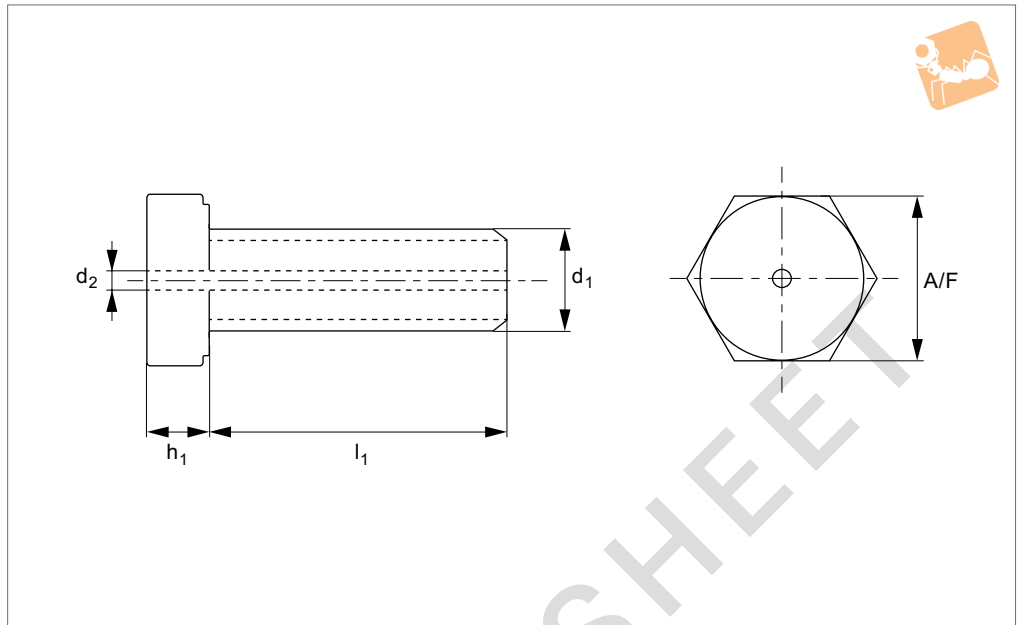
from high vacuum (HV and UHV) systems, thereby improving pump-down times. Trapped gases at the bottom of a tapped hole are able to escape via the central vent in the middle of the screw.

Order No.	$l_1$	$d_1$	$d_2$	$d_3$	$h_1$	A/F
P0090.020-004	4	M 2	3.8	0.7	2.0	1.5
P0090.020-005	5	M 2	3.8	0.7	2.0	1.5
P0090.020-006	6	M 2	3.8	0.7	2.0	1.5
P0090.020-008	8	M 2	3.8	0.7	2.0	1.5
P0090.020-010	10	M 2	3.8	0.7	2.0	1.5
P0090.020-012	12	M 2	3.8	0.7	2.0	1.5
P0090.020-016	16	M 2	3.8	0.7	2.0	1.5
P0090.025-004	4	M 2,5	4.5	0.9	2.5	2.0
P0090.025-005	5	M 2,5	4.5	0.9	2.5	2.0
P0090.025-006	6	M 2,5	4.5	0.9	2.5	2.0
P0090.025-008	8	M 2,5	4.5	0.9	2.5	2.0
P0090.025-010	10	M 2,5	4.5	0.9	2.5	2.0
P0090.025-012	12	M 2,5	4.5	0.9	2.5	2.0
P0090.025-016	16	M 2,5	4.5	0.9	2.5	2.0
P0090.025-020	20	M 2,5	4.5	0.9	2.5	2.0
P0090.030-005	5	M 3	5.5	1.0	3.0	3.0
P0090.030-006	6	M 3	5.5	1.0	3.0	3.0
P0090.030-008	8	M 3	5.5	1.0	3.0	3.0
P0090.030-010	10	M 3	5.5	1.0	3.0	3.0
P0090.030-012	12	M 3	5.5	1.0	3.0	3.0
P0090.030-016	16	M 3	5.5	1.0	3.0	3.0
P0090.040-005	5	M 4	7.0	1.0	4.0	3.0
P0090.040-006	6	M 4	7.0	1.0	4.0	3.0
P0090.040-008	8	M 4	7.0	1.0	4.0	3.0
P0090.040-010	10	M 4	7.0	1.0	4.0	3.0
P0090.040-012	12	M 4	7.0	1.0	4.0	3.0
P0090.040-016	16	M 4	7.0	1.0	4.0	3.0
P0090.040-020	20	M 4	7.0	1.0	4.0	3.0
P0090.040-025	25	M 4	7.0	1.0	4.0	3.0
P0090.040-030	30	M 4	7.0	1.0	4.0	3.0
P0090.040-035	35	M 4	7.0	1.0	4.0	3.0
P0090.050-006	6	M 5	8.5	1.3	5.0	4.0



MADE IN BRITAIN

**P0091**



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

**Material**

Stainless steel (AISI 304, 1.4301), strength class 60.

Ultrasonically cleaned. **Suffix A2 or A4 onto the end of your part number for material type e.g. P0091.030-005-A2 for 304 stainless.**

**Technical Notes**

To DIN 933 (with central vent). Other sizes available on request.

**Tips**

These products help eliminate virtual leaks from high vacuum (HV and UHV) systems, thereby improving pump-down times.

Trapped gases at the bottom of a tapped hole are able to escape via the central vent down the middle of the screw.

Order No.	$l_1$	$d_1$	$d_2$	$h_1$	A/F
P0091.030-005	5	M 3	1.0	2.0	6
P0091.030-006	6	M 3	1.0	2.0	6
P0091.030-008	8	M 3	1.0	2.0	6
P0091.030-010	10	M 3	1.0	2.0	6
P0091.030-012	12	M 3	1.0	2.0	6
P0091.030-016	16	M 3	1.0	2.0	6
P0091.040-005	5	M 4	1.0	2.8	7
P0091.040-006	6	M 4	1.0	2.8	7
P0091.040-008	8	M 4	1.0	2.8	7
P0091.040-010	10	M 4	1.0	2.8	7
P0091.040-012	12	M 4	1.0	2.8	7
P0091.040-016	16	M 4	1.0	2.8	7
P0091.040-020	20	M 4	1.0	2.8	7
P0091.040-025	25	M 4	1.0	2.8	7
P0091.040-030	30	M 4	1.0	2.8	7
P0091.040-035	35	M 4	1.0	2.8	7
P0091.050-006	6	M 5	1.3	3.5	8
P0091.050-008	8	M 5	1.3	3.5	8
P0091.050-010	10	M 5	1.3	3.5	8
P0091.050-012	12	M 5	1.3	3.5	8
P0091.050-016	16	M 5	1.3	3.5	8
P0091.050-020	20	M 5	1.3	3.5	8
P0091.050-025	25	M 5	1.3	3.5	8
P0091.050-030	30	M 5	1.3	3.5	8
P0091.050-035	35	M 5	1.3	3.5	8
P0091.050-040	40	M 5	1.3	3.5	8
P0091.060-008	8	M 6	1.6	4.0	10
P0091.060-010	10	M 6	1.6	4.0	10
P0091.060-012	12	M 6	1.6	4.0	10
P0091.060-016	16	M 6	1.6	4.0	10
P0091.060-020	20	M 6	1.6	4.0	10
P0091.060-025	25	M 6	1.6	4.0	10



# Vented Screws - Socket Button Head

hex. drive

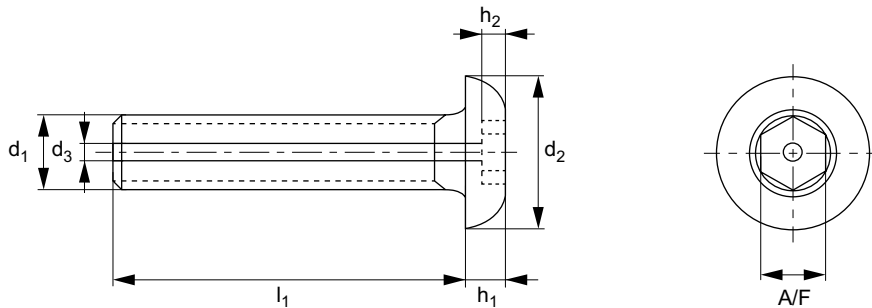
## Vented Screws



MADE IN BRITAIN

P0094

VENTED SCREWS



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 316, 1.4401), strength class 50.  
Ultrasonically cleaned. **Suffix A2 or A4 onto the end of your part number for material type. E.g. P0094.030-005-A2**

for 304 stainless.

### Technical Notes

To ISO 7380 (with central vent). Other sizes available on request.

### Tips

These products help eliminate virtual leaks

from high vacuum (HV and UHV) systems, thereby improving pump-down times. Trapped gases at the bottom of a tapped hole are able to escape via the central vent down the middle of the screw.

Order No.	$l_1$	$d_1$	$d_2$	$d_3$	$h_1$	$h_2$	A/F
P0094.030-005	5	M 3	5.7	1.0	1.7	1.0	2
P0094.030-006	6	M 3	5.7	1.0	1.7	1.0	2
P0094.030-008	8	M 3	5.7	1.0	1.7	1.0	2
P0094.030-010	10	M 3	5.7	1.0	1.7	1.0	2
P0094.030-012	12	M 3	5.7	1.0	1.7	1.0	2
P0094.030-016	16	M 3	5.7	1.0	1.7	1.0	2
P0094.040-005	5	M 4	7.6	1.0	2.2	1.3	3
P0094.040-006	6	M 4	7.6	1.0	2.2	1.3	3
P0094.040-008	8	M 4	7.6	1.0	2.2	1.3	3
P0094.040-010	10	M 4	7.6	1.0	2.2	1.3	3
P0094.040-012	12	M 4	7.6	1.0	2.2	1.3	3
P0094.040-016	16	M 4	7.6	1.0	2.2	1.3	3
P0094.040-020	20	M 4	7.6	1.0	2.2	1.3	3
P0094.040-025	25	M 4	7.6	1.0	2.2	1.3	3
P0094.040-030	30	M 4	7.6	1.0	2.2	1.3	3
P0094.040-035	35	M 4	7.6	1.0	2.2	1.3	3
P0094.050-006	6	M 5	9.5	1.3	2.8	1.6	3
P0094.050-008	8	M 5	9.5	1.3	2.8	1.6	3
P0094.050-010	10	M 5	9.5	1.3	2.8	1.6	3
P0094.050-012	12	M 5	9.5	1.3	2.8	1.6	3
P0094.050-016	16	M 5	9.5	1.3	2.8	1.6	3
P0094.050-020	20	M 5	9.5	1.3	2.8	1.6	3
P0094.050-025	25	M 5	9.5	1.3	2.8	1.6	3
P0094.050-030	30	M 5	9.5	1.3	2.8	1.6	3
P0094.050-035	35	M 5	9.5	1.3	2.8	1.6	3
P0094.050-040	40	M 5	9.5	1.3	2.8	1.6	3
P0094.060-008	8	M 6	10.5	1.6	3.3	2.1	4
P0094.060-010	10	M 6	10.5	1.6	3.3	2.1	4
P0094.060-012	12	M 6	10.5	1.6	3.3	2.1	4
P0094.060-016	16	M 6	10.5	1.6	3.3	2.1	4
P0094.060-020	20	M 6	10.5	1.6	3.3	2.1	4
P0094.060-025	25	M 6	10.5	1.6	3.3	2.1	4

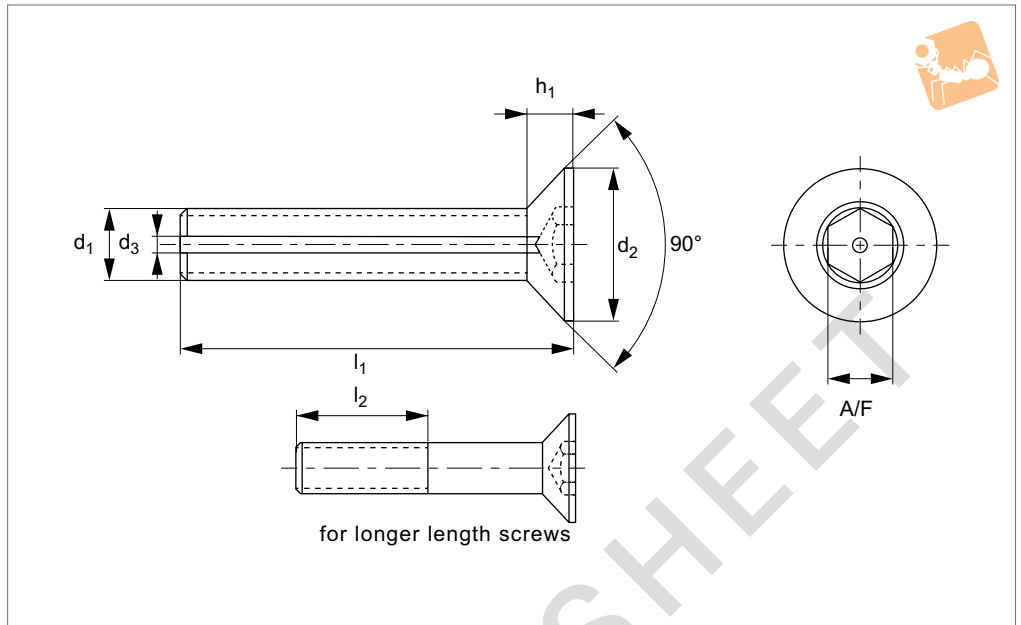


VENTED SCREWS



MADE IN BRITAIN

## P0093



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 304, 1.4301), strength class 60. **Suffix part number with A2 or A4 for required material type.**  
E.g P0093.020-004-A2 = 303 stainless.

### Technical Notes

To ISO 10642 with central vent.

### Tips

These products help eliminate virtual leaks from high vacuum (HV and UHV) systems,

thereby improving pump-down times.

Trapped gases at the bottom of a tapped hole are able to escape via the central vent down the middle of the screw.

Order No.	$l_1$	$d_1$	$d_2$	$d_3$	$h_1$	$l_2$	A/F
P0093.020-004	4	M 2	3.8	0.8	1.3	-	1.3
P0093.020-005	5	M 2	3.8	0.8	1.3	-	1.3
P0093.020-006	6	M 2	3.8	0.8	1.3	-	1.3
P0093.020-008	8	M 2	3.8	0.8	1.3	-	1.3
P0093.020-010	10	M 2	3.8	0.8	1.3	-	1.3
P0093.020-012	12	M 2	3.8	0.8	1.3	-	1.3
P0093.025-004	4	M2,5	4.8	0.9	1.9	-	1.5
P0093.025-005	5	M2,5	4.8	0.9	1.9	-	1.5
P0093.025-006	6	M2,5	4.8	0.9	1.9	-	1.5
P0093.025-008	8	M2,5	4.8	0.9	1.9	-	1.5
P0093.025-010	10	M2,5	4.8	0.9	1.9	-	1.5
P0093.025-012	12	M2,5	4.8	0.9	1.9	-	1.5
P0093.030-005	5	M 3	6.0	1.0	1.7	-	2.0
P0093.030-006	6	M 3	6.0	1.0	1.7	-	2.0
P0093.030-008	8	M 3	6.0	1.0	1.7	-	2.0
P0093.030-010	10	M 3	6.0	1.0	1.7	-	2.0
P0093.030-012	12	M 3	6.0	1.0	1.7	-	2.0
P0093.030-016	16	M 3	6.0	1.0	1.7	12	2.0
P0093.040-005	5	M 4	8.0	1.0	2.3	-	2.5
P0093.040-006	6	M 4	8.0	1.0	2.3	-	2.5
P0093.040-008	8	M 4	8.0	1.0	2.3	-	2.5
P0093.040-010	10	M 4	8.0	1.0	2.3	-	2.5
P0093.040-012	12	M 4	8.0	1.0	2.3	-	2.5
P0093.040-016	16	M 4	8.0	1.0	2.3	14	2.5
P0093.040-020	20	M 4	8.0	1.0	2.3	14	2.5
P0093.040-025	25	M 4	8.0	1.0	2.3	14	2.5
P0093.040-030	30	M 4	8.0	1.0	2.3	14	2.5
P0093.040-035	35	M 4	8.0	1.0	2.3	14	2.5
P0093.050-006	6	M 5	10.0	1.3	2.8	-	3.0
P0093.050-008	8	M 5	10.0	1.3	2.8	-	3.0
P0093.050-010	10	M 5	10.0	1.3	2.8	-	3.0
P0093.050-012	12	M 5	10.0	1.3	2.8	-	3.0
P0093.050-016	16	M 5	10.0	1.3	2.8	-	3.0

## LOW HEAD SCREWS

### What are Low Head Screws?

Low head screws, crucial in weight-sensitive applications like aerospace, provide minimal weight and reduced drag. Unlike traditional countersunk screws requiring a minimum metal depth for head recess, our innovative low head profile screws allow for the use of thinner panels, saving weight and ensuring a flush fit with the surface, with thicknesses as minimal as 0.5mm. Available in hex or TX versions, these screws provide a streamlined solution for applications requiring both lightweight design and reduced aerodynamic resistance.



VIEW THE FULL RANGE



 Automotion  
AN ESSENTRA COMPANY



MADE IN  
BRITAIN

#### Extra Low Head Cap Screws - P0207

Available in the following materials: 303 stainless & 316 stainless, blackened 303 & 316 stainless and titanium.

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MADE IN  
BRITAIN

#### Ultra Low Head Cap Screws - P0208

Available in the following materials: 303 stainless & 316 stainless, blackened 303 & 316 stainless and titanium.

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MADE IN  
BRITAIN

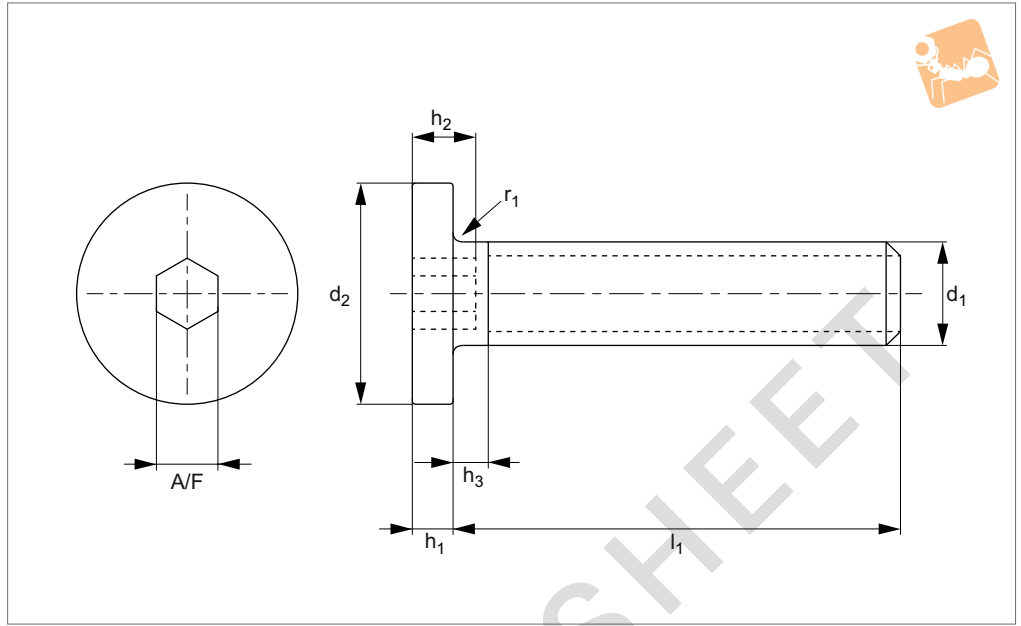
#### Ultra Low Head Cap Screws - P0209

Available in the following materials: 303 stainless & 316 stainless and blackened 303 & 316 stainless.





**P0207**



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

**Material**

Stainless steel (AISI 303, 1.4305).  
Tensile strength ~ 400N/mm<sup>2</sup>  
(except for M2 ~ 220N/mm<sup>2</sup>).

Suffix part number with A2, A4, B2, B4 or

Ti for required material type. E.g.  
P0207.020-003-A2 = 303 stainless.

**Technical Notes**

Extra low head cap screws reduce the screw

head height space. They require no countersinking unlike flat head screws.

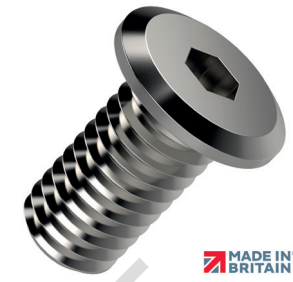
Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub> max.	h <sub>3</sub> max.	l <sub>1</sub>	r <sub>1</sub>	A/F	Torque to Nm max.
P0207.020-003	M 2	4	1.5	1.2	1.2	3	0.10	1.3	0.16
P0207.020-004	M 2	4	1.5	1.2	1.2	4	0.10	1.3	0.16
P0207.020-005	M 2	4	1.5	1.2	1.2	5	0.10	1.3	0.16
P0207.020-006	M 2	4	1.5	1.2	1.2	6	0.10	1.3	0.16
P0207.020-008	M 2	4	1.5	1.2	1.2	8	0.10	1.3	0.16
P0207.020-010	M 2	4	1.5	1.2	1.2	10	0.10	1.3	0.16
P0207.020-012	M 2	4	1.5	1.2	1.2	12	0.10	1.3	0.16
P0207.025-003	M 2,5	5	1.5	1.5	1.5	3	0.10	1.3	0.35
P0207.025-004	M 2,5	5	1.5	1.5	1.5	4	0.10	1.3	0.35
P0207.025-005	M 2,5	5	1.5	1.5	1.5	5	0.10	1.3	0.35
P0207.025-006	M 2,5	5	1.5	1.5	1.5	6	0.10	1.3	0.35
P0207.025-008	M 2,5	5	1.5	1.5	1.5	8	0.10	1.3	0.35
P0207.025-010	M 2,5	5	1.5	1.5	1.5	10	0.10	1.3	0.35
P0207.025-012	M 2,5	5	1.5	1.5	1.5	12	0.10	1.3	0.35
P0207.030-004	M 3	6	1.5	2.0	1.6	4	0.10	1.5	0.60
P0207.030-005	M 3	6	1.5	2.0	1.6	5	0.10	1.5	0.60
P0207.030-006	M 3	6	1.5	2.0	1.6	6	0.10	1.5	0.60
P0207.030-008	M 3	6	1.5	2.0	1.6	8	0.10	1.5	0.60
P0207.030-010	M 3	6	1.5	2.0	1.6	10	0.10	1.5	0.60
P0207.030-012	M 3	6	1.5	2.0	1.6	12	0.10	1.5	0.60
P0207.030-014	M 3	6	1.5	2.0	1.6	14	0.10	1.5	0.60
P0207.030-016	M 3	6	1.5	2.0	1.6	16	0.10	1.5	0.60
P0207.040-005	M 4	8	1.5	2.5	1.6	5	0.20	2.0	1.10
P0207.040-006	M 4	8	1.5	2.5	1.6	6	0.20	2.0	1.10
P0207.040-008	M 4	8	1.5	2.5	1.6	8	0.20	2.0	1.10
P0207.040-010	M 4	8	1.5	2.5	1.6	10	0.20	2.0	1.10
P0207.040-012	M 4	8	1.5	2.5	1.6	12	0.20	2.0	1.10
P0207.040-014	M 4	8	1.5	2.5	1.6	14	0.20	2.0	1.10
P0207.040-016	M 4	8	1.5	2.5	1.6	16	0.20	2.0	1.10
P0207.040-018	M 4	8	1.5	2.5	1.6	18	0.20	2.0	1.10
P0207.040-020	M 4	8	1.5	2.5	1.6	20	0.20	2.0	1.10
P0207.050-006	M 5	9	1.5	3.0	2.0	6	0.20	3.0	2.20
P0207.050-008	M 5	9	1.5	3.0	2.0	8	0.20	3.0	2.20



# Ultra Low Head Cap Screws

hex. drive

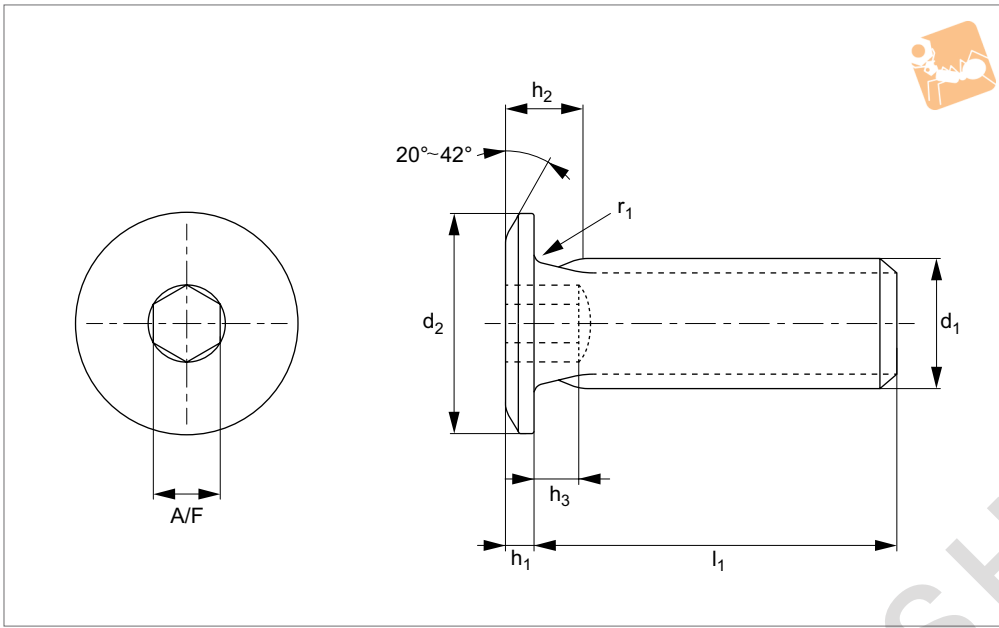
# Standard Screws



P0208

MADE IN BRITAIN

STANDARD SCREWS



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

### Material

Stainless steel (AISI 303, 1.4305).  
Tensile strength ~350N/mm<sup>2</sup>  
(except for M2 ~200N/mm<sup>2</sup>).

Suffix part number with A2, A4, B2, B4 or Ti for required material type.

### Technical Notes

The ultra low head is extremely low profile.

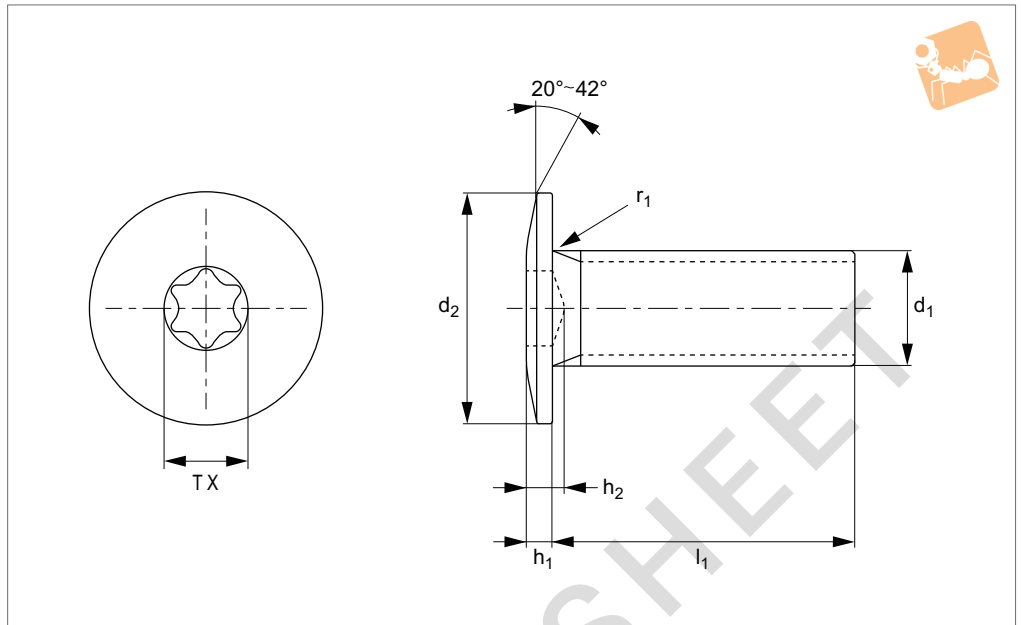
These screws do not require a countersunk location hole. Most suitable for machine and equipment applications with minimal clearance.

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub> max.	h <sub>3</sub> max.	l <sub>1</sub>	r <sub>1</sub> min.	A/F	Torque to Nm max.
P0208.020-003	M 2	4	0.5	1.2	1.2	3	0.10	1.3	0.16
P0208.020-004	M 2	4	0.5	1.2	1.2	4	0.10	1.3	0.16
P0208.020-005	M 2	4	0.5	1.2	1.2	5	0.10	1.3	0.16
P0208.020-006	M 2	4	0.5	1.2	1.2	6	0.10	1.3	0.16
P0208.020-008	M 2	4	0.5	1.2	1.2	8	0.10	1.3	0.16
P0208.020-010	M 2	4	0.5	1.2	1.2	10	0.10	1.3	0.16
P0208.025-003	M 2,5	5	0.6	1.5	1.2	3	0.10	1.3	0.35
P0208.025-004	M 2,5	5	0.6	1.5	1.2	4	0.10	1.3	0.35
P0208.025-005	M 2,5	5	0.6	1.5	1.2	5	0.10	1.3	0.35
P0208.025-006	M 2,5	5	0.6	1.5	1.2	6	0.10	1.3	0.35
P0208.030-005	M 3	6	0.8	2.0	1.4	5	0.10	1.5	0.60
P0208.030-006	M 3	6	0.8	2.0	1.4	6	0.10	1.5	0.60
P0208.030-008	M 3	6	0.8	2.0	1.4	8	0.10	1.5	0.60
P0208.030-010	M 3	6	0.8	2.0	1.4	10	0.10	1.5	0.60
P0208.030-012	M 3	6	0.8	2.0	1.4	12	0.10	1.5	0.60
P0208.030-016	M 3	6	0.8	2.0	1.4	16	0.10	1.5	0.60
P0208.040-005	M 4	8	0.9	2.5	1.5	5	0.20	2.0	1.10
P0208.040-006	M 4	8	0.9	2.5	1.5	6	0.20	2.0	1.10
P0208.040-008	M 4	8	0.9	2.5	1.5	8	0.20	2.0	1.10
P0208.040-010	M 4	8	0.9	2.5	1.5	10	0.20	2.0	1.10
P0208.040-012	M 4	8	0.9	2.5	1.5	12	0.20	2.0	1.10
P0208.040-016	M 4	8	0.9	2.5	1.5	16	0.20	2.0	1.10
P0208.040-020	M 4	8	0.9	2.5	1.5	20	0.20	2.0	1.10
P0208.040-025	M 4	8	0.9	2.5	1.5	25	0.20	2.0	1.10
P0208.050-006	M 5	9	1.0	3.0	1.8	6	0.20	2.5	2.20
P0208.050-008	M 5	9	1.0	3.0	1.8	8	0.20	2.5	2.20
P0208.050-010	M 5	9	1.0	3.0	1.8	10	0.20	2.5	2.20
P0208.050-012	M 5	9	1.0	3.0	1.8	12	0.20	2.5	2.20
P0208.050-016	M 5	9	1.0	3.0	1.8	16	0.20	2.5	2.20
P0208.050-020	M 5	9	1.0	3.0	1.8	20	0.20	2.5	2.20
P0208.050-025	M 5	9	1.0	3.0	1.8	25	0.20	2.5	2.20
P0208.060-008	M 6	10	1.2	4.0	2.2	8	0.25	3.0	5.00
P0208.060-010	M 6	10	1.2	4.0	2.2	10	0.25	3.0	5.00



**P0209**

MADE IN BRITAIN



ADDITIONAL SIZES & RANGE OF MATERIALS AVAILABLE

**Material**

Stainless steel (AISI 303, 1.4305).  
Tensile strength ~ 350N/mm<sup>2</sup>  
(except for M2 ~ 200Nmm<sup>2</sup>). **Suffix part**

**number with A2, A4, B2 or B4 for required material type.**

**Technical Notes**

Ultra low head is extremely low profile.

They do not require a countersunk location hole.

Most suitable for machine and equipment applications with minimal clearance.

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub> max.	l <sub>1</sub>	r <sub>1</sub> max.	TX size	Torque Nm max.
P0209.020-003	M 2	4	0.5	1.5	3	0.3	TX-4	0.18
P0209.020-004	M 2	4	0.5	1.5	4	0.3	TX-4	0.18
P0209.020-005	M 2	4	0.5	1.5	5	0.3	TX-4	0.18
P0209.020-006	M 2	4	0.5	1.5	6	0.3	TX-4	0.18
P0209.020-008	M 2	4	0.5	1.5	8	0.3	TX-4	0.18
P0209.020-010	M 2	4	0.5	1.5	10	0.3	TX-4	0.18
P0209.020-012	M 2	4	0.5	1.5	12	0.3	TX-4	0.18
P0209.025-003	M 2,5	6	0.6	1.6	3	0.3	TX-5	0.36
P0209.025-004	M 2,5	6	0.6	1.6	4	0.3	TX-5	0.36
P0209.025-005	M 2,5	6	0.6	1.6	5	0.3	TX-5	0.36
P0209.025-006	M 2,5	6	0.6	1.6	6	0.3	TX-5	0.36
P0209.025-008	M 2,5	6	0.6	1.6	8	0.3	TX-5	0.36
P0209.025-010	M 2,5	6	0.6	1.6	10	0.3	TX-5	0.36
P0209.025-012	M 2,5	6	0.6	1.6	12	0.3	TX-5	0.36
P0209.030-005	M 3	7	0.8	2.0	5	0.4	TX-6	0.63
P0209.030-006	M 3	7	0.8	2.0	6	0.4	TX-6	0.63
P0209.030-008	M 3	7	0.8	2.0	8	0.4	TX-6	0.63
P0209.030-010	M 3	7	0.8	2.0	10	0.4	TX-6	0.63
P0209.030-012	M 3	7	0.8	2.0	12	0.4	TX-6	0.63
P0209.030-016	M 3	7	0.8	2.0	16	0.4	TX-6	0.63
P0209.040-006	M 4	8	0.9	2.5	6	0.5	TX-8	1.50
P0209.040-008	M 4	8	0.9	2.5	8	0.5	TX-8	1.50
P0209.040-010	M 4	8	0.9	2.5	10	0.5	TX-8	1.50
P0209.040-012	M 4	8	0.9	2.5	12	0.5	TX-8	1.50
P0209.040-016	M 4	8	0.9	2.5	16	0.5	TX-8	1.50
P0209.040-020	M 4	8	0.9	2.5	20	0.5	TX-8	1.50
P0209.040-025	M 4	8	0.9	2.5	25	0.5	TX-8	1.50
P0209.050-008	M 5	9	1.0	3.0	8	0.6	TX-10	3.00
P0209.050-010	M 5	9	1.0	3.0	10	0.6	TX-10	3.00
P0209.050-012	M 5	9	1.0	3.0	12	0.6	TX-10	3.00
P0209.050-016	M 5	9	1.0	3.0	16	0.6	TX-10	3.00
P0209.050-020	M 5	9	1.0	3.0	20	0.6	TX-10	3.00
P0209.050-025	M 5	9	1.0	3.0	25	0.6	TX-10	3.00



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