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1. General

- 1.1 The purchase contract will be concluded by a written order and the written order confirmation from the supplier. Offers which do not include a deadline for acceptance will not be binding.

2. Scope of the goods and services

- 2.1 The supplier's goods and services will be listed in the order confirmation. The supplier will anytime be entitled to modify products in order to improve them.

3. Plans, photographs and technical documents

- 3.1 In the absence of any agreement to the contrary, brochures and catalogues will not be binding. Details in technical documents will only be binding if they are expressly guaranteed. Some products are procured from selected first-class sub-suppliers. Published pictures or versions may differ from the sales documents.

4. Regulations in the destination country and safeguards

- 4.1 The purchaser must inform the supplier of the regulations and standards of the country of destination relating to the provision of goods and services, the business and health and safety at work, at the latest when placing the order.
- 4.2 In the absence of any agreement to the contrary, the goods and services will comply with regulations and standards at the registered office of the purchaser, of which the purchaser has informed the supplier in accordance with no. 4.1. Additional or other safeguards will also be provided insofar as this has been agreed.

5. Prices

- 5.1 The price list valid on the date of the order will determine the prices. In the absence of any agreement to the contrary, all prices will be net, ex works, and exclusive of carriage, customs clearance, packaging and VAT and in Swiss Francs or euros, net of any deduction (EXW).
The purchaser will be responsible for all incidental costs, e.g. for freight, insurance, export, transit, import and other licenses and certification. The purchaser will also be responsible for all taxes, charges, fees, duty, etc. of any nature whatsoever which may be raised in connection with the contract or refund them to the supplier on production of corresponding evidence, if the latter has become liable for payment thereof.
- 5.2 The supplier reserves the right to amend the prices, should there be a change in rates of pay, prices of materials or suppliers' prices between the date of the order and performance in accordance with the contract.

6. Payment terms

- 6.1 In the absence of any express agreement, prepayment will be due upon readiness to delivery.
- 6.2 Otherwise, the payment deadline for contracting partners will be 30 days net from the date of the invoice, in the absence of any agreement to the contrary. In the event of arrears of payment, the purchaser must anticipate 8% interest on arrears from the date on which payment is due. The right to claim further compensation remains reserved.

7. Reservation of title

- 7.1 The supplier will retain title to all its goods until it has received full payments in accordance with the contract. The purchaser authorises with the signing of the order and so the acceptance of these General Terms and Conditions of Delivery the supplier, if necessary with the regulations of the country of destination, to register such a retention of title in the appropriate register.

8. Delivery date / delivery conditions

- 8.1 The supplier will endeavour to deliver the standard products from stock on a specific date. The purchaser must refer to the order confirmation for deliveries with delivery dates.
- 8.2 The EXW delivery terms must be interpreted in accordance with the current applicable Incoterms (currently Incoterms 2000).
- 8.3 The purchaser will have no rights or claims to remuneration as a result of goods or services being late. However, it reserves the right to cancel the contract.
- 8.4 The minimum charge for goods or services is CHF 50.00.

9. Packaging

- 9.1 The supplier will issue a separate invoice for packaging.

10. Inspection and acceptance of goods and services

- 10.1 Insofar as is standard practice, the supplier will inspect the goods and services prior to despatch and guarantees that they are complete and of good quality.
- 10.2 The purchaser must inspect the goods and services within a reasonable period and notify the supplier of any detected defects in writing without delay. Should it fail to do so, the goods and services will be deemed to have been accepted.

- 10.3 The purchaser has a 30-day return, exchange or money-back guarantee for standard list products.

This concerns all standard list products which are purchased regularly, not customized, not used or modified and in their complete, original packaging.

The purchaser will be responsible for the return freight costs.

11. Guarantee, liability for defects

- 11.1 The *guarantee period* is 30 days, as stated in no. 10.3, in the absence of any stipulation to the contrary in the delivery documents or in legislation. The period starts at the date of delivery, respective with the writing of the delivery note.

11.2 *Liability for material defects, design flaws or shortcomings in implementation*

The supplier undertakes to repair or replace any parts of its goods which verifiably become defective or unusable as a result of material defects, design flaws or shortcomings in completion up to the end of the guarantee period, as soon as possible on written demand by the purchaser. Characteristics are only warranted, if they are mentioned expressly in the order confirmation or in the specifications. The confirmation counts until the expiration of the guarantee period. Are the warranted characteristics not, or only partially fulfilled, the purchaser has the right of immediate amendment of the supplier. For this, the purchaser has to afford the supplier the needed time and opportunity.

11.3 *Exclusions of liability for defects*

Damage will be excluded from the supplier's guarantee if it is not verifiably a consequence of poor material, design flaws or shortcomings in completion, e.g. a result of wear and tear, poor maintenance, failure to observe operating instructions, overloading, inappropriate operating resources, chemical or electrolytic effects, structural or installation work not carried out by the supplier, and other reasons for which the supplier is not responsible.

11.4 *Sub-suppliers' goods and services*

The supplier will only guarantee goods and services of sub-suppliers within the scope of the guarantee obligations of the sub-suppliers in question.

12. Exchange procedure

- 12.1 Should the goods supplied not comply with the guarantee undertaking of the supplier / manufacturer / sub-supplier, or should the delivery be incomplete, the following steps must be taken:
- The supplier must be contacted and claims asserted in writing under guarantee for defects or missing or wrongly delivered parts.
 - All returns will undergo a strict incoming goods inspection. Returned goods must be complete, in the original packaging and be accompanied by the appropriate documents, fault reports, guarantee cards and accessories.
- 12.2 The purchaser will be responsible for the return freight costs.
- 12.3 15% of the list price plus repair costs will be charged for outlay for returns which are incomplete or are not defective.
- 12.4 Replacement parts will be charged as standard and the returns credited with a 'Credit Note' after inspection.

13. Preclusion of further liability by the supplier

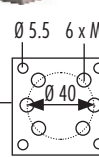
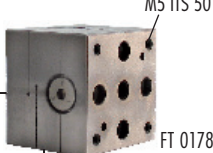
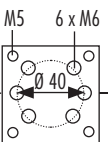
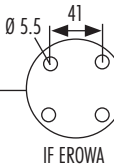
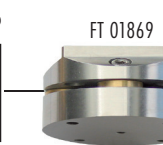
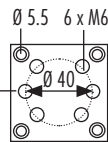
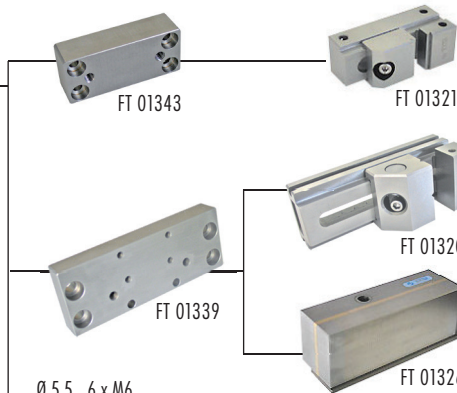
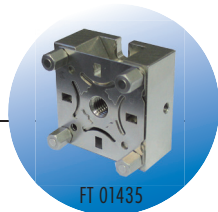
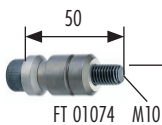
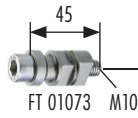
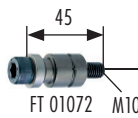
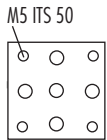
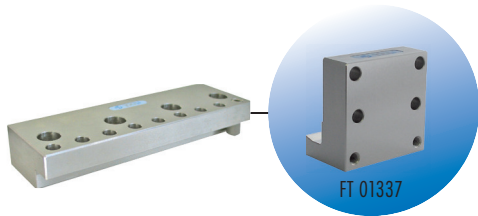
- 13.1 All cases of breach of contract and their legal consequences, and all claims by the customer, irrespective of the legal basis on which they are asserted, are covered conclusively by these terms and conditions. In particular, all claims for compensation, a reduction and cancellation of the contract which are not expressly stipulated are excluded. Under no circumstances will claims for compensation by the customer be valid for damage which does not occur to the delivered item itself, such as loss of production, use, orders, profit or other direct or indirect losses. Preclusion of liability will not apply to unlawful intent or gross negligence of the supplier, but will also apply to unlawful intent or gross negligence of ancillary persons. In other respects, this preclusion of liability will not apply if it is contrary to legislation.

14. Court of jurisdiction and applicable law

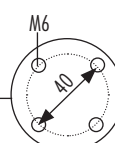
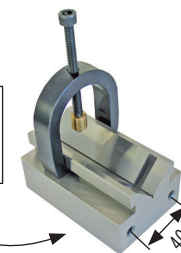
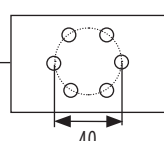
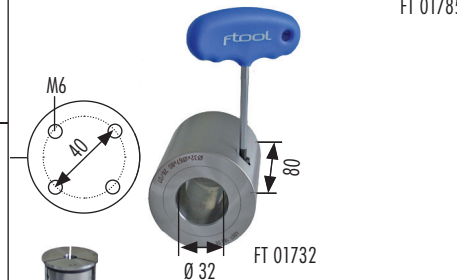
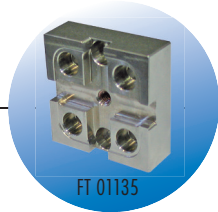
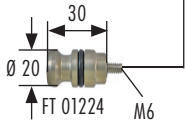
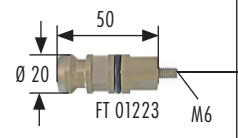
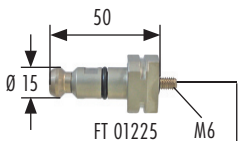
- 14.1 **The court of jurisdiction for the customer and the supplier will be the registered office of the supplier.**
However, the supplier will be entitled to take legal action against the customer at its registered office.
- 14.2 The legal relationship will be governed by substantive Swiss law.

Construct your individual equipment on the basis of your interfaces.

F-Tool Ruler Set Wire Tooling

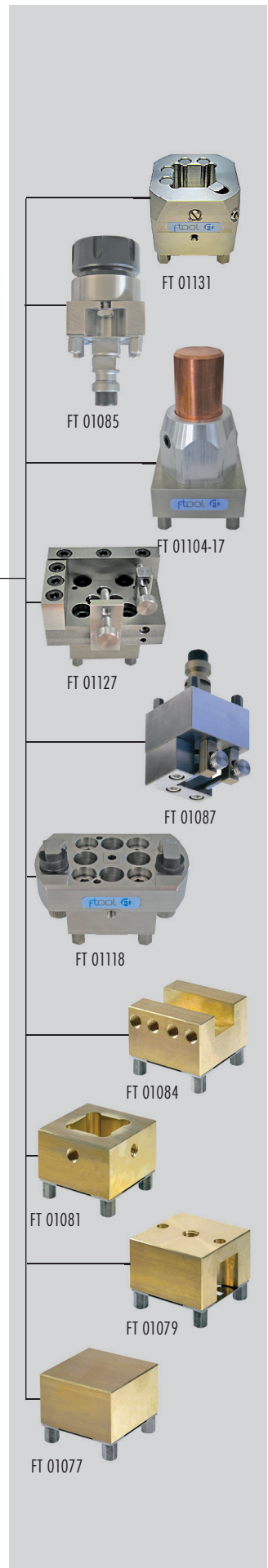
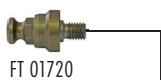


EROWA link



IF3R link

F-Tool PIN System





Clamping unit ER/3R chuck 80

Spare part for the ER chuck 80P and the F-Tool chuck 80 IF3R.

Article no.	Article	Quantity	Weight	Code
FT 01582	Clamping unit ER/IF3R chuck 80	1 piece	0.45 kg	A



Chucking spigot clip open

For the insertion on the ITS electrode holder in the electrode changer with EROWA gripper.

Article no.	Article	Quantity	Weight	Code
FT 01090	Chucking spigot clip open	Set of 20 pieces	0.10 kg	B



Sealing washer

Application: Insertion in prisround for sealing on central flushing.

Article no.	Article	Quantity	Weight	Code
FT 01093	Sealing washer	Set of 24 pieces	0.16 kg	C



O-Ring for rapid-action chuck

Application: Sealing between chucking spigot and rapid-action chuck.

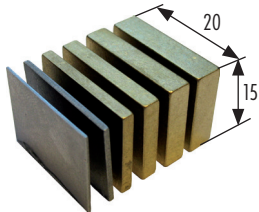
Article no.	Article	Quantity	Weight	Code
FT 01099	O-ring for rapid-action chuck	Set of 50 pieces	0.05 kg	C



Ring piece

Spare part for EROWA chucking spigots.

Article no.	Article	Quantity	Weight	Code
FT 01100	Ring piece	1 piece	0.01 kg	C



Insert plates 0.5 / 1 / 2 / 3 / 4 / 5 mm

Version: Corrosion-resistant, thicknesses from 0.5 to 5 mm.

Application: Centering of blanks in electrode holders.

Article no.	Article	Quantity	Weight	Code
FT 01092	Insert plates 0.5 / 1 / 2 / 3 / 4 / 5 mm	Set of 300 pieces	2.10 kg	C



Hydraulic Spanner 32

The Hydraulic Spanner is suitable for the concentric collet of electrodes or work pieces with a shank diameter of 32 mm. Other diameters can be clamped with suitable reduction plugs. It can be assembled on the ER adapter (FT 01435) or on every other cutting site with 4 or 2 x M6 on circle diameter 40 mm. The rustless execution is able for the water bath.

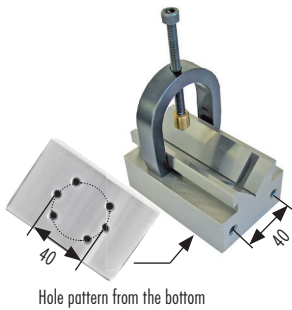
Article no.	Article	Quantity	Weight	Code
FT 01732	FTool Hydraulic Spanner 32	1 piece	1.70 kg	B

Clamping sleeves

The reduction plugs of rustless steel can be inserted into the Hydraulic Spanner.



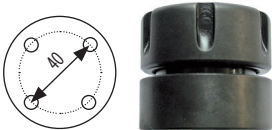
Article no.	Article	Quantity	Weight	Code
FT 01733	Reduction plug 10 mm for Hydraulic Spanner 32	1 piece	0.35 kg	B
FT 01734	Reduction plug 12 mm for Hydraulic Spanner 32	1 piece	0.35 kg	B
FT 01735	Reduction plug 16 mm for Hydraulic Spanner 32	1 piece	0.35 kg	B
FT 01736	Reduction plug 20 mm for Hydraulic Spanner 32	1 piece	0.35 kg	B
	other diameters on request			



F-Tool V-block stainless steel

The V-Block is qualified for the fast clamping of arbors, punches and pushers up to \varnothing 32 mm. It can be assembled frontally or from the back on diverse F-Tool holders. The best compatibility is with the uniplate EWIS (FT 01080), the F-Tool ER-plate EWIS (FT 01435), the F-Tool basic plate 1F3R (FT 01135) and the F-Tool universal index adapter plate 80 with nonius-display (FT 01579). For the application on EDM, WEDM and grinding machines.

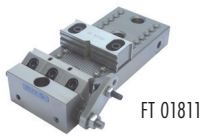
Article no.	Article	Quantity	Weight	Code
FT 01679	FTool V-block rust-resistant	1 piece	1.64 kg	W



Collet chuck holder ETS32

The collet chuck holder ETS32 is rust-resistant and able for the water bath.

Article no.	Article	Quantity	Weight	Code
FT 01581	FTool collet chuck holder ETS32 without adapter plate (corrosion-resist.)	1 piece	0.45 kg	A



FT 01949 FT 01835



FT 01483

F-Tool 5S-PowerSet

The 5S-PowerSet is a wide clamping element set, suited for the 5-side machining of work pieces on 3-axis milling machines. The set contains:

- 1 x FT 01483 Square block chuck 80/PIN chuck with 2 x FT 01043 FTool ER chuck 80P
- 1 x FT 01811 FTool PIN MultiClamp 181 x 72 mm B40, corrosion-resistant
- 2 x FT 01949 FTool Pallet PP148 alu (Power Plate)
- 2 x FT 01835 FTool ER-PowerPlate (individual centering plate for pallets and fixtures)
- 4 x FT 01074 Chucking spigot F/M long without flushing

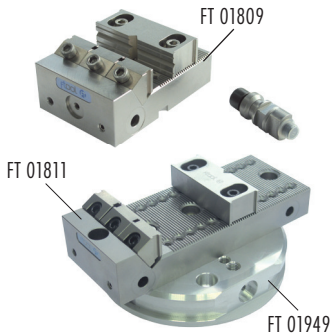
Article no.	Article	Quantity	Weight	Code
FT 02003	FTool 5S-PowerSet	1 Set	18.60 kg	P



F-Tool ER-PowerPlate

Centering plate with P-profile, compatible with FT 01043 FTool ER chuck 80P plus all EROWA chucks with P-profile, EROWA PowerChuck and EROWA ProductionChuck 210 Combi. Highly friction centering. For the direct assembling on pallets and fixtures.

Article no.	Article	Quantity	Weight	Code
FT 01835	FTool ER-PowerPlate	1 piece	0.27 kg	P



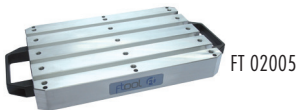
F-Tool Pallet ER-PP148 alu (PowerPlate)

The F-Tool pallet is equipped with the F-Tool PowerPlate and can be used on all EROWA chucks with P centering. For the collet of fixtures and work pieces, the pallet with hole pattern 4 x Ø 9/110 x 50//4 x Ø 9/TK37A) and 4 x M8/D80 is prepared for the assembling of the F-Tool MultiClamp FT 01809 and FT 01811.

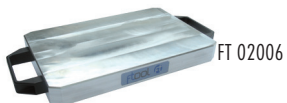
Article no.	Article	Quantity	Weight	Code
FT 01809	FTool PIN MultiClamp 105 x 72 mm B40, corrosion-resistant	1 piece	1.90 kg	P
FT 01810	FTool PIN MultiClamp 105 x 72 mm ITS50, corrosion-resistant	1 piece	1.95 kg	P
FT 01811	FTool PIN MultiClamp 181 x 72 mm B40, corrosion-resistant	1 piece	2.94 kg	P
FT 01949	FTool Pallet ER-PP148 alu (Power Plate)	1 piece	1.41 kg	P



FT 02004



FT 02005

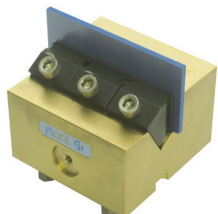


FT 02006

F-Tool T-nut ER-P-Pallet with handles

The F-Tool PP-pallet with handles can be used perfectly on EROWA chucks with P-profile. The T-nut pallet is suited for the collet of work pieces and fixtures. The pallets are equipped with the PowerPlate FT 01835.

Article no.	Article	Quantity	Weight	Code
FT 02004	FTool T-slot PP-Palette 150 x 150 mm	1 piece	2.40 kg	P
FT 02005	FTool T-slot PP-Palette 280 x 180 mm	1 piece	4.30 kg	P
FT 02006	FTool Universal-PP-Palette 280 x 180 mm	1 piece	4.90 kg	P



F-Tool PIN BrassClamp

The F-Tool PIN BrassClamp is a brass retainer with hardened, corrosion-resistant pull-down jaws. If necessary, the stop surface on the holder can be milled to approx. 28 mm. The BrassClamp is supplied as standard with 3 clamping jaws with a clamping range of 0-3 mm. The BrassClamp is suited for use as an electrode (in particular graphite) retainer. However, it can also be used as a precision parts clamp, because the brass jaw can be enlarged precisely.

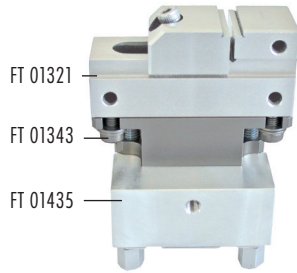
- B40 = prepared for PIN system, 3R adapter plate, T-nuts and grid plate 40 mm/M8. Delivered with screws.
- ITS 50 = equipped with ITS centering plate 50 / EWIS preparation. Delivered with ITS chucking spigot F/A.

Article no.	Article	Quantity	Weight	Code
FT 01807	FTool PIN BrassClamp 72 x 72 mm B40	1 piece	1.85 kg	P
FT 01808	FTool PIN BrassClamp 72 x 72 mm ITS50	1 piece	2.00 kg	P

Clamping elements, swivel block and vises

Clamping elements and interface plates

Adapter for vise 20VL24.



Article no.	Article	Quantity	Weight	Code
FT 01321	FTool vise 20VL24	1 piece	0.26 kg	W
FT 01343	FTool Interface uniplate for vise 20VL24	1 piece	0.22 kg	W
FT 01435	FTool ER-plate EWIS	Set of 10 pieces	4.50 kg	A

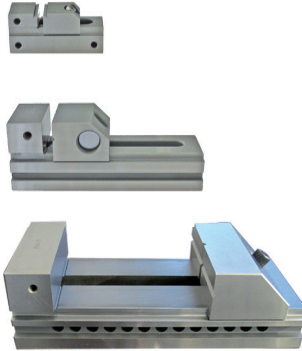
F-Tool vises

Accurate vises made of rustless, hardened, grinded high-grade steel for grinding machines, EDM-, wire EDM- and EDM drilling- machines.

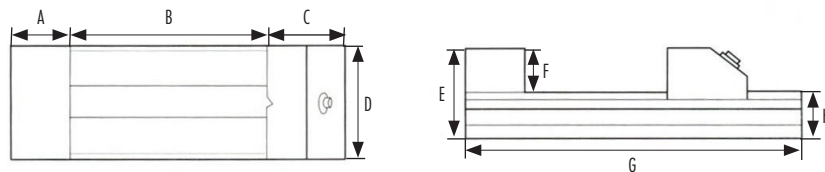
Dimensions FT 01321 (mm): A=20 B=20 C=25 D=24 E=30 F=10 G=64.5 H=19.5

Dimensions FT 01320 (mm): A=25 B=75 C=40 D=50 E=52.5 F=25 G=140 H=28

Dimensions FT 01591 (mm): A=50 B=200 C=90 D=150 E=100 F=50 G=330 H=50

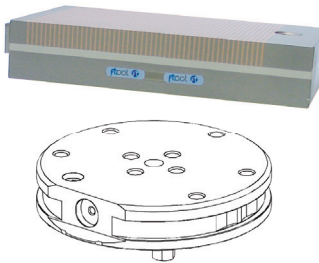


Article no.	Article	Quantity	Weight	Code
FT 01321	FTool vise 20VL24	1 piece	0.26 kg	W
FT 01320	FTool vise 80VL50	1 piece	1.40 kg	W
FT 01591	FTool precision vise 200VL150 rustless steel	1 piece	22.00 kg	B



Magnetic table 250 x 150mm (prepared PIN and ITS 148)

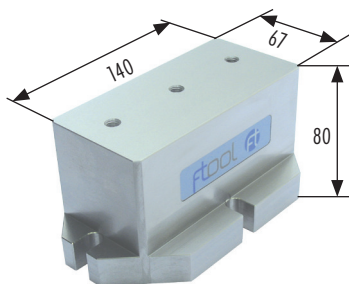
This magnetic table is compatible with the EROWA standard pallets \varnothing 148 mm.



Article no.	Article	Quantity	Weight	Code
FT 01824	Magnetic table 250 x 150 mm (prepared PIN and ITS 148 mm)	1 piece	15.70 kg	B

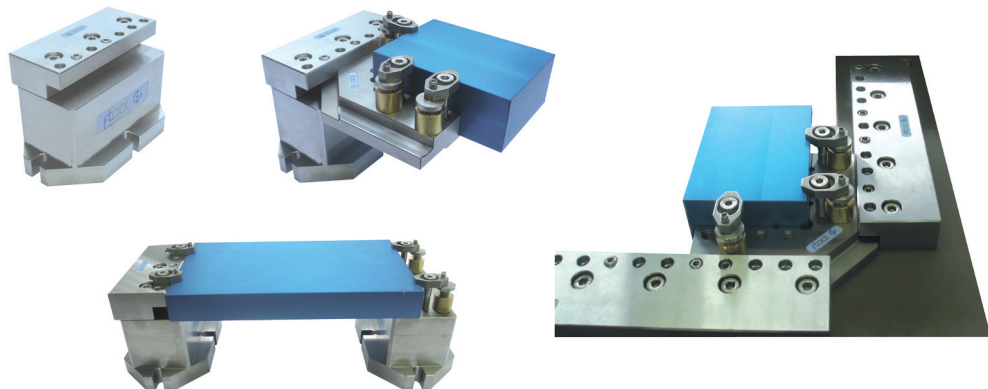
Clamping block

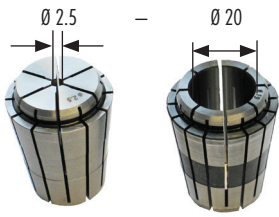
The Clamping block can be used as a basement on the EDM, EDM-drilling and Presetting machines. On the top surface the FT 01347 Basic Ruler 140 mm can be fitted. The clamping block is a high accurate clamping surface for workpieces and fixtures for RulerSet equipments.



Article no.	Article	Quantity	Weight	Code
FT 01945	Clamping block h80	1 piece	6.78 kg	B
FT 01347	FTool basic ruler 140 mm	1 piece	1.75 kg	W

Combination examples:





Collets ETS32

Specification: Accurate rotation from \varnothing 2.5 to 20 mm.
Clamping scope per collet: \varnothing 2.5 mm = 0.5 mm
 \varnothing 3 - 20 mm = 1 mm

Application: For round material from \varnothing 2 to 20 mm.

Article no.	Article	Quantity	Weight	Code
FT 01001	Collet set \varnothing 2.5 - 20 mm ETS32	Set of 19 pieces	2.60 kg	A
FT 01002	Collet \varnothing 2.5 mm ETS32	1 piece	0.14 kg	A
FT 01003	Collet \varnothing 3 mm ETS32	1 piece	0.14 kg	A
FT 01004	Collet \varnothing 4 mm ETS32	1 piece	0.14 kg	A
FT 01005	Collet \varnothing 5 mm ETS32	1 piece	0.14 kg	A
FT 01006	Collet \varnothing 6 mm ETS32	1 piece	0.14 kg	A
FT 01007	Collet \varnothing 7 mm ETS32	1 piece	0.14 kg	A
FT 01008	Collet \varnothing 8 mm ETS32	1 piece	0.14 kg	A
FT 01009	Collet \varnothing 9 mm ETS32	1 piece	0.13 kg	A
FT 01010	Collet \varnothing 10 mm ETS32	1 piece	0.13 kg	A
FT 01011	Collet \varnothing 11 mm ETS32	1 piece	0.13 kg	A
FT 01012	Collet \varnothing 12 mm ETS32	1 piece	0.13 kg	A
FT 01013	Collet \varnothing 13 mm ETS32	1 piece	0.12 kg	A
FT 01014	Collet \varnothing 14 mm ETS32	1 piece	0.12 kg	A
FT 01015	Collet \varnothing 15 mm ETS32	1 piece	0.11 kg	A
FT 01016	Collet \varnothing 16 mm ETS32	1 piece	0.11 kg	A
FT 01017	Collet \varnothing 17 mm ETS32	1 piece	0.10 kg	A
FT 01018	Collet \varnothing 18 mm ETS32	1 piece	0.10 kg	A
FT 01019	Collet \varnothing 19 mm ETS32	1 piece	0.09 kg	A
FT 01020	Collet \varnothing 20 mm ETS32	1 piece	0.08 kg	A



Collet chuck holder FTS 16

Application: Collet chuck holder on hardened and grinded steel \varnothing 20 mm, incl. collets \varnothing 2 to 10 mm.

Article no.	Article	Quantity	Weight	Code
FT 01233	Ftool collet chuck holder FTS 16, shaft \varnothing 20 mm, incl. 11 collet chucks \varnothing 2 - 10 mm and seal kit	1 set	0.56 kg	A



Mini collet chuck holder

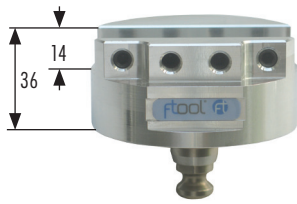
Specification: Mini collet chuck holder on hardened and grinded steel \varnothing 20 mm.
Mini collets from \varnothing 0.2 to 2 mm, grinded steel with brass seal for the appropriate diameters.

Application: Clamp of small electrode pipes \varnothing 0.2 to 2 mm.

Article no.	Article	Quantity	Weight	Code
FT 01086	Mini collet chuck holder for \varnothing 0.2-2.0 mm (deliv. without collet chucks)	1 piece	0.25 kg	A
FT 01021	Mini collet set \varnothing 0.2 - 2 mm F4.5	Set of 19 pieces	0.17 kg	A
FT 01022	Mini collet \varnothing 0.2 mm F4.5	1 piece	0.01 kg	A
FT 01023	Mini collet \varnothing 0.3 mm F4.5	1 piece	0.01 kg	A
FT 01024	Mini collet \varnothing 0.4 mm F4.5	1 piece	0.01 kg	A
FT 01025	Mini collet \varnothing 0.5 mm F4.5	1 piece	0.01 kg	A
FT 01026	Mini collet \varnothing 0.6 mm F4.5	1 piece	0.01 kg	A
FT 01027	Mini collet \varnothing 0.7 mm F4.5	1 piece	0.01 kg	A
FT 01028	Mini collet \varnothing 0.8 mm F4.5	1 piece	0.01 kg	A
FT 01029	Mini collet \varnothing 0.9 mm F4.5	1 piece	0.01 kg	A
FT 01030	Mini collet \varnothing 1.0 mm F4.5	1 piece	0.01 kg	A
FT 01031	Mini collet \varnothing 1.1 mm F4.5	1 piece	0.01 kg	A
FT 01032	Mini collet \varnothing 1.2 mm F4.5	1 piece	0.01 kg	A
FT 01033	Mini collet \varnothing 1.3 mm F4.5	1 piece	0.01 kg	A
FT 01034	Mini collet \varnothing 1.4 mm F4.5	1 piece	0.01 kg	A
FT 01035	Mini collet \varnothing 1.5 mm F4.5	1 piece	0.01 kg	A
FT 01036	Mini collet \varnothing 1.6 mm F4.5	1 piece	0.01 kg	A
FT 01037	Mini collet \varnothing 1.7 mm F4.5	1 piece	0.01 kg	A
FT 01038	Mini collet \varnothing 1.8 mm F4.5	1 piece	0.01 kg	A
FT 01039	Mini collet \varnothing 1.9 mm F4.5	1 piece	0.01 kg	A
FT 01040	Mini collet \varnothing 2.0 mm F4.5	1 piece	0.01 kg	A



F-Tool PIN holder system

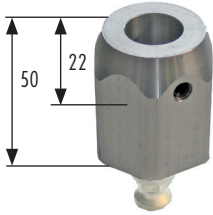


F-Tool PIN clamping holder

The PIN clamping holder is a basic holder made of aluminium for the collet of electrodes and work pieces.

Article no.	Article	Quantity	Weight	Code
FT 01725	FTool PIN clamping holder 26 mm	1 piece	0.62 kg	P

Other sizes on request.
Delivered incl. assembled PIN index, but without centering bolt.



F-Tool PIN electrode spanner

The PIN electrode spanner made of aluminium is very good qualified for an economic collet of electrode blanks and the conditioning in the PIN system.

Article no.	Article	Quantity	Weight	Code
FT 01726	FTool PIN electrode spanner Ø 16 mm	Set of 10 pieces	1.80 kg	P

Other diameters on request.
Delivered incl. assembled PIN index, but without centering bolt.

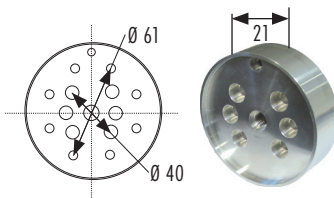


F-Tool copper blank

The copper blank is assembled with a PIN index and prepared for the centering bolt.

Article no.	Article	Quantity	Weight	Code
FT 01234	FTool copper blank Ø 50 x L = 45 mm prepared for PIN adapter	Set of 10 pieces	7.66 kg	E

Other sizes on request.
Delivered incl. assembled PIN index, but without centering bolt.

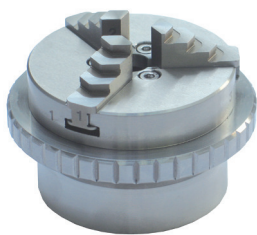


F-Tool PIN pallet aluminium

The PIN pallet aluminium is an economic, universal pallet, applicable for the collet of electrodes and work pieces.

Article no.	Article	Quantity	Weight	Code
FT 01727	FTool PIN pallet alu Ø 80 mm	1 piece	0.34 kg	P

Delivered incl. assembled PIN index, but without centering bolt.



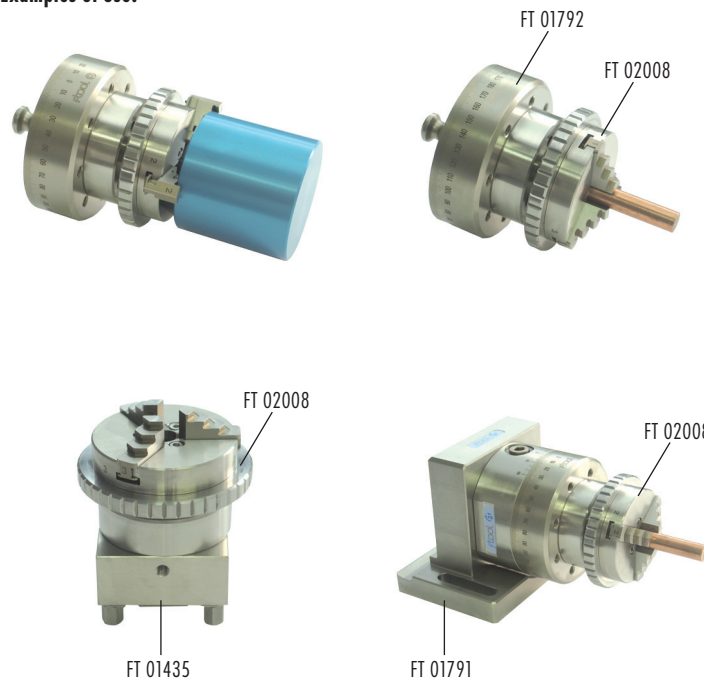
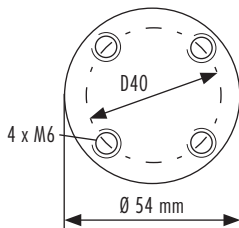
Rustless, precision three-jawed chuck

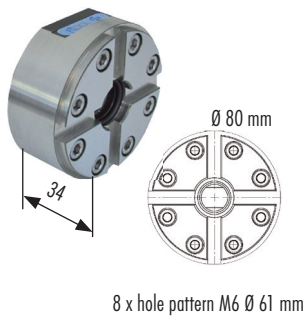
Suitable for the application on EDM wire cutting machines under water. Hardened clamping jaws for the clamping of outside diameter Ø 1 - Ø 60 mm and inside diameter of Ø 12 - Ø 66 mm. Hole pattern 4 x M6, reference circle 40 mm.

Clamping accuracy ± 0.01 mm, maximum work piece weight: 2 kg

Article no.	Article	Quantity	Weight	Code
FT 02008	3 Jaw scroll chuck DBF63 rustless 0-56 mm Ø 70 mm L = 40 mm	1 piece	0.76 kg	P

Examples of use:




F-Tool PIN center chuck

The PIN center chuck is a compact reference system and is able for the collet of electrodes and work pieces. It's also the base of the F-Tool PIN ZeroPoint centering system. The centering, respective the positioning happens in two steps. The first step is the pre-centering with the PIN centering bolt. The precise centering is done, if the cone of the spigot is intervening on the flexible centering plate, and the piece is drawn to the clamping area. With the intervention of the PIN index 8 mm into the cross slot, the angle coat is defined.

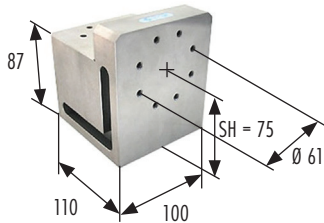
Article no.	Article	Quantity	Weight	Code
FT 01716	FTool PIN center chuck	1 piece	1.48 kg	P
FT 01717	FTool PIN center chuck with nonius graduation	1 piece	1.54 kg	P


EDM adapter plate (details on page 3)

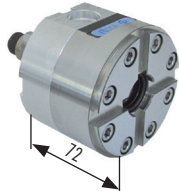
Article no.	Article	Quantity	Weight	Code
FT 01236	EDM adapter plate Ø 110 mm chuck 80/PIN chuck	1 piece	1.32 kg	A
FT 01829	EDM adapter plate Ø 110 mm without hole pattern Ø 96 mm	1 piece	1.32 kg	A


Adapter plate (details on page 3)

Article no.	Article	Quantity	Weight	Code
FT 01336	Adapter plate 120 x 82 mm chuck 80/PIN chuck	1 piece	1.40 kg	A


Square block (details on page 3)

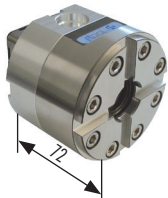
Article no.	Article	Quantity	Weight	Code
FT 01483	Square block chuck 80/PIN chuck	1 piece	8.20 kg	A


F-Tool PIN center chuck IF EROWA

With the PIN center chuck IF EROWA the electrodes and work pieces can be inserted into the EROWA ITS system.

Article no.	Article	Quantity	Weight	Code
FT 01728	FTool PIN center chuck IF EROWA	1 piece	1.96 kg	P

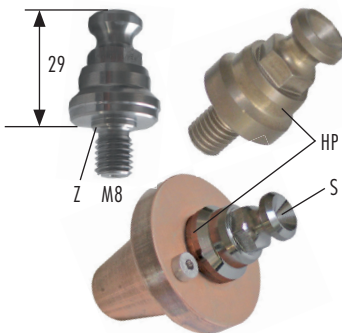
Delivered with chucking spigot F/A EDM automatic with flushing.


F-Tool PIN center chuck IF3R

With the PIN center chuck IF3R the electrodes and work pieces can be inserted into the 3R system.

Article no.	Article	Quantity	Weight	Code
FT 01729	FTool PIN center chuck IF3R	1 piece	1.60 kg	P

Delivered without chucking spigot.


F-Tool PIN centering bolt

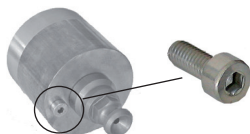
According to the application, the suitable centering bolts may be inserted.

HP = PIN centering bolt high precision / grinded

Z = with centering bundle

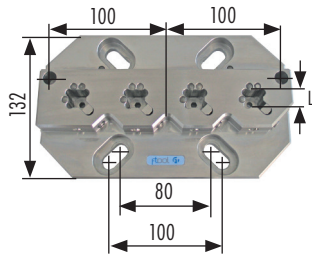
S = flushing hole

Article no.	Article	Quantity	Weight	Code
FT 01719	FTool RefPIN HP-Z with flushing S (grinded)	1 piece	0.07 kg	P
FT 01720	FTool RefPIN-Z with flushing S	Set of 10 pieces	0.65 kg	P
FT 01721	FTool RefPIN-Z without flushing S	Set of 10 pieces	0.65 kg	P
FT 01722	FTool RefPIN without bundle Z	Set of 10 pieces	0.65 kg	P
FT 01723	FTool ClampPIN (without bundle Z and without centering)	Set of 10 pieces	0.65 kg	P


F-Tool PIN index 8 mm M5

The orientation coat can be defined with the PIN index.

Article no.	Article	Quantity	Weight	Code
FT 01724	FTool PIN index Ø 8/3.5 mm M5 A2	Set of 10 pieces	0.01 kg	P

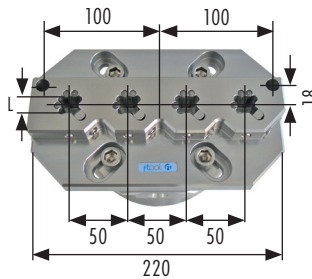


Square clamp multiplate

The square clamp multiplate is suited excellent for the rational fabrication of square electrodes. One or several multiple plates can be assembled on standard system beams.

- Rational, accurate electrode manufacturing, in grid 50 mm
- Alignment of the pallet and searching the coordinates by 2 reference holes, distance to the middle Ø axe 18 mm
- The square clamp multiplate can be fixed to all pallets with 40/50 mm pattern bore holes

Article no.	Article	Quantity	Weight	Code
FT 01174	Square clamp 4 x L = 15 mm multiplate	1 piece	5.20 kg	A
FT 01175	Square clamp 4 x L = 25 mm multiplate	1 piece	5.01 kg	A
FT 01176	Square clamp 4 x L = 30 mm multiplate	1 piece	4.80 kg	A

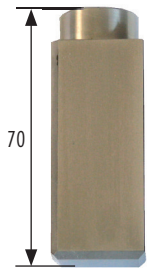


Pallet 148 square clamp multiplate

The pallet 148 square clamp multiplate can, manual or automatic, inserted into the EROWA ITS clamping system. Otherwise, specification as above.

Article no.	Article	Quantity	Weight	Code
FT 01171	Pallet 148 square clamp 4 x L = 15 mm	1 piece	7.30 kg	A
FT 01172	Pallet 148 square clamp 4 x L = 25 mm	1 piece	7.02 kg	A
FT 01173	Pallet 148 square clamp 4 x L = 30 mm	1 piece	6.90 kg	A

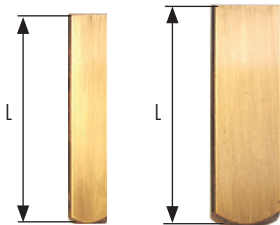
Delivered incl. pallet 148 with centering plate 100 M8. Delivered without chucking spigot.



Square clamp checking rod

A periodical inspection of the square clamp holder or the check after a crash is suitable.

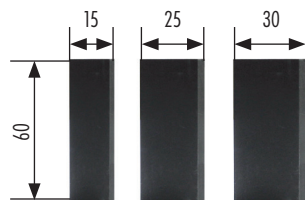
Article no.	Article	Quantity	Weight	Code
FT 01177	Square clamp checking rod 10	1 piece	0.17 kg	A
FT 01178	Square clamp checking rod 15	1 piece	0.22 kg	A
FT 01179	Square clamp checking rod 25	1 piece	0.43 kg	A
FT 01180	Square clamp checking rod 30	1 piece	0.58 kg	A



Electrode copper for square clamp

Drawn profile of EDM Copper, incl. phase 45° for the safe, direction-oriented, and with lapped stop-surface for the accurate application.

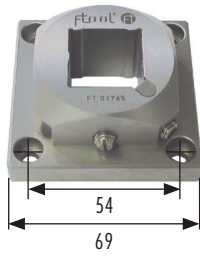
Article no.	Article	Quantity	Weight	Code
FT 01094	Square blank 15 L = 75 mm, lapped	Set of 32 pieces	4.74 kg	E
FT 01095	Square blank 25 L = 80 mm, lapped	Set of 20 pieces	8.80 kg	E
FT 01770	Electrode cu 15 x 15 mm L = 75 mm, manual grinded	Set of 32 pieces	4.83 kg	E
FT 01771	Electrode cu 25 x 25 mm L = 80 mm, manual grinded	Set of 20 pieces	8.90 kg	E
FT 01165	El.-copper 30 x 30 L = 60 mm, blank	Set of 10 pieces	4.89 kg	E
FT 01166	El.-copper 30 x 30 L = 60 mm, blank	Set of 24 pieces	11.61 kg	E



F-Tool graphite square blank

Graphite square with phase, prepared for the square clamps 15, 25 and 30 mm. EX60 for roughing up to surface quality VDI 24. EX70 for finishing up to surface quality VDI 18.

Artikel-Nr.	Artikel	Menge	Gewicht	Code
FT 01241	FTool graphite square blank 15 x 15 x 60 mm EX60	Set of 36 pieces	0.87 kg	G
FT 01242	FTool graphite square blank 15 x 15 x 250 mm EX60	Set of 2 pieces	0.20 kg	G
FT 01243	FTool graphite square blank 25 x 25 x 60 mm EX60	Set of 36 pieces	2.43 kg	G
FT 01244	FTool graphite square blank 25 x 25 x 250 mm EX60	Set of 2 pieces	0.56 kg	G
FT 01245	FTool graphite square blank 30 x 30 x 60 mm EX60	Set of 36 pieces	3.50 kg	G
FT 01246	FTool graphite square blank 30 x 30 x 250 mm EX60	Set of 2 pieces	0.81 kg	G
FT 01277	FTool graphite square blank 15 x 15 x 60 mm EX70	Set of 36 pieces	0.90 kg	G
FT 01278	FTool graphite square blank 15 x 15 x 250 mm EX70	Set of 2 pieces	0.21 kg	G
FT 01279	FTool graphite square blank 25 x 25 x 60 mm EX70	Set of 36 pieces	2.50 kg	G
FT 01280	FTool graphite square blank 25 x 25 x 250 mm EX70	Set of 2 pieces	0.58 kg	G
FT 01281	FTool graphite square blank 30 x 30 x 60 mm EX70	Set of 36 pieces	3.60 kg	G
FT 01282	FTool graphite square blank 30 x 30 x 250 mm EX70	Set of 2 pieces	0.83 kg	G



Square 25 front part

- Square front part of stainless, hardened INOX steel
- 3 linear stop surfaces, hardened and jig grinded
- Repeat accuracy +/- 0.005 mm
- For the assembling on pallets and plates for multiple clamping
- Hole pattern for 4 x M6 Ø 6.5 mm

Article no.	Article	Quantity	Weight	Code
FT 01765	Square 25 front part	1 piece	0.62 kg	B



F-Tool graphite shaft clamp CIF (cross interface)

- With the shaft clamp, the prepared graphite blank's can be taken easily. Afterwards they can be inserted in reference position into the suitable Square Clamp System
- For the re-use, the electrodes prepared in reference position, can be stored economic incl. graphite shaft clamp

Note

- If you remove the shaft from the finished electrode, the positioning accuracy is warranted to only a limited extent

Article no.	Article	Quantity	Weight	Code
FT 01222	FTool graphite shaft clamp CIF 25 M6 aluminium	Set of 10 pieces	1.10 kg	A
FT 01485	FTool graphite shaft clamp CIF 25 M6 steel	1 piece	0.35 kg	A



Square 15 shaft holder

With the square shaft holder, the copper consumption can be reduced to a minimum. The square shaft holder is prepared for the collet of two different diameters. The borehole is prepared with a H7 manufacturing tolerance. Other diameters can be clamped and bored by oneself in the square holder.

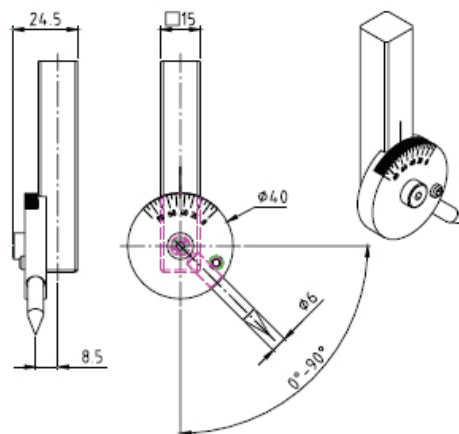
Article no.	Article	Quantity	Weight	Code
FT 01918	Square 15 shaft holder Ø4H7/Ø6H7	1 piece	0.11 kg	A
FT 01919	Square 15 shaft holder Ø8H7/Ø10H7	1 piece	0.09 kg	A



Injection nozzle El. Holder

- Made of stainless, hardened INOX steel. For the collet in the square 15 monoblock, square clamp 15 etc.
- Infinitely adjustable from 0-90°
- Able to erode lateral drillings and nozzles.

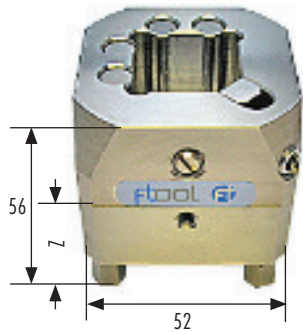
Article no.	Article	Quantity	Weight	Code
FT 01766	Square 15 injection nozzle El. Holder Ø 6 mm 0-90°	1 piece	0.23 kg	B



F-Tool square clamp with EROWA interface

The new design of the F-Tool square clamp has many advantages.

- Well in price
- Uttermost repeat accuracy
- Non-sensitive to soil and corrosion resistant
- Solid
- Positioning / repeat accuracy of the electrode blanks < 0.01 mm
- New are the dimensions of 30 x 30 mm



Z = 32/0-0.04 mm

Patent pending

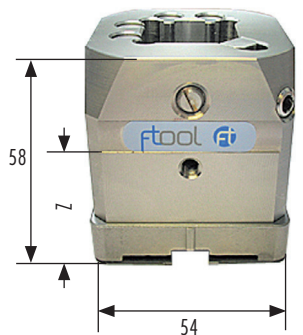
Article no.	Article	Quantity	Weight	Code
FT 01129	Ftool 15 square clamp EWIS	1 piece	0.93 kg	A
FT 01130	Ftool 15 square clamp EWIS	Set of 10 pieces	8.80 kg	A
FT 01131	Ftool 25 square clamp EWIS	1 piece	0.84 kg	A
FT 01132	Ftool 25 square clamp EWIS	Set of 10 pieces	8.05 kg	A
FT 01133	Ftool 30 square clamp EWIS	1 piece	0.86 kg	A
FT 01134	Ftool 30 square clamp EWIS	Set of 10 pieces	8.14 kg	A

Delivered without chucking spigot.

F-Tool square clamp with IF3R

→ Provided with reference element IF3R.

→ Appropriate for 3R standard spigots



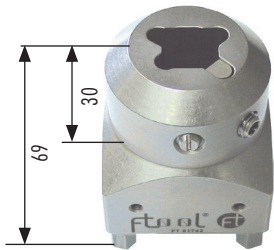
Z = 32/0-0.04 mm

Article no.	Article	Quantity	Weight	Code
FT 01143	Ftool 15 square clamp IF3R	1 piece	1.02 kg	A
FT 01144	Ftool 15 square clamp IF3R	Set of 10 pieces	9.83 kg	A
FT 01145	Ftool 25 square clamp IF3R	1 piece	0.94 kg	A
FT 01146	Ftool 25 square clamp IF3R	Set of 10 pieces	9.10 kg	A
FT 01147	Ftool 30 square clamp IF3R	1 piece	0.94 kg	A
FT 01148	Ftool 30 square clamp IF3R	Set of 10 pieces	9.10 kg	A

Delivered without spigot.

Square 15 monoblock

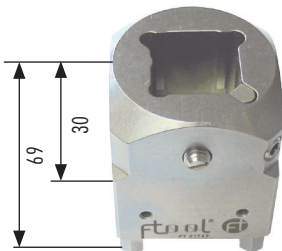
- Square 15 of stainless, hardened INOX steel with collet EROWA
- 3 linear stop surfaces, hardened and jig grinded
- Repeat accuracy +/- 0.005 mm, as well at changing electrodes in several holders
- Lateral flushing connection
- Prepared for EWIS
- Delivered without chucking spigot



Article no.	Article	Quantity	Weight	Code
FT 01762	Square 15 monobloc	1 piece	0.92 kg	B

Square 25 monoblock

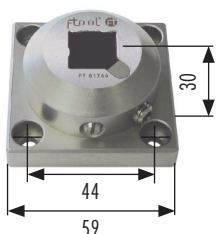
- Square 25 of stainless, hardened INOX steel with collet EROWA
- 3 linear stop surfaces, hardened and jig grinded
- Repeat accuracy +/- 0.005 mm, as well at changing electrodes in several holders
- Lateral flushing connection
- Prepared for EWIS
- Delivered without chucking spigot



Article no.	Article	Quantity	Weight	Code
FT 01763	Square 25 monobloc	1 piece	0.99 kg	B

Square 15 front part

- Square front part of stainless, hardened INOX steel
- 3 linear stop surfaces, hardened and jig grinded
- Repeat accuracy +/- 0.005 mm
- For the assembling on pallets and plates for multiple clamping
- Hole pattern for 4 x M6 Ø 6.5 mm



Article no.	Article	Quantity	Weight	Code
FT 01764	Square 15 front part	1 piece	0.48 kg	B