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123 x 82 x 62 = 112 kg
189 x 103 x 105 = 265 kg

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Customer number 0017050076	Delivery note number 1162599168	Order number 2170594427	Festo consultant Chris Oliver
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Date
11 January 2018

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Your order Z03 PO17041543 of 05.10.2017

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Baleseng, Simon Vermooten Road
Silverton

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Email: aschwei4@ford.com

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Email: aschwei4@ford.com

Contact Department
Mr. L. Kirk
Didactic
Phone ++27 (0) 11-971-5
Fax ++27 (0) 11 974-9
lucian.kirk@festo.com

Reg No 1973/003776/07
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Directors
Mr. J. M. Heckl * Mr. J. Naumburger *
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*German

Regional Offices at

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Festo (Pty.) Ltd.
Head Office, Johannesburg
22 26 Electron Ave Isando
P O Box 255, 1600
Republic of South Africa
Phone +27(0)11-971 5500
Fax +27(0)11 974 2157

Description	Part number	Qty	Net price per unit
Item 0010 D H-GS-TP601-KPL Equipment set TP 601 Basic level electro-hydraulics With the Quick-Fix® mounting system you can easily and flexibly mount all the components of a workstation on a profile plate with 50 mm between slots or on a profile column. The electrical units are clamped firmly in the mounting frame and sequenced individually. The electrical units can be used for hydraulic or pneumatic systems. All electrical components are equipped with 4 mm safety plugs and safety sockets. The electric limit switches and sensors are designed to be suitable for	573037	1	



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Phone ++27 (0) 11-971-5
Fax ++27 (0) 11-974-9
lucian.kirk@festo.com

Description	Part number	Qty	Net price per unit
<p>activating electropneumatic components. The electronic proximity switches are designed in such a way that they can be used on the cylinders of the equipment sets of Pneumatics, Basic Level. The equipment sets are kept in trays that fit in both the Systainer® and the workstations drawer containers. In addition, each component has a pictogram, which complies with DIN ISO 1219-1, thus providing a clear overview. The package includes adhesive symbols (in accordance with DIN ISO 1219-1) for labelling the components' storage location, safety and work instructions, and a storage suggestion.</p> <p>The hydraulic connection does not require any tools and involves low-leakage stainless steel couplings. The coupling nipple and socket are self-sealing when uncoupled and are pressure resistant up to 12 MPa. The sensors for pressure, temperature and flow can be used at any coupling location. All the components are included as simulation models in the FluidSIM® component library. The component selection and the equipment set version are specifically adapted to the tasks in the related workbook. By supplementing the equipment set for Electrohydraulics - Basic Level and re-using the equipment, it can be cost-effectively expanded to include the scope of Hydraulics - Basic Level, Electrohydraulics - Advanced Level or Electropneumatics - Basic Level. The equipment set contains all the components for basic training in electrohydraulics:</p> <p>1x Pressure relief valve 544335 1x 2-way flow control valve 544338 1x One-way flow control valve 152843 1x Non-return valve 548618 1x 4/2-way solenoid valve, spring return</p>			



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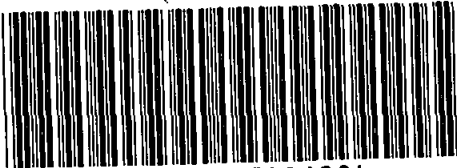
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544346 1x 4/3-way solenoid valve, closed mid-position 544347 1x 4/2-way double solenoid valve, detenting 544352 1x Shut-off valve 152844 1x Weight, 9 kg for cylinder 152972 2x Differential cylinder 16/10/200 with cover 572746 1x Mounting kit for cylinders 544371 2x T-distributor 152847 2x 4-way distributor with pressure gauge 159395 2x Pressure gauge 152841 1x Pressure switch, electronic 548612 2x Relay, three-fold 162241 1x Signal input, electrical 162242 1x Limit switch, electrical, left-actuated 183322 1x Limit switch, electrical, right-actuated 183345 2x Proximity sensor, electronic 548589			
Item 0020 D.ETER2-MOD-POWER-24V-ZA Power supply unit for mounting frame - Input voltage: 85 - 265 V AC (47 - 63 Hz) - Output voltage: 24 V DC, short-circuit-proof - Output current: max. 4.5 A - Dimensions: 170 x 240 x 92 mm Type: Connector as per SANS 164-1 for ZA, IN, PT, SG, HK, (GB), (AE)	162415	1	
Item 0030 D-AS-KS-4MM-UNI-SIBU Safety laboratory cables, 98 pieces, red and blue Complete set, consisting of 98 safety laboratory cables with 4 mm safety plugs in the colours red and blue: - 10x red 50 mm - 10x blue 50 mm - 26x red 300 mm	167091	1	

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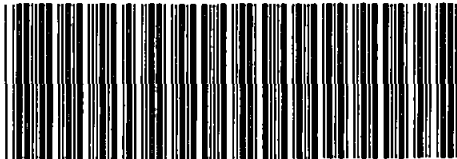
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Description	Part number	Qty	Net price per unit
<ul style="list-style-type: none">- 11x blue 300 mm- 21x red 500 mm- 12x blue 500 mm- 3x red 1000 mm- 3x blue 1000 mm- 1x red 1500 mm- 1x blue 1500 mm- Plugs with rigid protective sleeve and axial socket- Conductor cross section: 1 mm²- Rated current: 16 A For the third cable colour, safety laboratory cables, 47 pieces, black, are suitable (order no. 572096)			
Item 0040 D:ETE-DMM-AMPR-AM-510 Meas. device	8040005	1	
Item 0050 D:LB-GHEH-BV1-V1-EN Fundamentals of hydraulics and electrohydraulics. Textbook This textbook teaches the main fundamentals of hydraulics and electrohydraulics in a clear manner: <ul style="list-style-type: none">- Physical fundamentals of hydraulics- Fundamentals regarding hydraulic fluids- Components of the power supply section- Drives, pressure regulators, directional control valves, shut-off valves, flow control valves, proportional valves as well as characteristic values and designs- Fundamentals of electrical engineering and electrical components- Workflow descriptions for processing machines and production systems- Circuit symbols and layout of circuit diagrams- Safety measures for electrohydraulic control systems Renate Aheimer, Christine Löffler,	574181	1	

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Description	Part number	Qty	Net price per unit
Dieter Merkle, Georg Prede, Klaus Rupp, Dieter Scholz, Burkhard Schrader 2012 edition, 232 pages, in colour, bound Also order: FluidSIM® Hydraulics This software enables you to design and simulate the sample circuits supplied on a PC Version (language): en			
Item 0060 D:LW-EH-601-V1 -EN Electrohydraulics, Basic level TP 601. Training course documents The basic electrical circuits for hydraulic control technology are presented in 15 exercises. In order to carry out the exercises, students require the equipment set of TP 601 Electrohydraulics, Basic Level. The workbook includes: - Sample solutions - Training notes - Multimedia CD-ROM with graphics, photos of industrial applications, animations and FluidSIM® circuit diagrams - Exercise sheets for trainees Frank Ebel, Christine Löffler Issue 2011, 426 pages, in colour, bound. Campus licence - permission to copy for internal purposes inclusive Campus licence: en	551150	1	
Item 0070 D:H-B-2L/MIN6MPA230V50HZ Hydraulic power pack with a constant- displacement pump, 230 V Ideal for individual hydraulic workstations for all experiments using standard equipment sets TP 500, 600, 700, 511 and the MPS® punching station	152962	1	

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Description	Part number	Qty	Net price per unit
<ul style="list-style-type: none">- Mounting on Learline with universal bracket (order no 539736)- Mounting on Learntop-S: direct- Pump design: external gear motor with pressure relief valve adjustable from 0 - 6 MPa (0 - 60 bar)- Operating pressure Pmax: 6 MPa (60 bar)- Motor: AC, single-phase with overload protection, start capacitor and ON/OFF switch- Tank: 5 l volume, sight glass, temperature display, drain screw- Air filter and return filter- Low-leakage, self-sealing coupling nipples for P and T- Plug socket for unpressurised return- Connecting flange for measuring container return- Dimensions: 580 x 300 x 180 mm (W x D x H)- Weight: 19 kg- With IEC connector for DE, FR, NO, SE, FI, PT, ES, AT, NL, BE, GR, TR, IT, DK, IR, ID- Nominal voltage: 230 V AC- Rated output: 0.65 kW- Frequency: 50 to 60 Hz- Delivery rate (rated speed): 2.2 - 2.7 l/min at 1320 - 1680 r.p.m. <p>Note: For safety reasons the hydraulic power packs are not filled with oil when delivered. Please order the oil separately.</p>			
Item 0080 D.AS-HLP22-10L Hydraulic oil (DIN 51524) HLP22, 10 Litre	192215	1	
Item 0090 600 MM NG4 Hose line with quick release couplings The high-pressure hose consists of three	152960	8	

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Description	Part number	Qty	Net price per unit
layers. The innermost layer is synthetic rubber, followed by a wire mesh and sheath of abrasion-resistant synthetic rubber. The quick coupling sockets are self-sealing when decoupled. Used with a coupling nipple, the coupling sockets form a tightly sealed connection. Only the face of the coupling is coated with oil during the coupling process. Coupling and decoupling are only permissible when the hose is de-pressurised. - Operating pressure 6 MPa (60 bar) - Max. permissible pressure 12 MPa (120 bar) - Temperature range -40 - + 125 °C - Min. bending radius 100 mm - DN 06 (Ø 6,3 mm) - Tube length: 600 mm			
Item 0100 1000 MM NG4 Hose line with quick release couplings The high-pressure hose consists of three layers: The innermost layer is synthetic rubber, followed by a wire mesh and sheath of abrasion-resistant synthetic rubber. The quick coupling sockets are self-sealing when decoupled. Used with a coupling nipple, the coupling sockets form a tightly sealed connection. Only the face of the coupling is coated with oil during the coupling process. Coupling and decoupling are only permissible when the hose is de-pressurised. - Operating pressure 6 MPa (60 bar) - Max. permissible pressure 12 MPa (120 bar) - Temperature range -40 - + 125 °C - Min. bending radius 100 mm - DN 06 (Ø 6,3 mm) - Tube length: 1000 mm	152970	4	

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Description	Part number	Qty	Net price per unit
Item 0110 1500 MM NG4 Hose line with quick release couplings The high-pressure hose consists of three layers. The innermost layer is synthetic rubber, followed by a wire mesh and sheath of abrasion-resistant synthetic rubber. The quick coupling sockets are self-sealing when decoupled. Used with a coupling nipple, the coupling sockets form a tightly sealed connection. Only the face of the coupling is coated with oil during the coupling process. Coupling and decoupling are only permissible when the hose is de-pressurised. - Operating pressure 6 MPa (60 bar) - Max. permissible pressure 12 MPa (120 bar) - Temperature range -40 - + 125 °C - Min. bending radius 100 mm - DN 06 (Ø 6,3 mm) - Tube length: 1500 mm	159386	4	
Item 0120 D H-B-DEE Pressure relief unit The pressure relief unit is attached to the low-leakage, self-sealing coupling nipple so it can be forced open without requiring much power. This allows trapped hydraulic pressures to be relieved.	152971	1	
Item 0130 D:LL2-MW-MF-V-1100-ER Mobile laboratory workbench Mobile workstation system with profile plate that can be used on both sides (1100 mm) and ER mounting frame Type: With 1100 x 700 mm profile plate and ER frame	539028	1	
Item 0140 D.LL2-SD3	539026	1	

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Description	Part number	Qty	Net price per unit
Fixed drawer unit for installation in mobile workstations Fixed drawer unit with three lockable steel drawers, fully extendable and with safety stop. Type: Fixed drawer unit hydraulic with 3 drawers			
Item 0150 D:LL2-HH Holder for up to 20 hydraulic hoses	539737	1	
Item 0160 D.LL2-AL-1512X312X5NBR50 Oil receptacle/protective mat, 1512 x 312 mm, 5 mm thick insulation mat with a 16 mm high border all round.	541133	1	
Item 0170 D:LL2-HA Universal bracket for hydraulic accessories	539736	1	
Item 0180 D:LL2-AB Storage plate for the basic mobile unit	539729	1	
Item 0190 D:SW-FSP5-XOL FluidSIM® 5 FluidSIM® 5 Pneumatics is an application for creating and simulating pneumatic and electropneumatic circuits. The software package includes a circuit creation tool, a high-performance simulation tool and a comprehensive e-learning tutorial. The following automation technology topics are covered: - Pneumatics - Electropneumatics - Servopneumatics - Safety in pneumatics (new) - Vacuum technology (new) - Sensors in pneumatics (new)	8024357	1	

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Description	Part number	Qty	Net price per unit
<ul style="list-style-type: none"> - GRAFCET - Digital technology <p>System requirements:</p> <ul style="list-style-type: none"> - Windows XP, Vista, 7 or 8 - At least 1 GHz processor - At least 1 GB RAM - Dual core processor (recommended) <p>Technology: Pneumatics</p> <p>Type (license): Local installation</p> <p>Number (pieces): Single/multiple licence de/en/es/fr</p> <p>LICENCES_PCS</p>			
<p>Item 0200</p> <p>D:SW-FSH5-XOL</p> <p>FluidSIM® 5</p> <p>FluidSIM® 5 Hydraulics is an application for creating and simulating hydraulic and electrohydraulic circuits. The integration of mobile hydraulics is new in version 5. The software package includes a circuit creation tool, a high-performance simulation tool and a comprehensive e-learning tutorial. The following automation technology topics are covered:</p> <ul style="list-style-type: none"> - Hydraulics - Electrohydraulics - Proportional hydraulics - Closed-loop hydraulics - Mobile hydraulics - GRAFCET - Digital technology <p>System requirements:</p> <ul style="list-style-type: none"> - Windows XP, Vista, 7 or 8 - At least 1 GHz processor - At least 1 GB RAM - Dual core processor (recommended) <p>Technology: Hydraulics</p> <p>Type (license): Local installation</p> <p>Number (pieces): Single/multiple licence de/en/es/fr</p>	8024358	1	

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Goods may only be returned for credit by prior arrangement and are subject to handling charges unless due to supplier error

Contact Department
--Mr L. Kirk

Didactic
Phone ++27 (0) 11-971-5
Fax ++27 (0) 11-974-9
lucian.kirk@festo.com

A. Schwetzer [Signature] 15/01/18

Name Signature Date

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