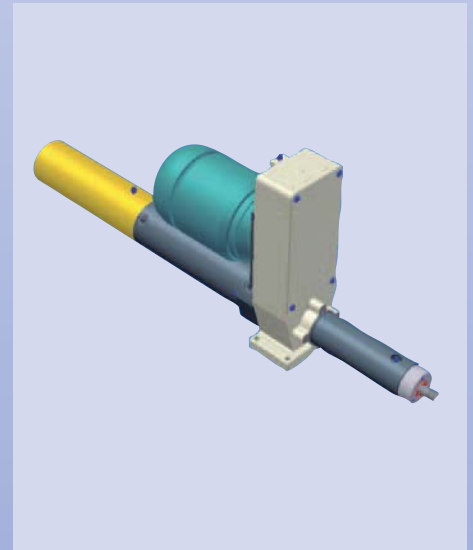




● F.P7.51

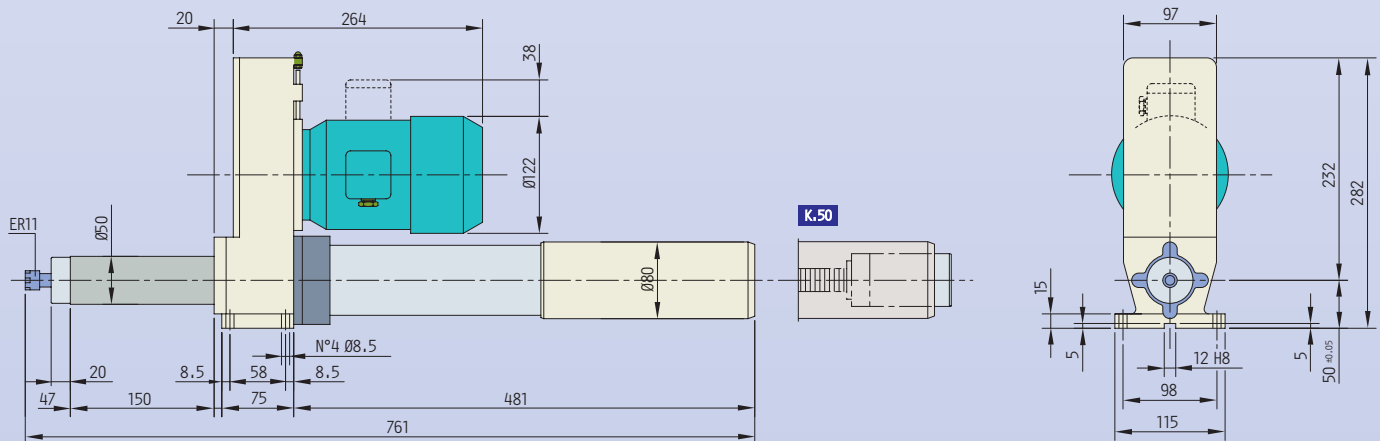
	Total stroke mm	Drilling capacity mm			Thrust N at 6 bar	Weight kgs	Standard colour RAL	Pneumatic ports	Electric ports	Run out mm T.I.R.
F.P7.51	50	Steel R=60	Aluminium R=40	Brass R=50	1350	16	7035	1/4"G	PG9	0.01



- Electro-pneumatic drilling unit F.P7.51
- Working stroke 50 mm.
- Total fast, slow strokes are all independently adjustable.
- Coaxial quill thrust and Hydrocheck unit.
- Motor to spindle V belt drive.
- 15000 rpm spindle speed achievable with speed multiplier F.MOL.
- Deep hole drilling (more than 4 x dia.), is possible with pecking device F.KD.
- For pneumatic cycling use 1/8" BSP 5/2 single acting solenoid valve.
- Micrometric stroke adjustment F.MIC on request.

The unit must necessarily be ordered together with the following component:

Hydrocheck unit:
50 mm stroke K.50 Code 10420025

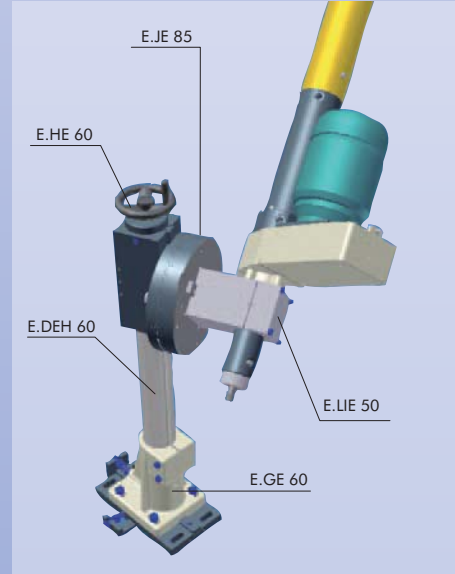




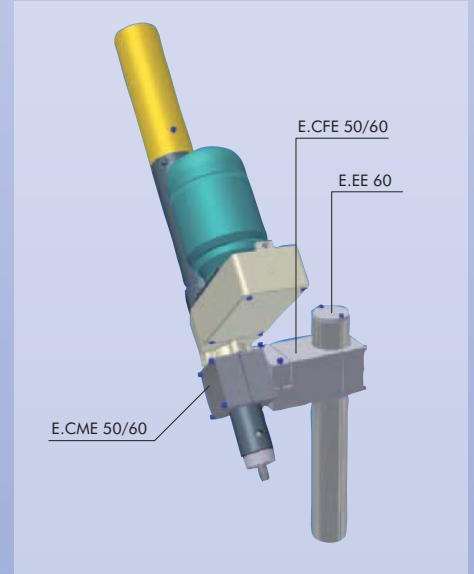
BASIC UNIT		SPEED	
TYPE	CODE	50Hz	60Hz
F.P7.51	10102000 ●	1400	1680
		1900	2280
		2800	3360
		3800	4560
		5000	6000
		6700	8040
		9000	10800
		12000	14400

MOTOR			
kW	0.37	2P	63 FRAME ●

Unit positioning with angle setting and x-y strokes

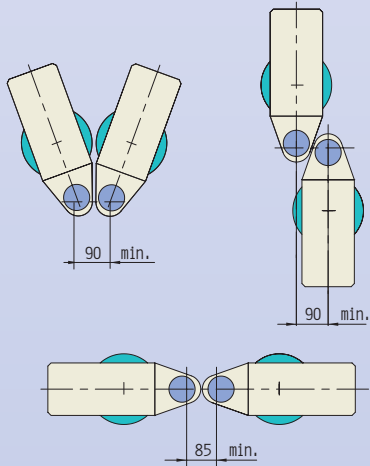


Unit positioning



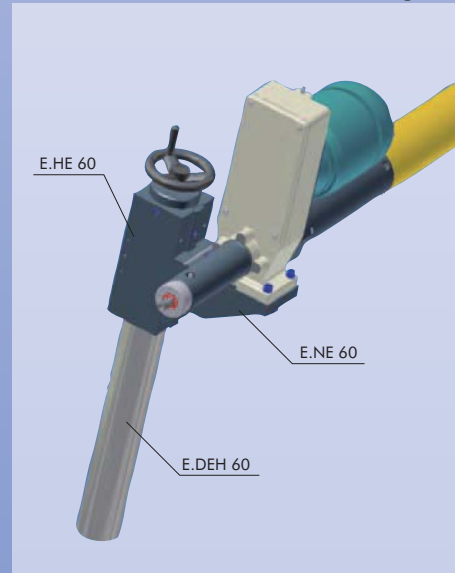
DRILL UNIT COLLAR MOUNTING

To reach minimum centres (without mounting foot)

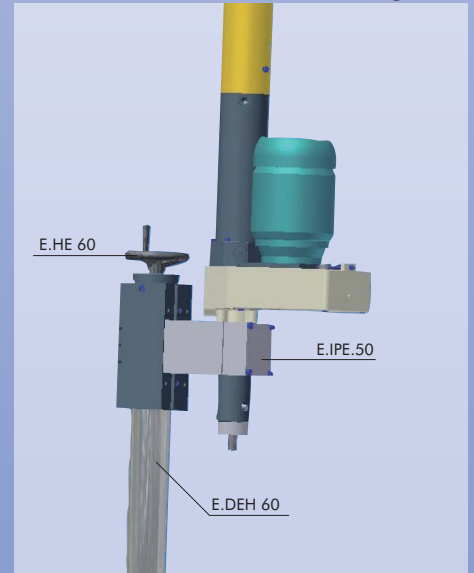


P.N. FOR THIS REQUIREMENT, "WITHOUT MOUNTING FOOT" MUST BE SPECIFIED ON THE ORDER.

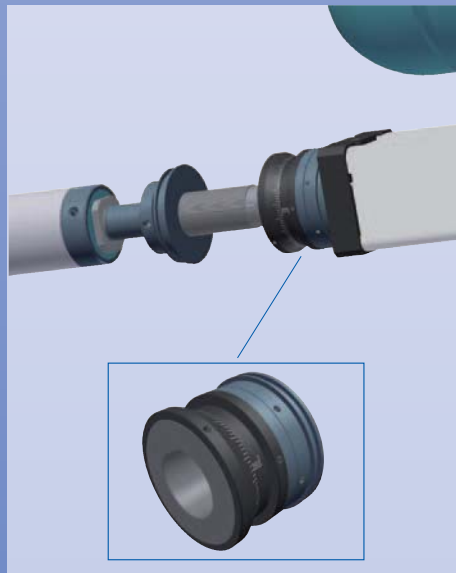
Horizontal axis with vertical setting



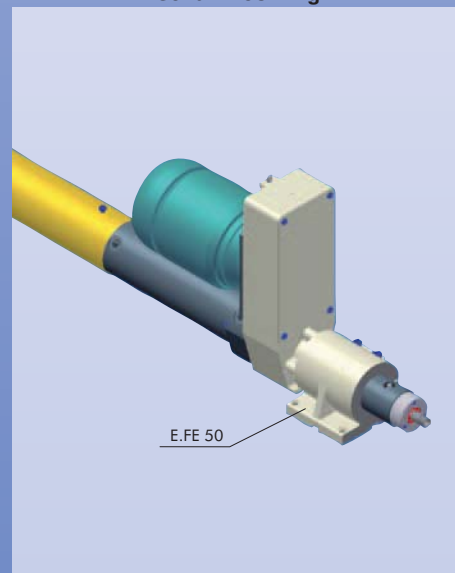
Vertical axis with vertical setting



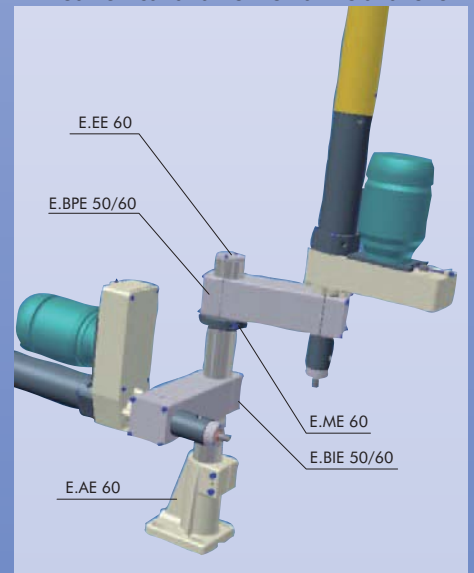
MICROMETRIC STROKE ADJUSTMENT=F.MIC



Collar mounting



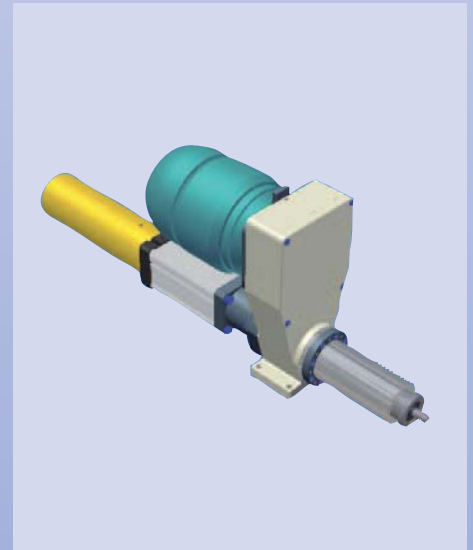
Fixed vertical and horizontal installations





● F.P13.75 - 150

	Total stroke mm	Drilling capacity mm		Thrust N		Weight kgs	Standard colour RAL	Pneumatic or hydraulic ports	Electric ports	Run out mm T.I.R
		Steel R=60	Aluminium R=40 Brass R=50	Pneumatic at 6 bar	Hydraulic at 25bar					
F.P13.75	75	10	14	1350		18	7035	1/4"G	PG9	0.01
F.I13.75	75	10	14		2300	19	7035	1/4"G	PG9	0.01
F.P13.150	150	10	14	1350		21	7035	1/4"G	PG9	0.01



- Electro-pneumatic drilling unit F.P13
- Electro-hydraulic drilling unit F.I13
- Working stroke 75 o 150 mm
- Total, fast, slow strokes are all independently adjustable.
- Coaxial quill thrust and Hydrocheck unit.
- Deep hole drilling (more than 4 x dia.) is possible with pecking device F.KD.
- For pneumatic cycling use 1/4" BSP 5/2 single acting solenoid valve, and on hydraulic, 4/2 single acting.
- Micrometric stroke adjustment F.MIC on request.

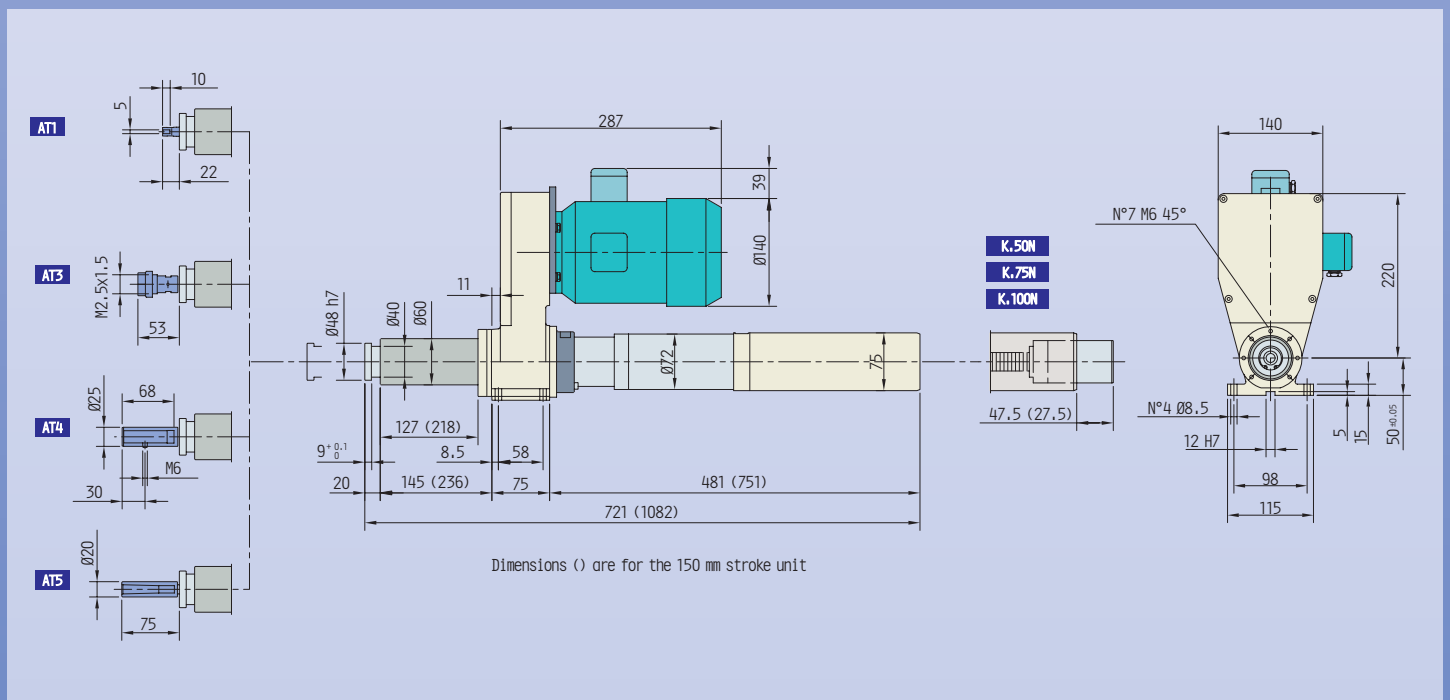
The unit must necessarily be ordered together with the following component:

Output spindles:

- B12 Taper DIN 238 = AT 1 Code 28010012
- ER20 Collet holder (1 ÷ 13 mm cap.) = AT 3 Code 28010016
- 16mm dia. straight bore DIN 55058 = AT 4 Code 28010020
- N°1 Morse taper = AT 5 Code 28010024

Hydrocheck units:

- 50 mm stroke K.50 Code 10420025
- 75 mm stroke K.75 Code 10420030
- 100 mm stroke K.100 Code 10420035





BASIC UNIT

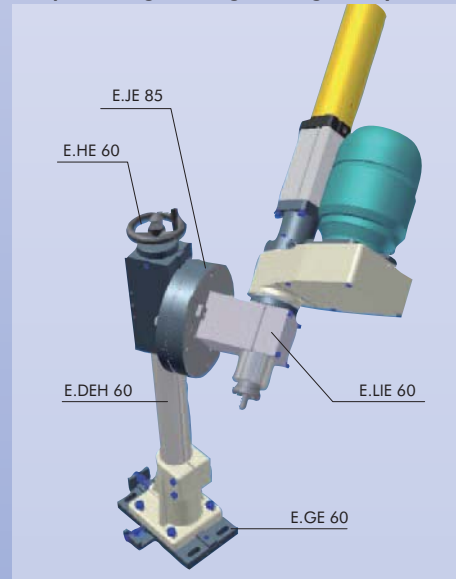
SPEED

TYPE	CODE	50Hz	60Hz
F.P13.75	10101001	▲ 460	552
	10101002	■ 700	840
	10101003	■ 1050	1260
	10101004	■ 1600	1920
	10101005	■ 2400	2880
	10101006	■ 3350	4020
	10101007	■ 4200	5040
	10101008	● 4800	5760
	10101009	● 6000	7200
	10101011	● 6700	8040
	F.P13.150	10101013	▲ 460
10101015		■ 700	840
10101017		■ 1050	1260
10101019		■ 1600	1920
10101021		■ 2400	2880
10101023		■ 3350	4020
10101025		■ 4200	5040
10101027		● 4800	5760
10101029		● 6000	7200
10101031		● 6700	8040
F.I13.75		10103001	▲ 460
	10103002	■ 700	840
	10103003	■ 1050	1260
	10103004	■ 1600	1920
	10103005	■ 2400	2880
	10103006	■ 3350	4020
	10103007	■ 4200	5040
	10103008	● 4800	5760
	10103009	● 6000	7200
	10103010	● 6700	8040
F.PR13.75 with reduction gear box	10101033	▲ 150	180
	10101035	■ 230	276
F.IR13.75 with reduction gear box	10103011	▲ 150	180
	10103012	■ 230	276

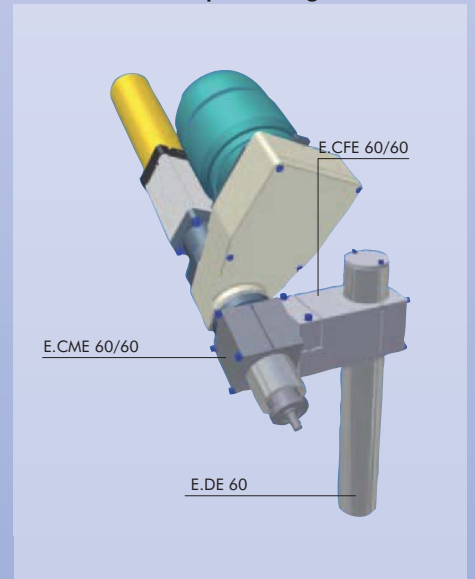
MOTOR

- kW 0.75 ● 2P 71 FRAME
- kW 0.50 ■ 4P 71 FRAME
- kW 0.55 ▲ 6P 80* FRAME
* Reduced

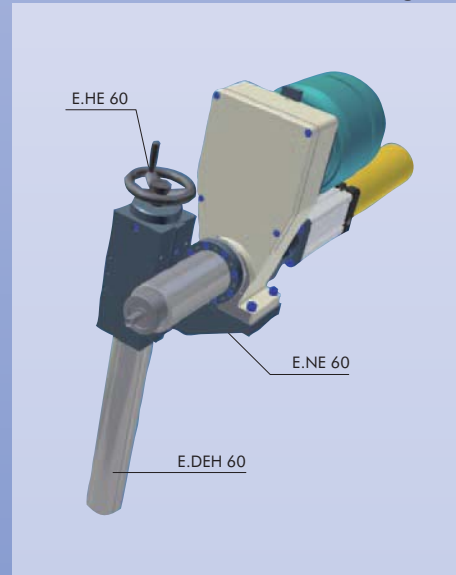
Unit positioning with angle setting and x-y strokes



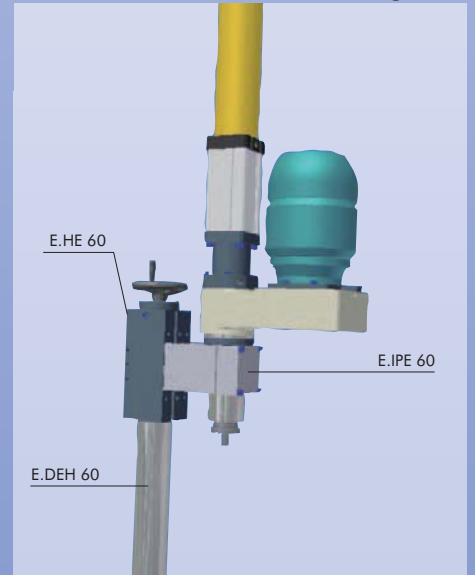
Unit positioning



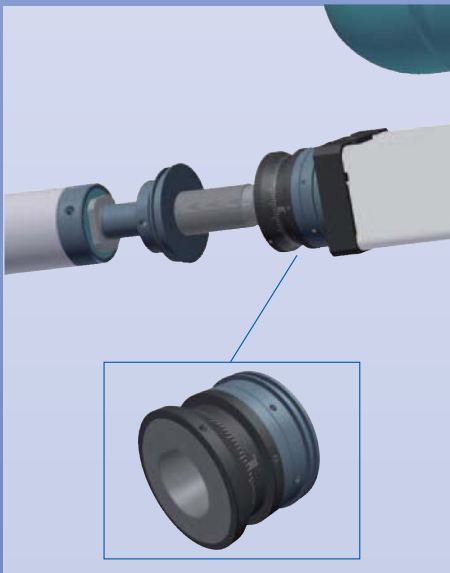
Horizontal axis with vertical setting



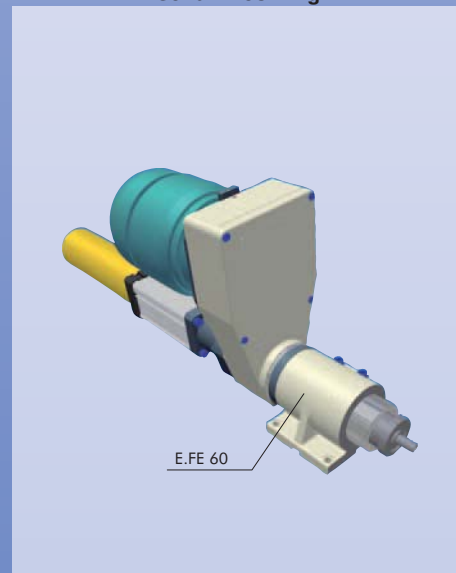
Vertical axis with vertical setting



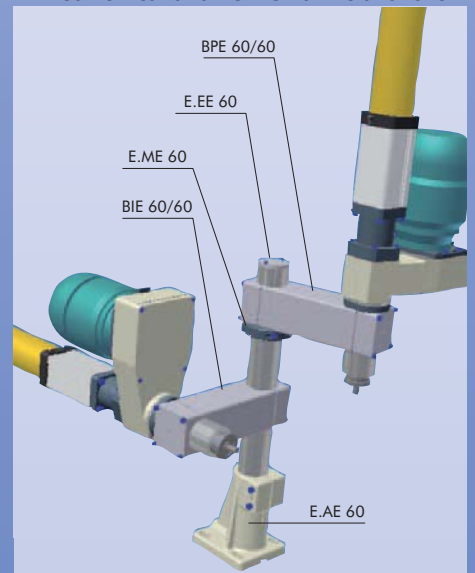
MICROMETRIC STROKE ADJUSTMENT=F.MIC



Collar mounting



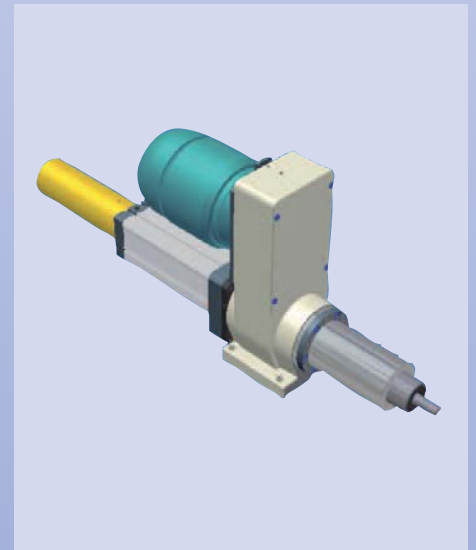
Fixed vertical and horizontal installations





● F.P16.100

	Total stroke mm	Drilling capacity mm		Thrust N		Weight kgs	Standard colour RAL	Pneumatic or hydraulic ports	Electric ports	Run out mm T.I.R.
		Steel R=60	Aluminium R=40 Brass R=50	Pneumatic at 6 bar	Hydraulic at 25bar					
F.P16.100	100	14	20	2540	38	7035	3/8"G	PG9	0.01	
F.I16.100	100	14	20	2800	39	7035	3/8"G	PG9	0.01	



- Electro-pneumatic drilling unit F.P16.100
- Electro-hydraulic drilling unit F.I16.100
- Working stroke 100 mm.
- Total, fast, slow strokes are all independently adjustable.
- Coaxial quill thrust and Hydrocheck unit.
- Deep hole drilling (more than 4 x dia.) is possible with pecking device F.KD.
- For pneumatic cycling use 1/8" BSP 5/2 single acting solenoid valve, and on hydraulic, 4/2 single acting.
- Micrometric stroke adjustment F.MIC on request.

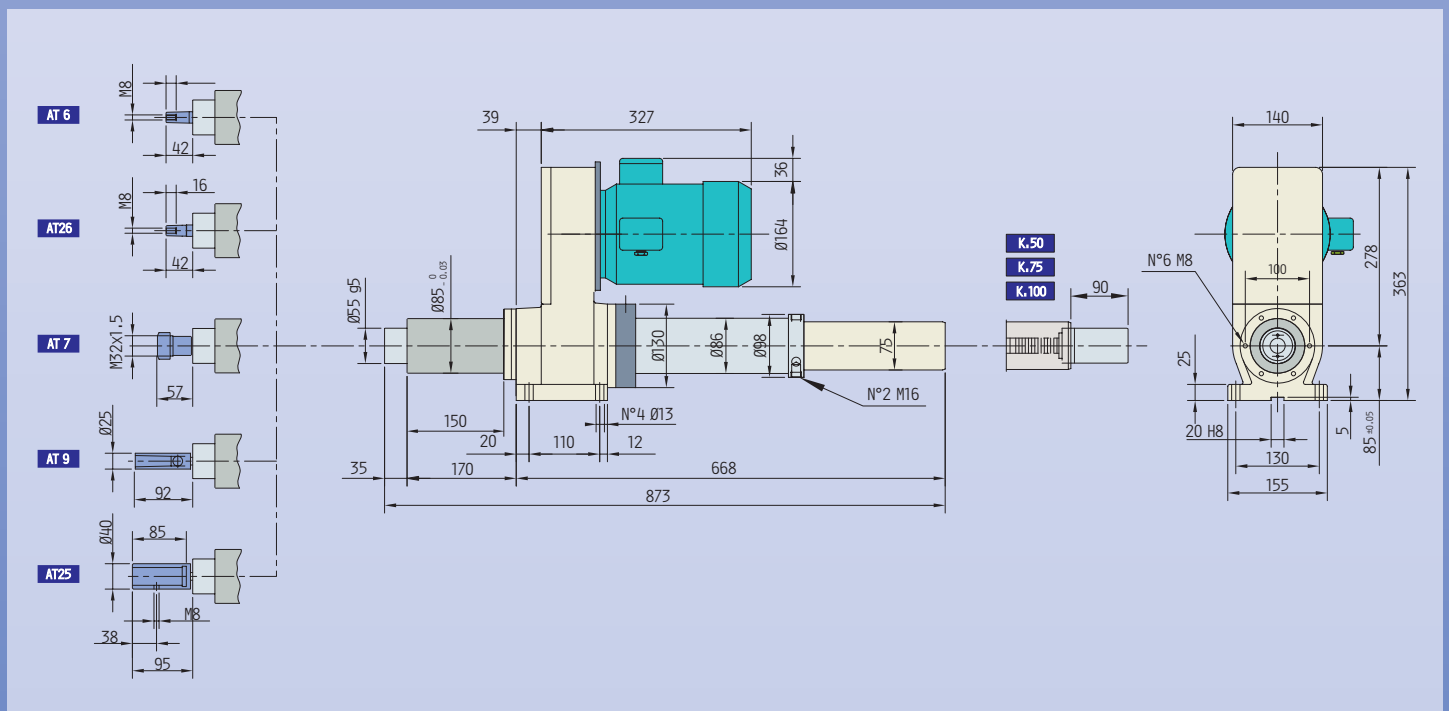
The unit must necessarily be ordered together with the following component:

Output spindles:

- B18 Taper DIN 238 = AT 6 Code 28010026
- N°6 Jacobs taper = AT 26 Code 28010070
- ER25 Collet holder (1 ÷ 16 mm cap.) = AT 7 Code 28010028
- N°2 Morse taper = AT 9 Code 28010032
- 28 mm dia. straight bore DIN 55058 = AT 25 Code 28010036

Hydrocheck units:

- 50 mm stroke K.50 Code 10420025
- 75 mm stroke K.75 Code 10420030
- 100 mm stroke K.100 Code 10420035



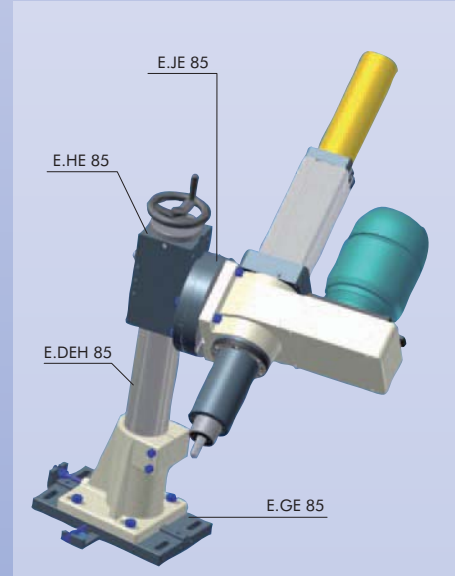


BASIC UNIT		SPEED	
TIPO	CODICE	50Hz	60Hz
FP16.100	10101635	▲ 320	385
	10101637	■ 500	600
	10101639	● 1000	1200
	10101641	■ 1400	1680
	10101643	● 2150	2580
	10101645	● 2800	3360
	10101647	■ 3500	4200
	10101649	● 4200	5040
	10101651	● 4900	5880
	10101653	● 7000	8400
FI16.100	10103105	▲ 320	385
	10103107	■ 500	600
	10103109	● 1000	1200
	10103111	■ 1400	1680
	10103113	● 2150	2580
	10103115	● 2800	3360
	10103117	■ 3500	4200
	10103119	● 4200	5040
	10103121	● 4900	5880
	10103123	● 7000	8400
FPR16.100	10101629	■ 130	155
		■ 215	260
		■ 320	380
		■ 430	515
FIR16.100	10103103	■ 130	155
		■ 215	260
		■ 320	380
		■ 430	515
FP16.100A	10101627	▲ 300	360
FI16.100A	10103127	▲ 500	600
		▲ 750	900
FP16.100C	10101628	● 1100	1320
		● 1700	2040
FI16.100C	10103128	● 3000	3600
		● 4600	5520

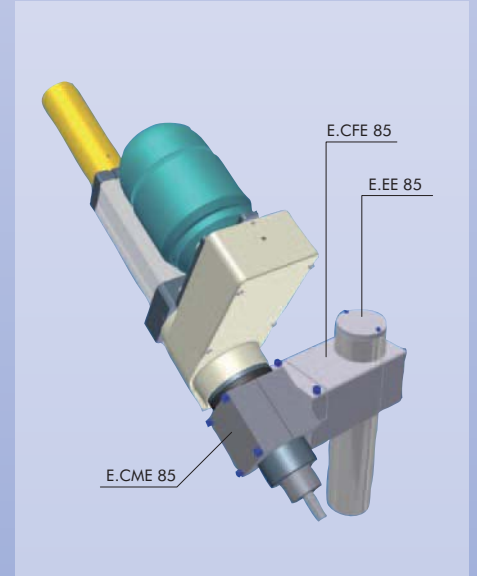
MOTOR

kw 1.1	●	2P	80 FRAME
kw 0.75	■	4P	80 FRAME
kw 0.55	▲	6P	80 FRAME

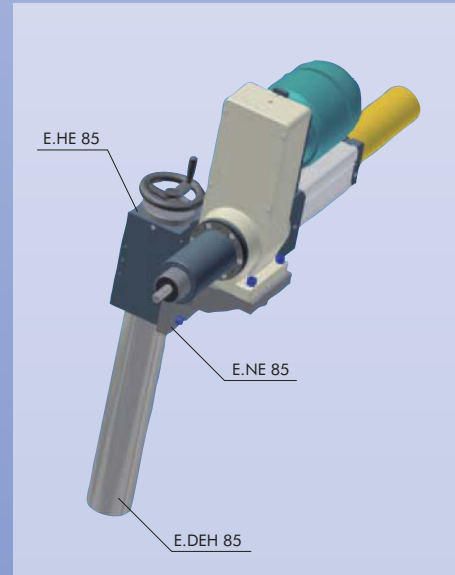
Unit positioning with angle setting and x-y strokes



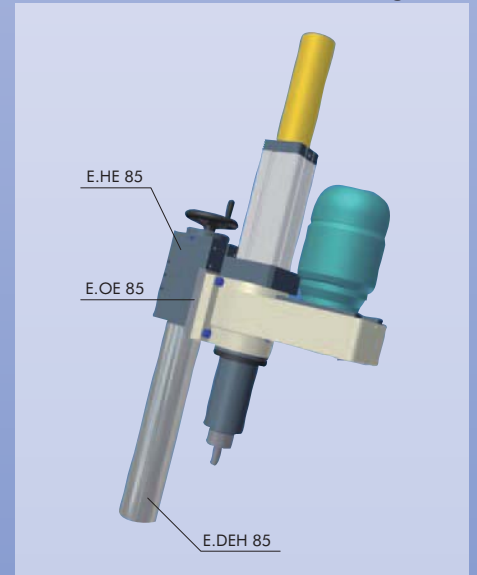
Unit positioning



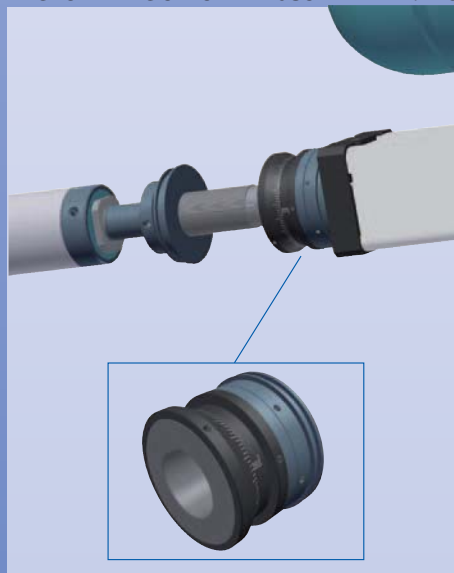
Horizontal axis with vertical setting



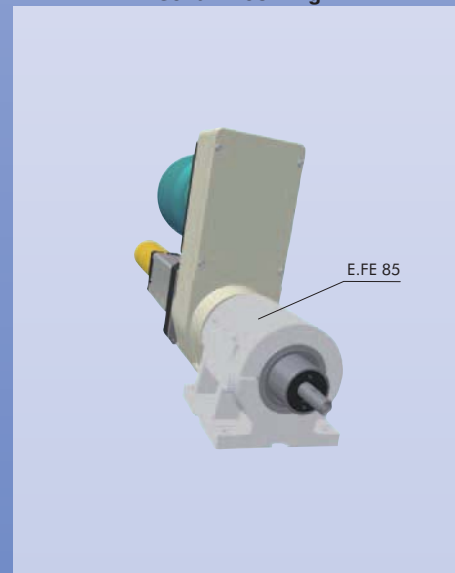
Vertical axis with vertical setting



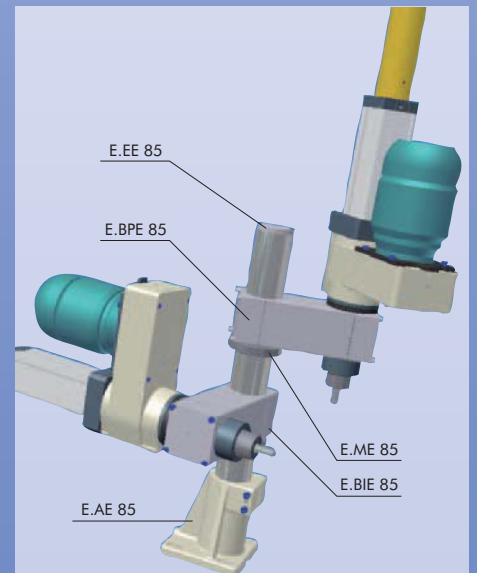
MICROMETRIC STROKE ADJUSTMENT=F.MIC



Collar mounting



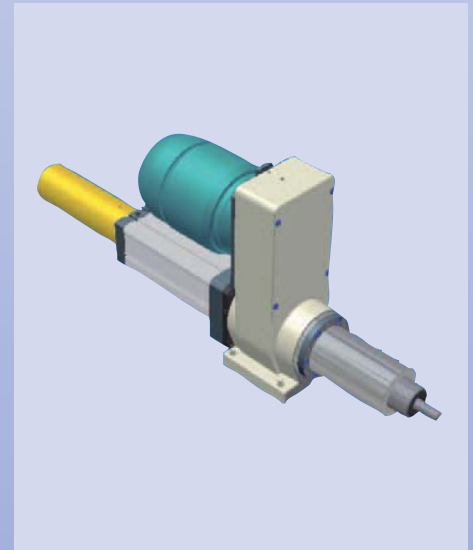
Fixed vertical and horizontal installations





● F.P21.100 - 150

	Total stroke mm	Drilling capacity mm		Thrust N		Weight kgs	Standard colour RAL	Pneumatic or hydraulic ports	Electric ports	Sun out mm T.I.R.
		Steel R=60	Aluminium R=40 Brass R=50	Pneumatic at 6 bar	Hydraulic at 25bar					
F.P21.100	100	20	24	4000	45	7035	3/8" G	PG9	0.01	
F.I21.100	100	20	24	5000	46	7035	3/8" G	PG9	0.01	
F.P21.150	150	20	24	4000	49	7035	3/8" G	PG9	0.01	
F.I21.150	150	20	24	5000	50	7035	3/8" G	PG9	0.01	

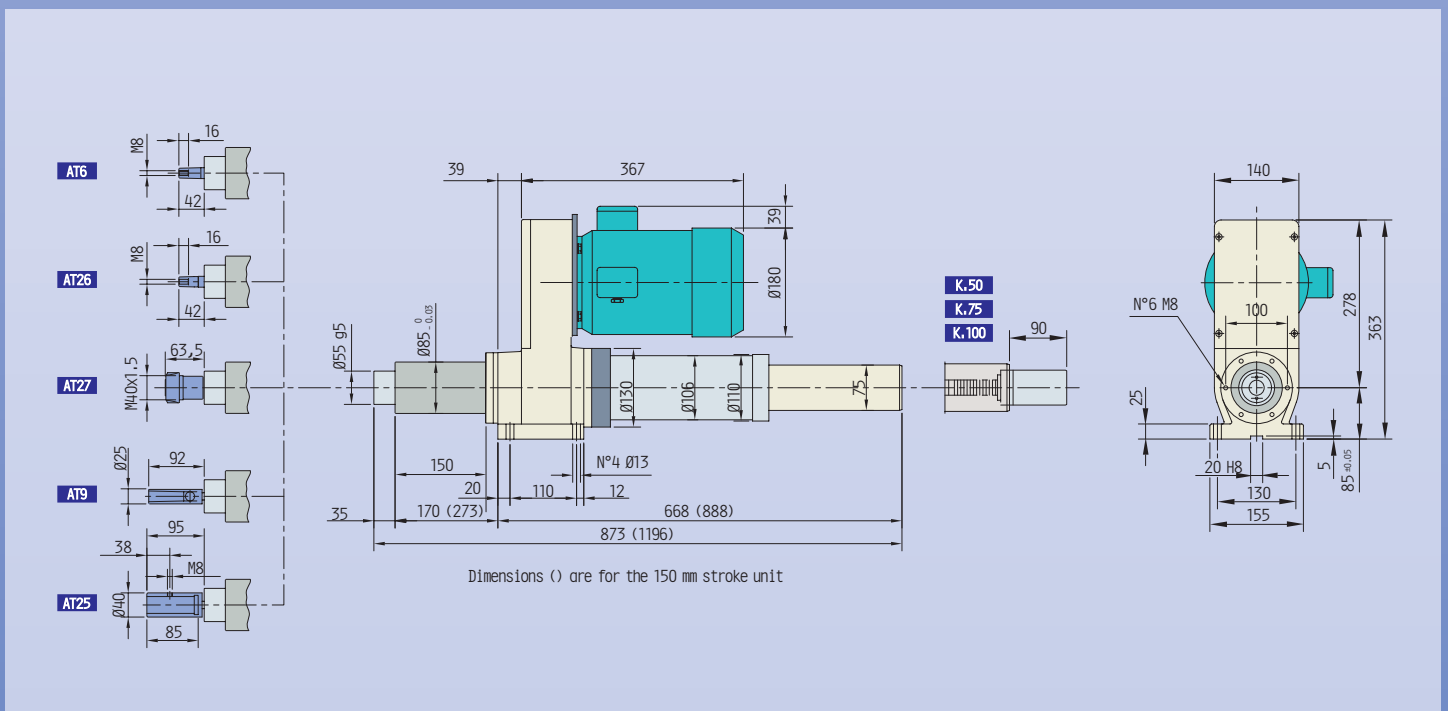


- Electro-pneumatic drilling unit F.P21
- Electro-hydraulic drilling unit F.I21
- Pneumatic drilling unit F.PP21
- Working stroke 100 or 150 mm.
- Total, fast, slow strokes are all independently adjustable.
- Coaxial quill thrust and Hydrocheck unit.
- Deep hole drilling (more than 4 x dia.) is possible with pecking device F.KD.
- For pneumatic cycling use 1/8" BSP 5/2 single acting solenoid valve, and on hydraulic, 4/2 single acting.
- Micrometric stroke adjustment F.MIC on request.

The unit must be necessarily be ordered together with the following components.

Output spindles:
 B18 Taper DIN 238 = AT 6 Code 28010026
 N°6 Jacobs taper = AT 26 Code 28010070
 ER32 Collet holder (2÷20 mm cap.) = AT 27 Code 28010072
 N°2 Morse taper = AT 9 Code 28010032
 28 mm dia. straight bore DIN 55058 = AT25 Code 28010036

Hydrocheck units:
 50 mm stroke K.50 Code 10420025
 75 mm stroke K.75 Code 10420030
 100 mm stroke K.100 Code 10420035





BASIC UNIT

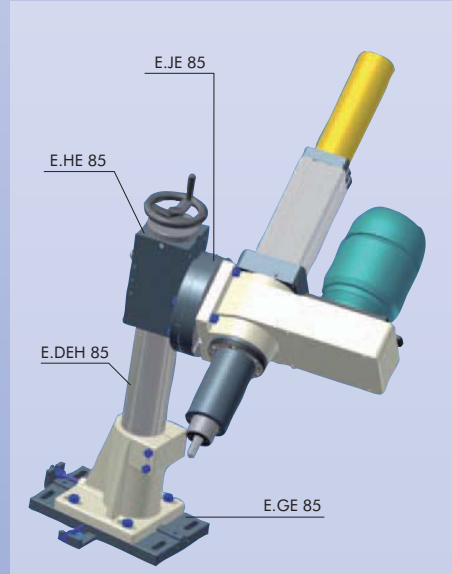
SPEED

TYPE	CODE		50Hz	60Hz
FP21.100	10101053	●	2800	3360
FP21.100	10101055	●	4200	5040
FI21.100	10103021	●	2800	3360
FI21.100	10103022	●	4200	5040
FP21.150	10101057	●	2800	3360
FP21.150	10101059	●	4200	5040
FI21.150	10103023	●	2800	3360
FI21.150	10103024	●	4200	5040
			465	560
FP21.100.A	10101061	■	775	930
FI21.100.A	10103025	■	1160	1390
			1550	1860
			465	560
FP21.150.A	10101063	■	775	930
FI21.150.A	10103026	■	1160	1390
			1550	1860
			85	100
FPR21.100	10101065	▲	145	175
FIR21.100	10103027	▲	215	260
			290	350
			85	100
FPR21.150	10101067	▲	145	175
FIR21.150	10103028	▲	215	260
			290	350

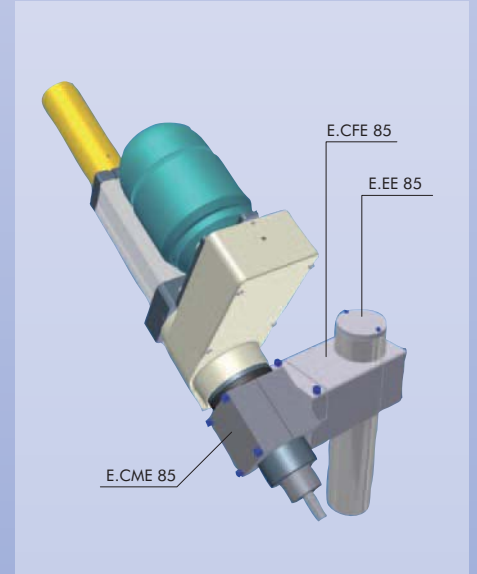
MOTOR

kW 1.1	●	2P	80 FRAME
kW 1.5	■	4P	90 FRAME
kW 1.1	▲	6P	90 FRAME

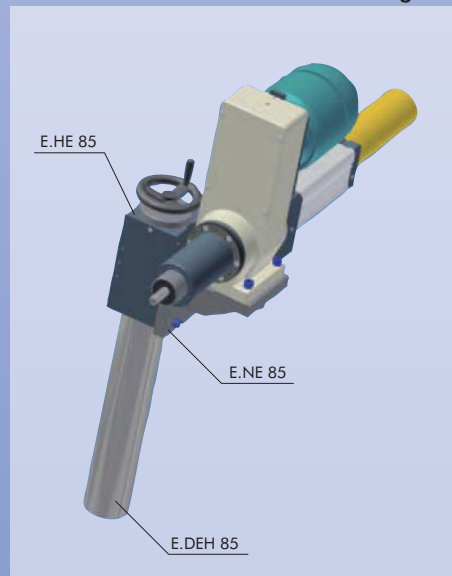
Unit positioning with angle setting and x-y strokes



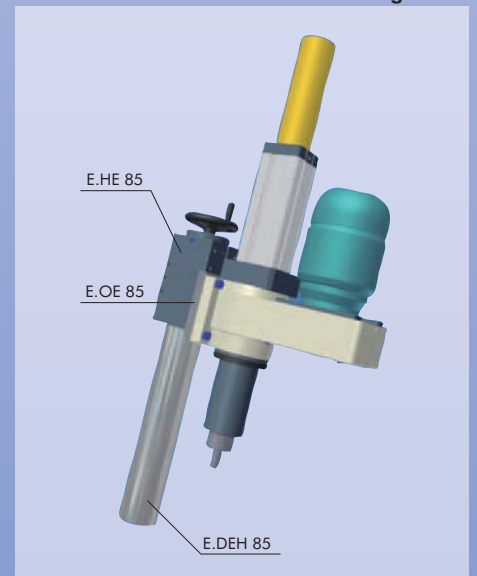
Unit positioning



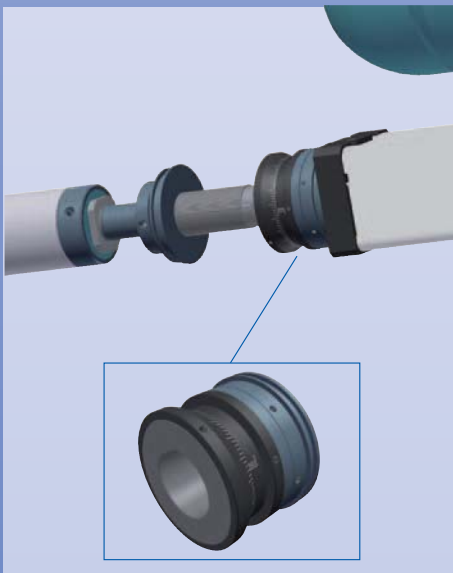
Horizontal axis with vertical setting



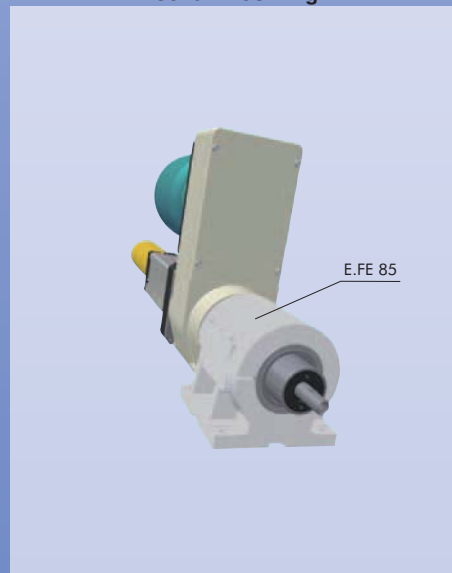
Vertical axis with vertical setting



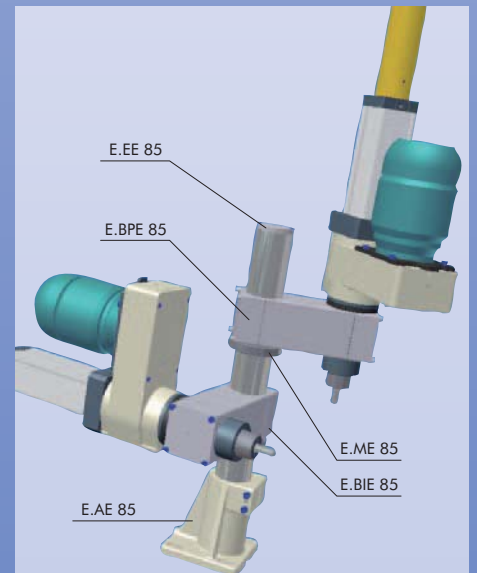
MICROMETRIC STROKE ADJUSTMENT=F.MIC



Collar mounting

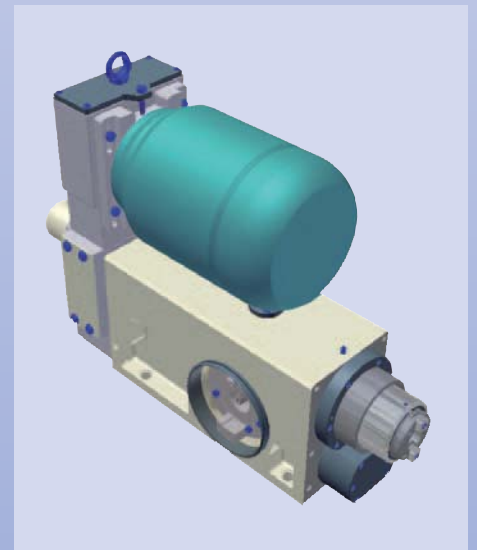


Fixed vertical and horizontal installations



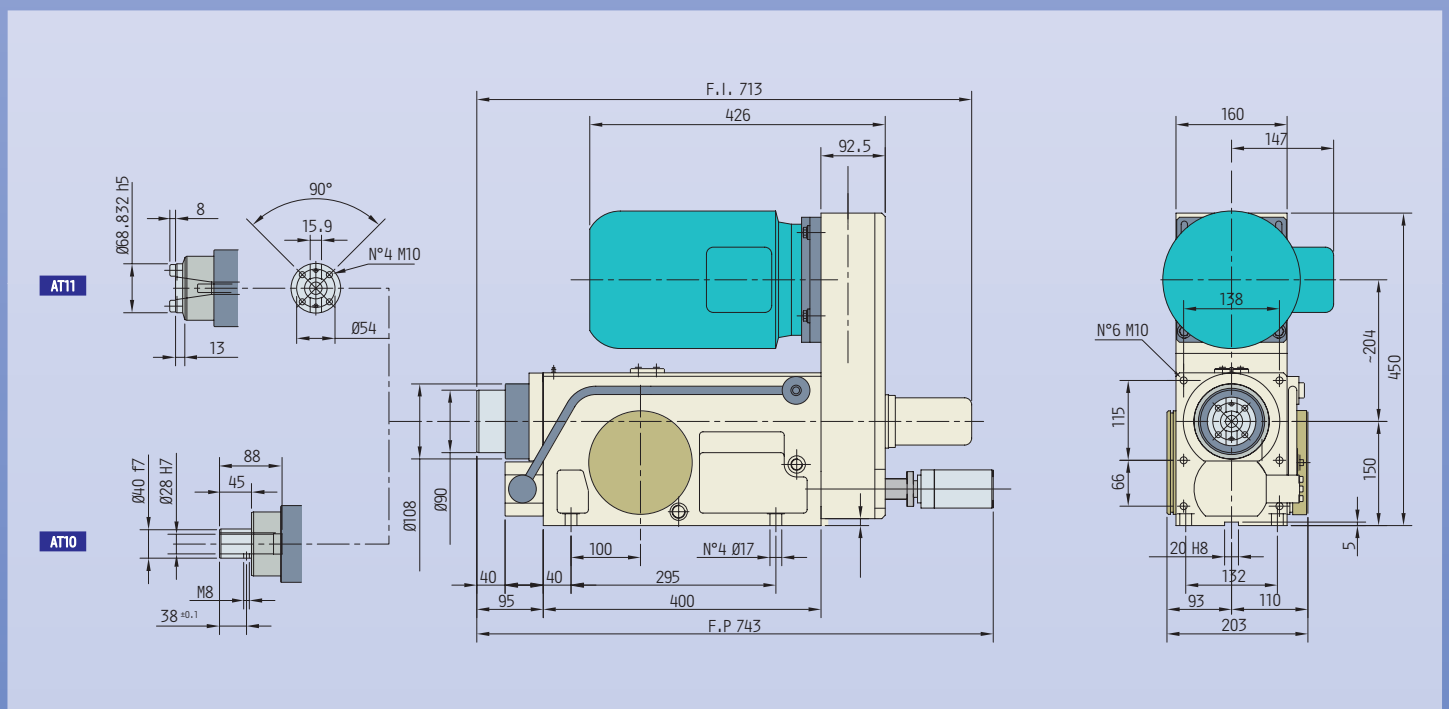
● F.P24.120

	Total stroke mm	Drilling capacity mm		Thrust N		Weight kgs	Standard colour RAL	Pneumatic or hydraulic ports	Electric ports	Sun out mm T.I.R.
		Steel R=60	Aluminium R=40 Brass R=50	Pneumatic at 6 bar	Hydraulic at 25bar					
F.P24.120	120 (40+80)	24	32	5500		85	7035	3/8"G	PG11	0.01
F.I24.100	120	26	34		7700	88	7035	3/8"G	PG11	0.01



- Electro-pneumatic drilling unit F.P24.120
- Electro-hydraulic drilling unit F.I24.120
- Total stroke 120 mm.
Min. fast stroke 40 mm
Max. working stroke 80 mm
- The unit comes complete with stroke limit switches boxed on either right or left side of the unit for more convenient mounting.
- Front mechanical stop by means of an adjustable ring.
- Total, fast, slow strokes are all independently adjustable.
The chain drive "A" allows availability of 4 different speeds.
- For pneumatic cycling use 1/4" BSP 5/2 single acting solenoid valve.
- For hydraulic cycling use a hydro-power pack with fast to slow travel facility.
- The output spindle options are:
28 mm dia. straight bore DIN 55058 = AT10
ISO 30 Taper = AT11

The pneumatic version requires the hydrocheck unit:
100 mm stroke K.100



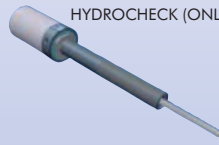


BASIC UNIT

SPEED

TYPE	CODE	50Hz	60Hz
FP24.120.AT10A	10102280	300	360
FP24.120.AT11A	10102290	500	600
FI24.120.AT10A	10104126	▲ 750	900
FI24.120.AT11A	10104130	1200	1440
FP24.AT10.1400	10102281	● 1400	1680
FP24.AT10.2000	10102282	● 2000	2400
FP24.AT10.2800	10102283	● 2800	3400
FP24.AT10.4000	10102284	● 4000	4800
FP24.AT11.1400	10102291	● 1400	1680
FP24.AT11.2000	10102292	● 2000	2400
FP24.AT11.2800	10102293	● 2800	3400
FP24.AT11.4000	10102294	● 4000	4800
FI24.AT10.1400	10104122	● 1400	1680
FI24.AT10.2000	10104123	● 2000	2400
FI24.AT10.2800	10104124	● 2800	3400
FI24.AT10.4000	10104125	● 4000	4800
FI24.AT11.1400	10104135	● 1400	1680
FI24.AT11.2000	10104136	● 2000	2400
FI24.AT11.2800	10104137	● 2800	3400
FI24.AT11.4000	10104138	● 4000	4800

NECESSARY COMPONENTS



HYDROCHECK (ONLY FOR F.P.)

TYPE

K.100
code
10420035

MOTOR

- kW3 2P 100 FRAME
- ▲ kW2.2 6P 100 FRAME

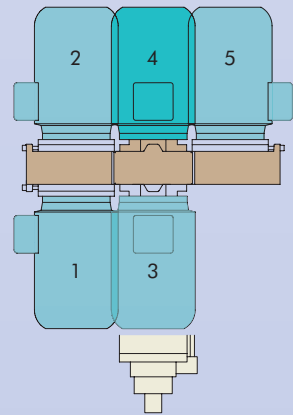
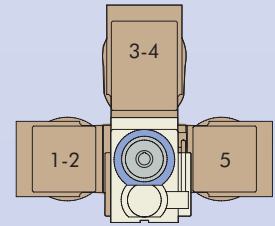
Different power motors can be installed on request

P.N. The unit fitted with "A" drive, includes the following speeds:
300-500-750-1200 (50Hz) - 360-600-900-1440 (60Hz)

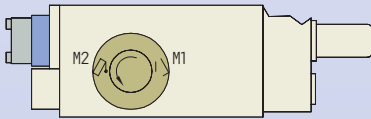
MODULAR DRIVE CASE

Motor can be oriented in the following positions

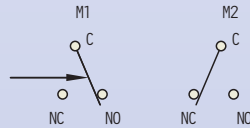
- 1 Side, front, left motor
- 2 Side, rear, left motor
- 3 Top, front motor (standard)
- 4 Top, rear motor
- 5 Side, right, rear motor



ELECTRIC CONTROLS



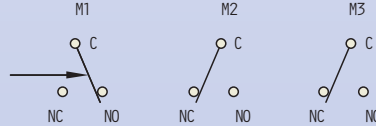
- M1 Rear limit switch
- M2 Front limit switch



F.P24

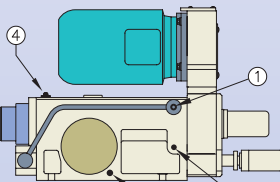


- M1 Rear limit switch
- M2 Fast/slow limit switch
- M3 Front limit switch



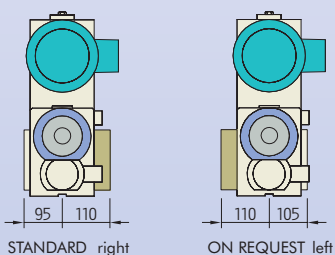
F.I24

CONNECTIONS



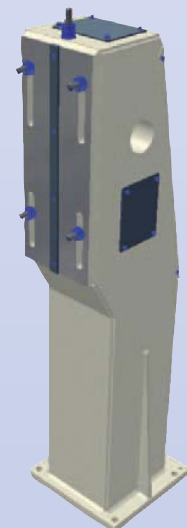
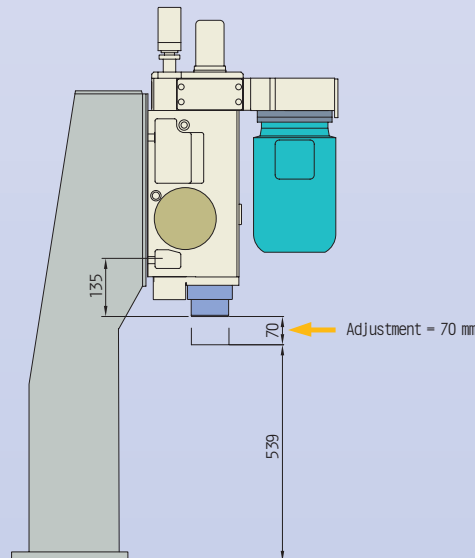
- ① 3/8" BSP Air/oil inlet
- ② 3/8" BSP Air/oil outlet
- ③ PG11 electric cables inlet
- ④ Grease nipple

MICRO SWITCHES POSITION



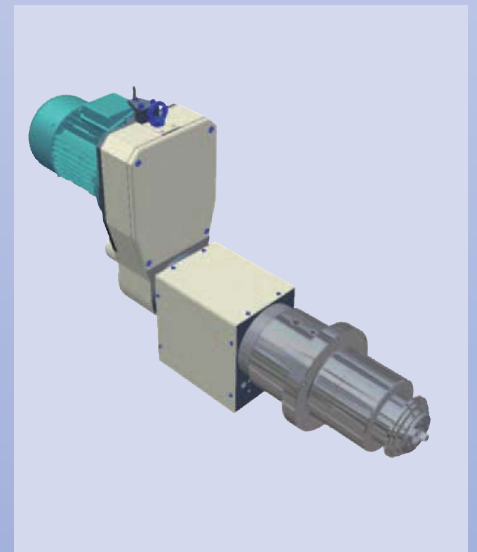
STANDARD right ON REQUEST left
Control micro switches box position

E.KE120 VERTICAL SUPPORT

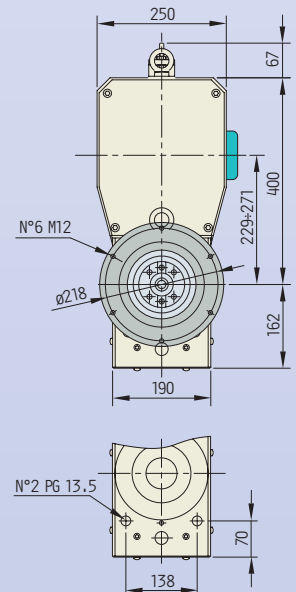
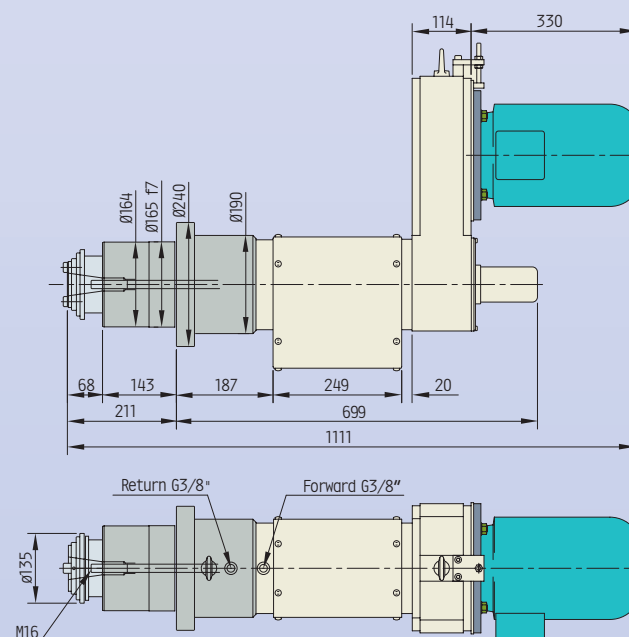
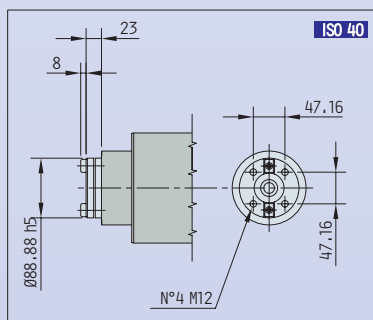


● F.I42.160

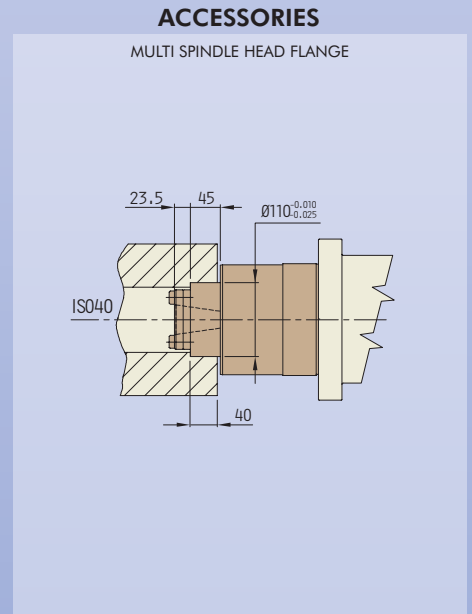
	Total stroke mm	Drilling capacity mm		Thrust N at 25 bar	Max. axial load N		Sect. area cm ²		Hydraulic ports	Electrical ports	Weight kgs
		Steel R=60	Aluminium R=40 Brass R=50		Taper roller bearing	Angular contact bearing	Advance	Return			
F.I42.160	160	42	45	14000*	9000	5000	59	27.5	3/8"G	PG13.5	140



- Electro-hydraulic drilling unit F.I42.160
- Max. working stroke 160 mm.
- The unit can be installed in any position: horizontal, vertical or at an angle.
- The ISO 40 spindle is, in its standard form, supported by a set of taper roller bearing (R.C.).
- Set of pre-loaded angular contact bearings can be fitted on request.
- Spindle drive is via toothed belt or chain (units R1 to R6).
- The quill axial movement is powered by a built in hydraulic cylinder.
- Rapid advance and slow feed are controlled by three adjustable proximity switches (PNP NO+NC) that will operate the relative solenoid valves of the hydraulic power pack.
- A mechanical end stroke stop is adjusted by the relative nut and is ensured by delaying the signal to the quill return solenoid valve.
- Output spindle = ISO 40



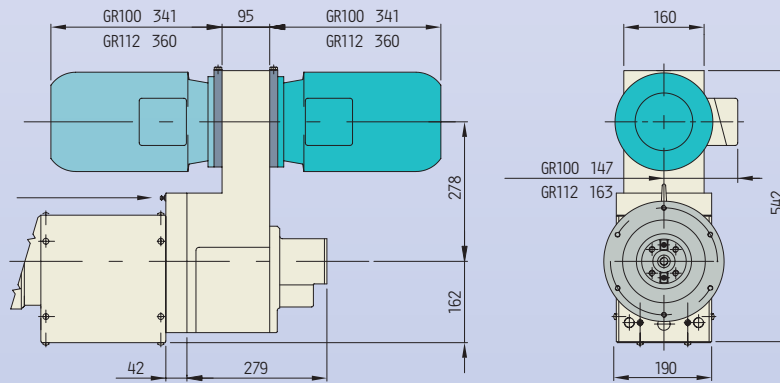
BASIC UNIT		SPEED		GEAR REDUCED SPEEDS		SPEED	
TYPE	CODE	50Hz	60Hz	TYPE	CODE	50Hz	60Hz
F.I42.160.RC.600	10103400	■	600 720	F.I42.160.RC.R1	10103410	▲	100 120
F.I42.160.RC.1000	10103401	■	1000 1200	F.I42.160.RC.R2	10103411	▲	150 180
F.I42.160.RC.1450	10103402	■	1450 1750	F.I42.160.RC.R3	10103412	▲	200 240
F.I42.160.RC.2000	10103403	■	2000 2400	F.I42.160.RC.R4	10103413	▲	300 360
F.I42.160.RC.2800	10103404	●	2800 3360	F.I42.160.RC.R5	10103414	■	460 550
F.I42.160.CO.1000	10103420	■	1000 1200	F.I42.160.RC.R6	10103415	■	590 700
F.I42.160.CO.1450	10103421	■	1450 1750				
F.I42.160.CO.2000	10103422	■	2000 2400				
F.I42.160.CO.2800	10103423	●	2800 3360				
F.I42.160.CO.3500	10103424	●	3500 4200				
F.I42.160.CO.4000	10103425	●	4000 4800				



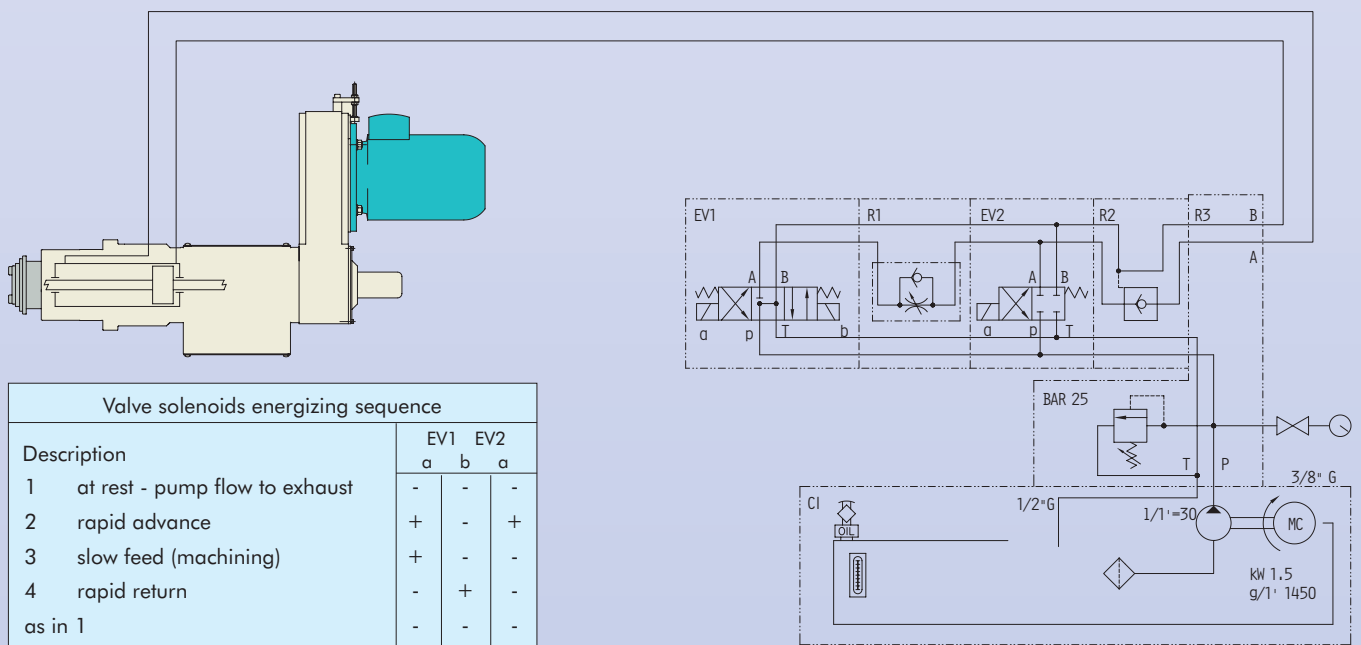
MOTOR

STANDARD (ø 198)			OPTIONAL (ø 224)		
kW 3 2P	100 FRAME	●	kW 4 2P	112 FRAME	●
kW 2.2 4P	100 FRAME	■	kW 4 4P	112 FRAME	■
kW 2.2 6P	112 FRAME	▲	kW 3 6P	112 FRAME	▲

DIMENSION FOR GEAR REDUCED SPEED



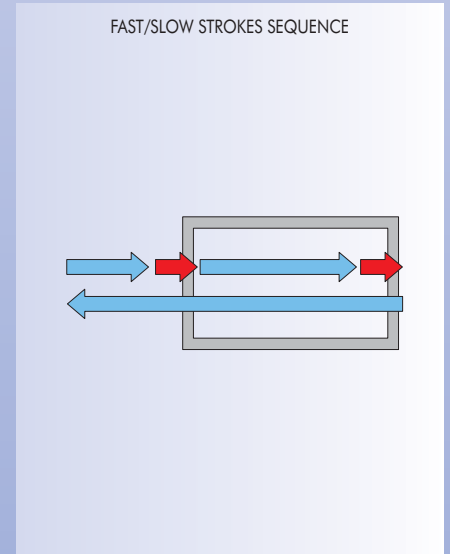
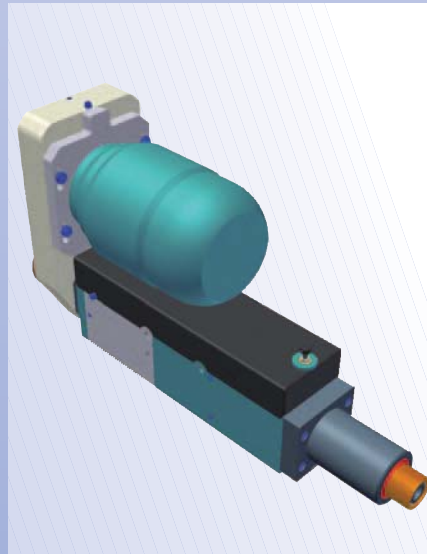
ELECTRO-HYDRAULIC CIRCUIT





F.UPX10.60

- Fast-slow strokes are adjustable by setting the cam inside the unit.
- By machining the control cam, more than one fast/slow strokes are obtained within 60 mm total, for tube drilling.
- Front mechanical stop by means of adjustable ring. F.UP10.60 on request.
- The output spindle can be:
 - B12 Taper DIN238 =CO12
 - B16 Taper DIN238 =CO16
 - ER16 Collet holder =PE16
 - ER25 Collet holder =PE25
 - 16mm. straight bore =NA



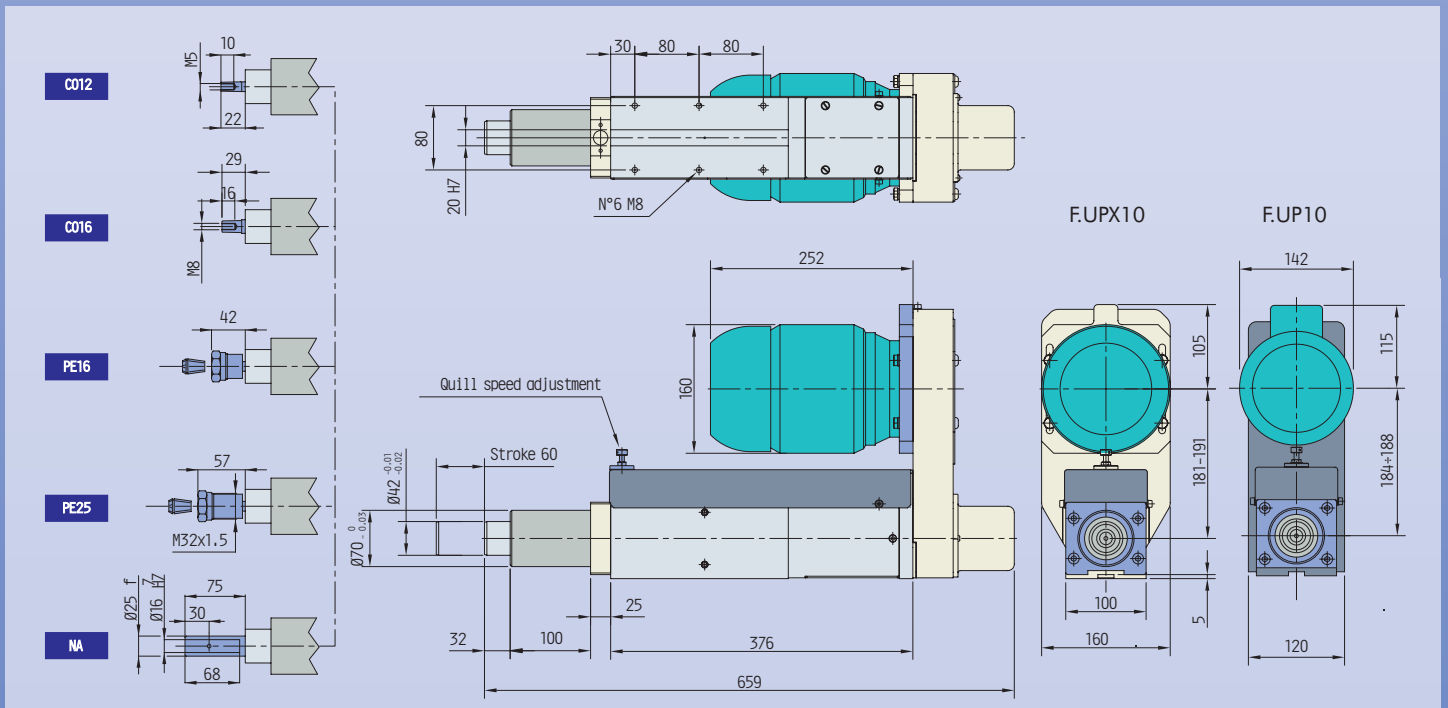
BASIC UNIT

SPEED

TYPE	CODE	50Hz	60Hz
F.UPX10.60	10101713 ▲	650	780
F.UPX10.60	10101714 ■	1000	1200
F.UPX10.60	10101715 ■	1400	1680
F.UPX10.60	10101716 ●	2000	2400
F.UPX10.60	10101717 ●	2800	3360
F.UPX10.60	10101718 ●	3900	4680
F.UPX10.60	10101719 ●	6000	7200
STANDARD			
	KW 0.75 2P	GR.80 ●	
	KW 0.75 4P	GR.80 ■	
	KW 0.55 6P	GR.80 ▲	

TECHNICAL FEATURES

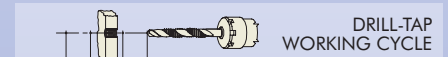
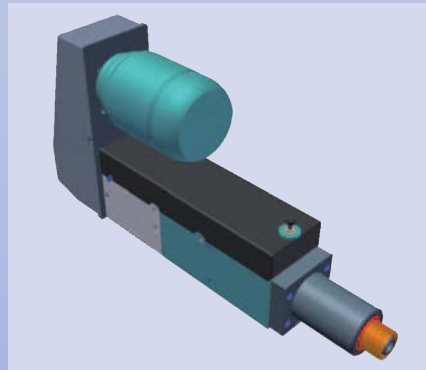
	Total stroke mm	Drilling capacity	Thrust N	Pneumatic at 6 bar	Weight kgs	Standard colour RAL	Pneumatic ports	Electric ports	Run out mm T.I.R.
F.UPX10.60	60	Steel R=60 Aluminium R=40 Brass R=50	1500	33	7035	1/4"G	PG9	0.02	





F.MUP10.60

- Total stroke \rightleftarrows 75 mm: 60mm working stroke 5 mm compensating stroke.
 - Fast-slow strokes are adjustable by setting the cam inside the unit.
 - The unit features a double polarity brake motor and a precision axially compensated collet spindle, and an auxiliary micro-switch.
 - The drill-tap integral bit will, through the appropriate control circuit, perform a complete cycle ending with the tool withdrawal from the work-piece.
- Tool holding options:
- ER20 Compensated collet holder = AT20
 - ER16 Compensated twin spindle head = V2.102.PFM



- 1) START: Quill advances and spindle rotates at high drilling speed
- 2) M3 ACTUATED: Spindle speed change from high to low (tapping)
- 3) M1 ACTUATED: Rotation is reversed and speed changed to high till resting position
- 4) M2 ACTUATED: Spindle is stopped and system reset for next start at high drilling speed

NECESSARY COMPONENTS

	TYPE
TOOL HOLDER	AT20 code 28010040

BASIC UNIT

SPEED

TYPE	CODE	50Hz	60Hz
F.MUP10.60.B	10110004	● 1000 2000	1200 2400
F.MUP10.60.C	10110006	● 1400 2800	1680 3360
F.MUPR10.60.A	10110002	● 330 660	400 800
STANDARD			
kW 1.1/0.80 2/4P 80 FRAME ●			

TECHNICAL FEATURES

	Total stroke mm	Drilling capacity mm	Thrust N						
F.MUP.10.60	60+15	Steel R=60 Aluminium R=40 Brass R=50	1500	Pneumatic at 6 bar	Weight kgs	Standard colour RAL	Pneumatic ports	Electric ports	Run out mm T.I.R.
		M12 ø10	M14 ø12	33	7035	1/4"G	PG9	0.01	

