

**Navaho**<sup>®</sup>  
by alfavaria

# AUTOMATION

COMPACT UNITS FOR  
• DRILLING





# DRILLING UNITS

UNIT	PAGE	DRIVE	FEED	DRILLING CAPACITY IN [ø, mm]		
				STEEL	ALUMINIUM/ BRASS	PLASTICS/ WOOD
HPDU	4	Pneumatic Turbine	None	1,5	3	4
PDU-22	6	Pneumatic 5-vane Motor	None	8	12	22
PPDU-22	8	Pneumatic 5-vane Motor	None	6	9	14
PDU-33	10	Pneumatic 5-vane Motor	None	13	16	26
AHDU-22	12	Pneumatic 5-vane Motor	Controlled, Air Hydraulic	6	11	16
AHPDU-22	14	Pneumatic 5-vane Motor	Controlled, Air Hydraulic	5	9	12
AODU-21	16	Pneumatic 5-vane Motor	Pneumatic	6	11	16
AHDU-33	18	Pneumatic 5-vane Motor	Controlled, Air Hydraulic	10	14	20
EPDU-48	20	Electric	Controlled, Air Hydraulic	16	25	35
EHDU-55	22	Electric	Controlled, Hydraulic	25	35	40



# HIGH PRECISION DRILLING UNIT HPDU-11

## AND HIGH SPEED GRINDER HPDU-100

Precision drilling/grinding unit with a basic design based on a patented air-driven turbine motor. The drive unit is powered without intermediate gears and features variable speed control up to 80 000 rpm. A special high-speed precision bearing makes the drilling unit extremely quiet with a sound level of 67 dB (A).. designed for lubrication-free operation.

- 80 000 RPM
- PRECISION UNIT FOR DRILLING, DEBURRING ETC
- HIGHLY STABLE BEARING SYSTEM
- LOW NOISE LEVEL (67 dB(A))
- HPDU-100: ALSO AVAILABLE AS HIGH SPEED GRINDER (HPDU-100), WHICH INCLUDES A HOSE SUITABLE FOR MANUAL HANDLING OF THE UNIT (SEE PICTURE).



HPDU-11



HPDU-100

### Guidelines for choice of unit

[Ø, mm]

DRILLING UNIT	CAPACITY IN STEEL	CAPACITY IN ALUMINIUM/BRASS	CAPACITY IN WOOD/PLASTICS
HPDU-11	1.5	3	4

### Performance specifications at 6.3 bar

Power	0.08 kW	Min. CC Spindle Spacing	54 mm	Air consumption	<0.12 Nm <sup>3</sup> /min
Speed	<80 000 rpm	Run-out at spindle nose (max.)	0.007 mm	Sound level	67 dB(A)
Torque	0.02 Nm	Working pressure range	4–6.3 Bar		



# PNEUMATIC DRILLING UNIT PDU-22 SK

The unit consists of an air motor, a gear box and a body. The design is compact as well as robust. P DU -22 SK comes in a wide range of speeds, and is available for lubrication-free operation.

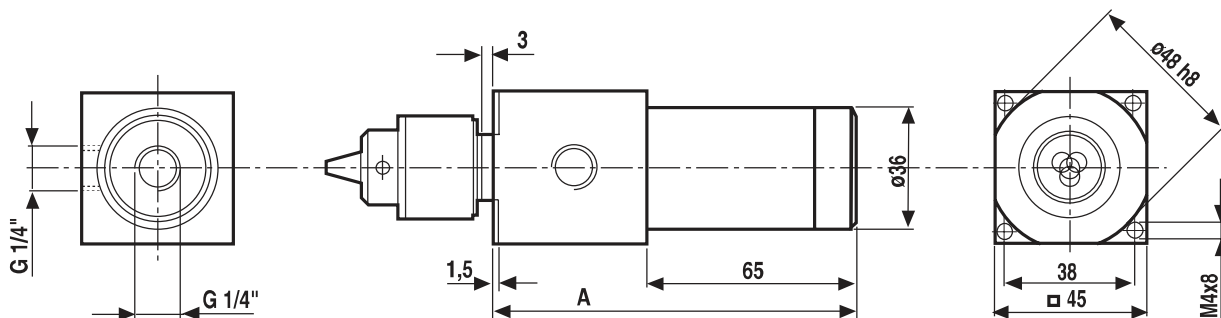
- STURDY AND COMPACT DESIGN
- WIDE RANGE OF RPMs
- DIRECTED EXHAUST
- CHUCK ALTERNATIVES UP TO Ø20 MM
- IS AVAILABLE IN COUNTER CLOCKWISE ROTATION



Guidelines for choice of unit													[Ø, mm]
DRILLING UNIT		CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN WOOD/PLASTICS			
No of Spindles		1	2	3	4	1	2	3	4	1	2	3	4
LOW SPEED	PDU-22/5 SK	8	6	5	4	12	9	8	7	22	11	9	8
	PDU-22/8 SK	8	5	5	4	12	9	8	7	20	11	9	7
	PDU-22/11 SK	6	4	4	4	10	8	7	6	16	11	9	7
HIGH SPEED	PDU-22/22 SK	6	3	3	3	9	7	6	5	14	9	8	6
	PDU-22/36 SK	5	2.5	2.5	2	8	6	6	5	12	8	7	5
	PDU-22/49 SK	4	1.5	1.5	1.5	6	5	5	4	10	6	6	4
	PDU-22/220SK	2				3				4			




Performance specifications at 6.3 Bar					
Power	0.25 kW	Run-out at spindle nose (max.)	0.03 mm	Air consumption	<0.3 Nm <sup>3</sup> /min
Min. Center to Center Spacing		Working pressure range	6–7 Bar	Sound level	70 dB(A)
Single Spindle	45 mm				
Double-Spindle Head	11 mm				

DRILLING UNIT	SPEED (IDLE)	[RPM]	SPEED (AT MAX OUTPUT)	[RPM]	TORQUE (AT MAX OUTPUT)	[NM]
LOW SPEED	PDU-22/5 SK	500	250		9.9	
	PDU-22/8 SK	800	400		6.0	
	PDU-22/11 SK	1 100	550		4.3	
HIGH SPEED	PDU-22/22 SK	2 200	1 100		2.4	
	PDU-22/36 SK	3 600	1 800		1.5	
	PDU-22/49 SK	4 900	2 450		1.1	
	PDU-22/220SK	22 000	11 000		0.25	


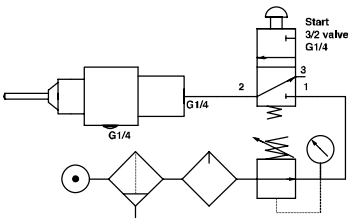


DRILLING UNIT	A	[MM]	WEIGHT	[KG]
LOW SPEED	PDU-22/5 SK	141	1.5	
	PDU-22/8 SK			
	PDU-22/11SK			
HIGH SPEED	PDU-22/22 SK	109	0.9	
	PDU-22/36 SK			
	PDU-22/49 SK			
	PDU-22/22OSK			

Necessary components

CHUCKS	TYPE	PAGE
	Key chucks Ø 0.5-6.5 mm (Standard chuck) Ø 0.8-10.0 mm	
	Collet Chucks Ø 1.0-10.0 mm Ø 3.0- 20.0 mm	
COLLETS	TYPE	PAGE
	DA 200, Ø 1.0-10.0 mm DA 180, Ø 3.0- 20.0 mm	

Accessories

MULTI-SPINDLE HEADS	TYPE	PAGE
	Adjustable heads	
CONTROLS	TYPE	PAGE
	Controls for PDU units	

# PNEUMATIC PRECISION DRILLING UNIT PPDU-22 SK

The unit is a precision drilling unit, equipped with a precision chuck. Thanks to separate and double ball bearings run-out amounts to a maximum of 0.01 mm. Its design is compact as well as robust. The PPDU -22 SK comes in a wide range of speeds, and is available for lubrication-free operation.

- HIGH PRECISION
- STURDY AND COMPACT DESIGN
- WIDE RANGE OF RPM:s
- DIRECTED EXHAUST



## Guidelines for choice of unit

[Ø, mm]

DRILLING UNIT	CAPACITY IN STEEL	CAPACITY IN ALUMINIUM/BRASS	CAPACITY IN WOOD/PLASTICS
PPDU-22/22 SK	6	9	14
PPDU-22/36 SK	5	8	12
PPDU-22/49 SK	4	6	10
PPDU-22/220 SK	2	3	4

## Performance specifications at 6.3 Bar

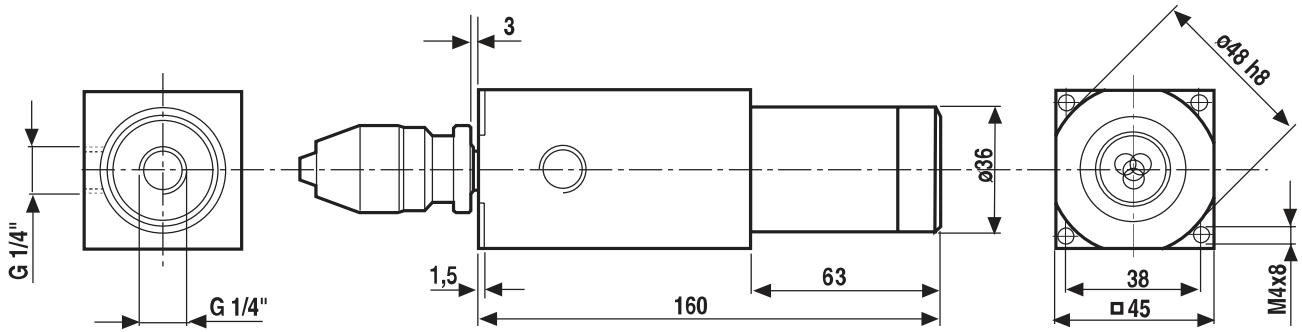
Power	0.25 kW	Run-out at spindle nose (max.)	0.01 mm	Air consumption	<0.3 Nm <sup>3</sup> /min
Min. CC Spindle Spacing	45 mm	Working pressure range	6–7 Bar	Sound level	70 dB(A)

DRILLING UNIT	SPEED (IDLE)	[RPM]	SPEED (AT MAX OUTPUT)	[RPM]	TORQUE (AT MAX OUTPUT)	[NM]
PPDU-22/22 SK	2 200		1 100		2.4	
PPDU-22/36 SK	3 600		1 800		1.5	
PPDU-22/49 SK	4 900		2 450		1.1	
PPDU-22/220 SK	22 000		11 000		0.25	






## Dimensions

[mm]

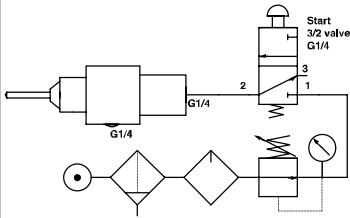


WEIGHT 1.7 KG

## Necessary components

CHUCKS	TYPE	PAGE
	Precision chucks Ø 0–3.0 mm Ø 0–5.0 mm (Standard chuck) Ø 0–8.0 mm	
	Precision Collet Chuck ER 11 Ø 0.5–8.0 mm	
COLLETS	TYPE	PAGE
	ER 11 Ø 0.5–8.0 mm	

## Accessories

CONTROLS	TYPE	PAGE
	Controls for PDU SK-units	

# PNEUMATIC DRILLING UNIT PDU-33

The unit consists of an air motor, a gear box and a body. The design is compact as well as robust. PDU-33 SK comes in a wide range of speeds, and is available for lubrication-free operation.

- STURDY AND COMPACT DESIGN
- WIDE RANGE OF RPMs
- DIRECTED EXHAUST
- CHUCK ALTERNATIVES UP TO Ø20 MM
- IS AVAILABLE IN COUNTER CLOCKWISE ROTATION



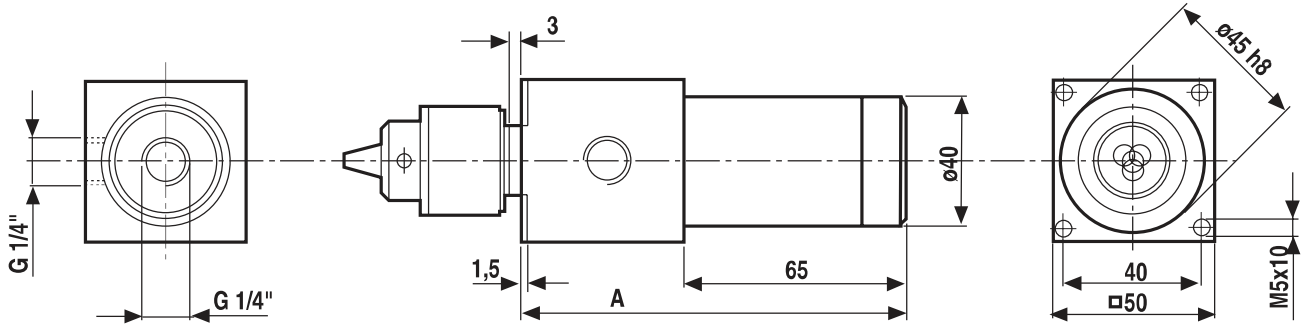
Guidelines for choice of unit													[Ø, mm]
DRILLING UNIT		CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN WOOD/PLASTICS			
No of Spindles		1	2	3	4	1	2	3	4	1	2	3	4
LOW SPEED	PDU-33/5	13	7	6	6	16	10	10	9	26	12	10	10
	PDU-33/7	13	7	6	6	16	10	10	8	22	12	10	10
	PDU-33/13	10	7	6	5	14	10	8	8	20	12	10	10
HIGH SPEED	PDU-33/26	9	6	5	4	12	9	8	6	16	10	10	9
	PDU-33/33	6	5	4	3	9	7	6	6	13	10	8	8
	PDU-33/60	4	4	3	3	7	5	5	5	10	8	6	5
	PDU-33/210	2.5				4				5			

Performance specifications at 6.3 Bar			
Power	0.36 kW	Run-out at spindle nose (max.)	0.05 mm
Min. Center to Center Spacing		Working pressure range	6–7 Bar
Single Spindle	50 mm		
Double-Spindle Head	11 mm		
Air consumption	<0.5 Nm <sup>3</sup> /min	Sound level	70 dB(A)

DRILLING UNIT	SPEED (IDLE) [RPM]	SPEED (AT MAX OUTPUT) [RPM]	TORQUE (AT MAX OUTPUT) [NM]
LOW SPEED	PDU-33/5	500	250
	PDU-33/7	700	350
	PDU-33/13	1 300	650
HIGH SPEED	PDU-33/26	2 600	1 300
	PDU-33/33	3 300	1 650
	PDU-33/60	6 000	3 000
	PDU-33/210	21 000	10 500




## Dimensions

[mm]


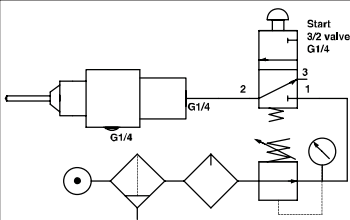


DRILLING UNIT	A	[MM]	WEIGHT	[KG]
LOW SPEED	PDU-33/5	149	2.0	
	PDU-33/7			
	PDU-33/13			
HIGH SPEED	PDU-33/26	115	1.4	
	PDU-33/33			
	PDU-33/60			
	PDU-33/210			

## Necessary components

CHUCKS	TYPE	PAGE
	Key chucks Ø 0.8–10.0 mm (Standard chuck)	
	Collet Chucks Ø 1.0–10.0 mm Ø 3.0–20.0 mm	
COLLETS	TYPE	PAGE
	DA 200 Ø 1.0–10.0 mm DA 180 Ø 3.0–20.0 mm	

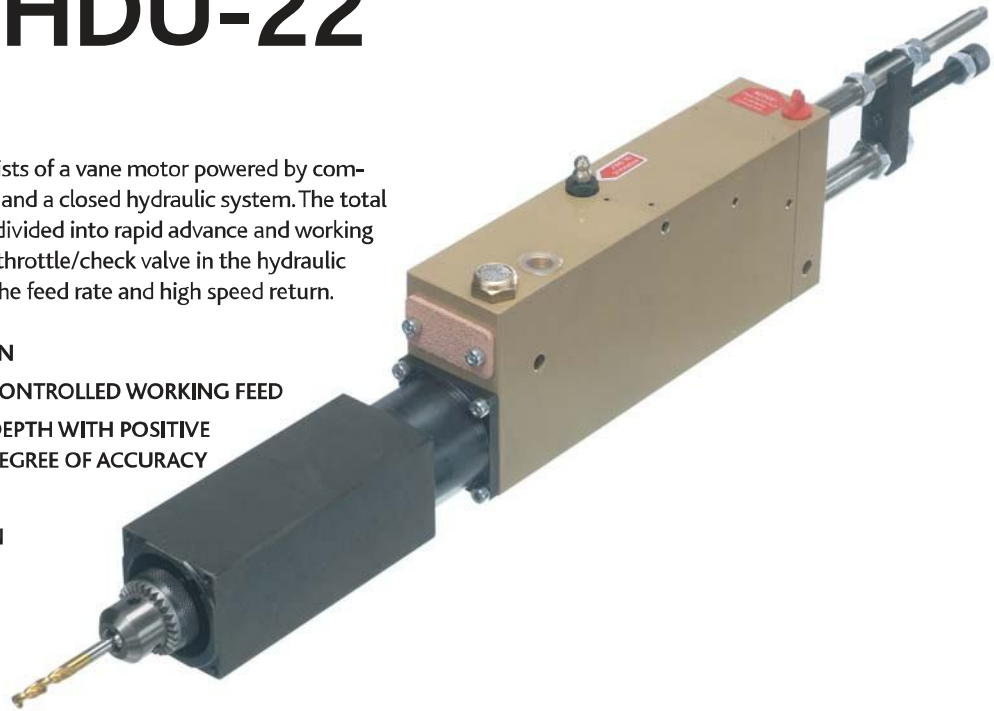
## Accessories

MULTI-SPINDLE HEADS	TYPE	PAGE
	Adjustable heads	
CONTROLS	TYPE	PAGE
	Controls for PDU units	

# AIR HYDRAULIC DRILLING UNIT AHDU-22

The basic design of this unit consists of a vane motor powered by compressed air, a pneumatic cylinder, and a closed hydraulic system. The total stroke length can be variably subdivided into rapid advance and working feed across the whole range. The throttle/check valve in the hydraulic system permits exact setting of the feed rate and high speed return.

- EXTREMELY COMPACT DESIGN
- BUILT-IN HYDRAULICS FOR CONTROLLED WORKING FEED
- ADJUSTMENT OF DRILLING DEPTH WITH POSITIVE STOP GUARANTEES A HIGH DEGREE OF ACCURACY
- LOW NOISE LEVEL
- MINIMAL AIR CONSUMPTION



Guidelines for choice of unit													[Ø, mm]
DRILLING UNIT	CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN WOOD/PLASTICS				
	No of Spindles	1	2	3	4	1	2	3	4	1	2	3	4
AHDU(B)-22/5	6	5	2.5	1.5	11	8	6	4	16	11	9	7	
AHDU(B)-22/8	6	5	2.5	1.5	11	8	6	4	16	11	9	7	
AHDU(B)-22/11	6	4	2.5	1.5	10	8	6	4	14	11	9	7	
AHDU(B)-22/22	5	3	2	1.5	9	7	5	4	12	9	8	6	
AHDU(B)-22/36	4	2.5	1.5	1	7	6	4	3	10	8	7	5	
AHDU(B)-22/49	3	1.5	1.5	1	6	4	3	2.5	8	6	6	4	
AHDU(B)-22/150	2				3				4				
AHDU-22/220	2				3				4				

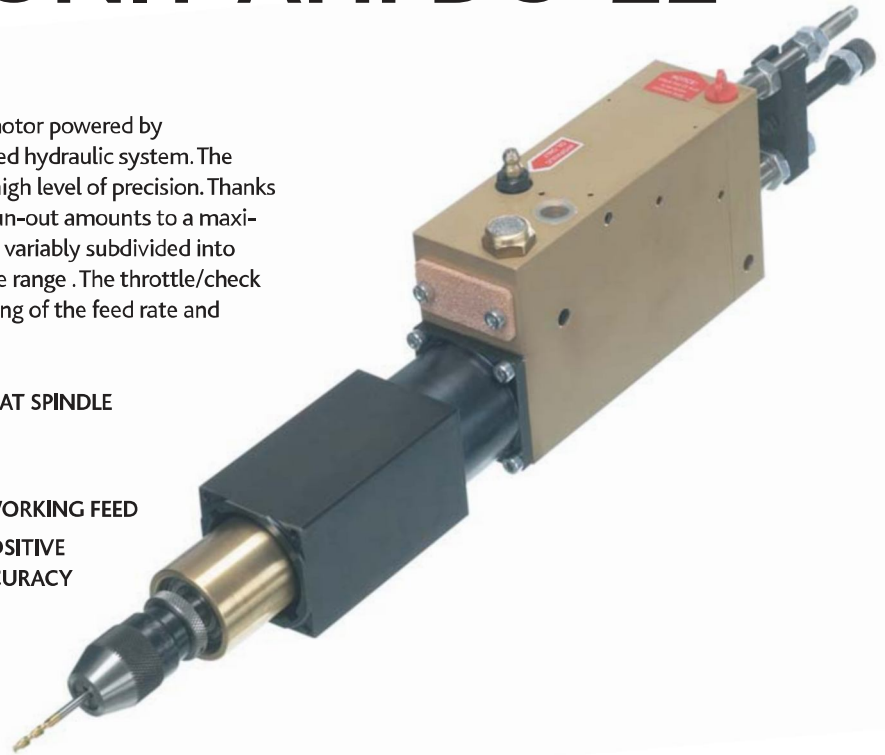
Performance specifications at 6.3 Bar			
Thrust (max.)	600 N	Min. Center to Center Spacing	Controlled feed rate >0.01 m/min
Power	0.25 kW	Single Spindle 45 mm	Working pressure range 6-7 Bar
Stroke (max.)		Double-Spindle Head 11 mm	Air consumption <0.3 Nm <sup>3</sup> /min
AHDU 100% controlled	30 mm	Run-out at spindle nose (max.) 0.03 mm	Sound level 70 dB(A)
AHDUB total	60 mm	Depth accuracy +/- 0.01 mm	
of which is controlled	45 mm	Rapid advance rate 10 m/min	

DRILLING UNIT	SPEED [IDLE] [RPM]	SPEED [AT MAX OUTPUT] [RPM]	TORQUE (AT MAX OUTPUT) [NM]
AHDU(B)-22/5	500	250	9.9
AHDU(B)-22/8	800	400	6.0
AHDU(B)-22/8	1 100	550	4.3
AHDU(B)-22/22	2 200	1 100	2.4
AHDU(B)-22/36	3 600	1 800	1.5
AHDU(B)-22/49	4 900	2 450	1.1
AHDU(B)-22/150	15 000	7 500	0.25
AHDU-22/220	22 000	11 000	0.25



# AIR HYDRAULIC PRECISION DRILLING UNIT AHPDU-22

The basic design of this unit consists of a vane motor powered by compressed air, a pneumatic cylinder, and a closed hydraulic system. The AH DPU -22 has a precision chuck for an extra high level of precision. Thanks to precision, separate and double ball bearings run-out amounts to a maximum of 0.01 mm. The total stroke length can be variably subdivided into rapid advance and working feed across the whole range. The throttle/check valve in the hydraulic system permits exact setting of the feed rate and high speed return.



- PRECISION DESIGN WITH A MAX RUN-OUT AT SPINDLE NOSE OF 0.01 MM
- EXTREMELY COMPACT DESIGN
- BUILT-IN HYDRAULICS FOR CONTROLLED WORKING FEED
- ADJUSTMENT OF DRILLING DEPTH WITH POSITIVE STOP GUARANTEES A HIGH DEGREE OF ACCURACY
- LOW NOISE LEVEL
- MINIMAL AIR CONSUMPTION

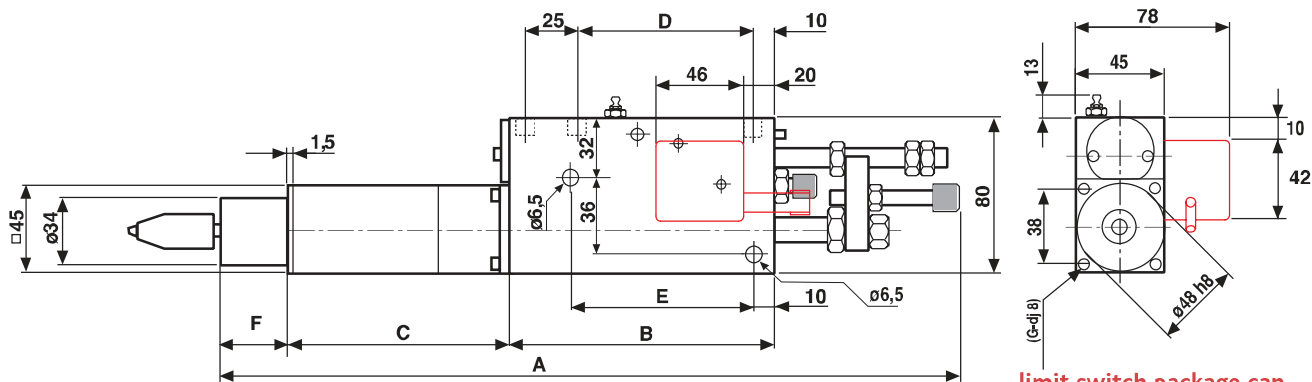
Guidelines for choice of unit			[Ø, mm]
DRILLING UNIT	CAPACITY IN STEEL	CAPACITY IN ALUMINIUM/BRASS	CAPACITY IN WOOD/PLASTICS
AHDPU(B)-22/22	5	9	12
AHDPU(B)-22/36	4	7	10
AHDPU(B)-22/49	3	6	8
AHDPU(B)-22/150	2	3	4
AHDPU-22/220	2	3	4

Performance specifications at 6.3 Bar			
Thrust (max.)	600 N	Min. CC Spindle Spacing	45 mm
Power	0.25 kW	Run-out at spindle nose (max.)	0.01 mm
Stroke (max.)		Depth accuracy +/-	0.01 mm
AHDPU 100% controlled	30 mm	Rapid advance rate	10 m/min
AHDPU total	60 mm	Controlled feed rate	>0.01 m/min
of which is controlled	45 mm	Working pressure range	6–7 Bar
		Air consumption	<0.3 Nm <sup>3</sup> /min
		Sound level	70 dB(A)

DRILLING UNIT	SPEED (IDLE) [RPM]	SPEED (AT MAX OUTPUT) [RPM]	TORQUE (AT MAX OUTPUT) [NM]
AHDPU-22/22	2 200	1 100	2.4
AHDPU-22/22	2 200	1 100	2.4
AHDPU-22/36	3 600	1 800	1.5
AHDPU-22/36	3 600	1 800	1.5
AHDPU-22/49	4 900	2 450	1.1
AHDPU-22/49	4 900	2 450	1.1
AHDPU-22/150	15 000	7 500	0.25
AHDPU-22/220	22 000	11 000	0.25

## Dimensions





[mm]



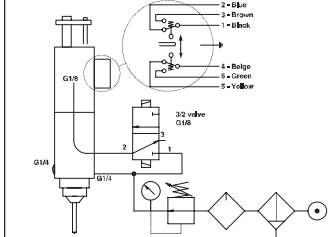
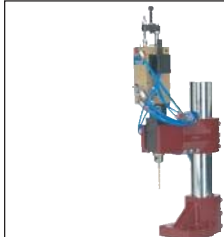
limit switch package can be mounted on either side.

DRILLING UNIT	A	[MM]	B	[MM]	C	[MM]	D	[MM]	E	[MM]	F	[MM]	WEIGHT	[KG]
AHPDU-22/22	380		140		116		94.5		107		32		4.7	
AHPDUB-22/22	485		200		146		154.5		167		2		6.7	
AHPDU-22/36	380		140		116		94.5		107		32		4.7	
AHPDUB-22/36	485		200		146		154.5		167		2		6.7	
AHPDU-22/49	380		140		116		94.5		107		32		4.7	
AHPDUB-22/49	485		200		146		154.5		167		2		6.7	
AHPDUB-22/150	485		200		146		154.5		167		2		6.7	
AHPDU-22/220	380		140		116		94.5		107		32		4.7	

## Necessary components

CHUCKS	TYPE	PAGE
	Precision chucks Ø 0–3.0 mm Ø 0–5.0 mm (Standard chuck) Ø 0–8.0 mm	
COLLETS	TYPE	PAGE
	Precision Collet Chuck ER 11 Ø 0.5–8.0 mm	
COLLETS	TYPE	PAGE
	ER 11 Ø 0.5–8.0 mm	
LIMIT SWITCHES	TYPE	PAGE
	Electric Pneumatic	

## Accessories

CONTROLS	TYPE	PAGE
	Controls units  Electric Pneumatic	
MOUNTINGS	TYPE	PAGE
	Mountings	

# AIR OPERATED DRILLING UNIT AODU-21

The AODU -21 is an air operated drilling unit with feed. The design of this unit makes it very suitable for drilling blind holes, reaming etc. We also offer this unit in a Stainless version, the AODU S-21, ideal for operation in environments where water or other corrosive fluids are present.

- EXTREMELY COMPACT (OUTER Ø 45 MM)
- POSITIVE STOP GUARANTEES HIGH DEGREE OF ACCURACY
- LOW AIR CONSUMPTION
- LOW NOISE LEVEL
- AVAILABLE IN STAINLESS DESIGN FOR CORROSIVE ENVIRONMENTS



Guidelines for choice of unit				[Ø, mm]
DRILLING UNIT	CAPACITY IN STEEL	CAPACITY IN ALUMINIUM/BRASS	CAPACITY IN WOOD/PLASTICS	
AODU(S)-21/5	6	11	16	
AODU(S)-21/8	6	11	16	
AODU(S)-21/11	6	10	14	
AODU(S)-21/22	5	9	12	
AODU(S)-21/36	4	7	10	
AODU(S)-21/49	3	6	8	
AODU(S)-21/220	2	3	4	

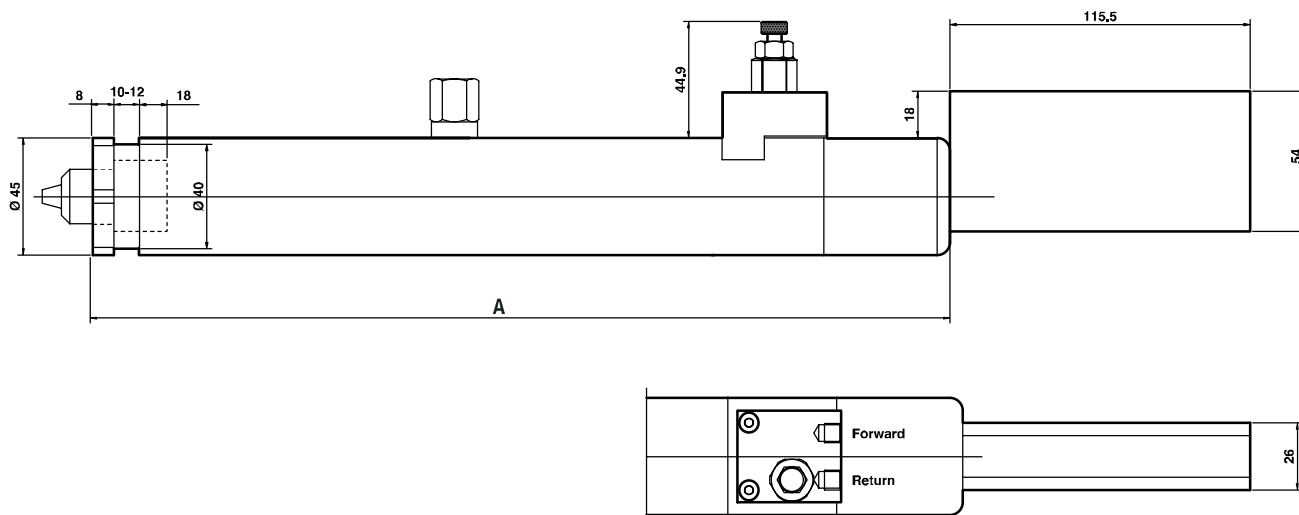
Performance specifications at 6.3 Bar					
Thrust (max.)	665 N	Min. CC Spindle Spacing	45 mm	Working pressure range	6–7 Bar
Power	0.25 kW	Run-out at spindle nose (max.)	0.05 mm	Air consumption	<0.3 Nm <sup>3</sup> /min
Stroke (max.)	50 mm	Depth accuracy +/-	0.01 mm	Sound level	70 dB(A)

DRILLING UNIT	SPEED (IDLE)	[RPM]	SPEED (AT MAX OUTPUT)	[RPM]	TORQUE (AT MAX OUTPUT)	[NM]
AODE(S)-21/5	500		250		9.9	
AODU(S)-21/8	800		400		6.0	
AODU(S)-21/11	1 100		550		4.3	
AODU(S)-21/22	2 200		1 100		2.4	
AODU(S)-21/36	3 600		1 800		1.5	
AODU(S)-21/49	4 900		2 450		1.1	
AODU(S)-21/220	15 000		7 500		0.25	




## Dimensions

[mm]


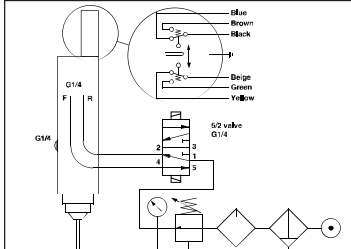


DRILLING UNIT	A	[MM]	WEIGHT	[KG]
AODU-21/5				
AODU-21/8		312		3.3
AODU-21/11				
AODU-21/22				
AODU-21/36		282		3.1
AODU-21/36				
AODU-21/220				
AODUS-21/5				
AODUS-21/8		312		3.0
AODUS-21/11				
AODUS-21/22				
AODUS-21/36		282		2.8
AODUS-21/49				
AODUS-21/220				

## Necessary components

CHUCKS	TYPE	PAGE
	Key chucks Ø 0.5–6.5 mm (Standard chuck) Ø 0.8–10.0 mm	
	Collet Chucks Ø 1.0–10.0 mm Ø 3.0–20.0 mm	
COLLETS	TYPE	PAGE
	DA 200 Ø 1.0–10.0 mm DA 180 Ø 3.0–20.0 mm	

## Accessories

LIMIT SWITCHES	TYPE	PAGE
	Electric Pneumatic	
CONTROLS	TYPE	PAGE
	Controls units Pneumatic Electric	

# AIR HYDRAULIC DRILLING UNIT AHDU-33

The basic design of the AHDU -33 consists of a vane motor powered by compressed air, a pneumatic cylinder, and a closed hydraulic system. The total stroke length can be variably subdivided into rapid advance and working feed over the whole range. The throttle/check valve in the hydraulic system permits exact setting of the feed rate and high speed return.

- VERY COMPACT DESIGN
- BUILT-IN HYDRAULICS FOR CONTROLLED WORKING FEED
- ADJUSTMENT OF DRILLING DEPTH WITH POSITIVE STOP GUARANTEES A HIGH DEGREE OF ACCURACY
- EXTRA STABLE SPINDLE BEARINGS
- LOW NOISE LEVEL
- MINIMAL AIR CONSUMPTION



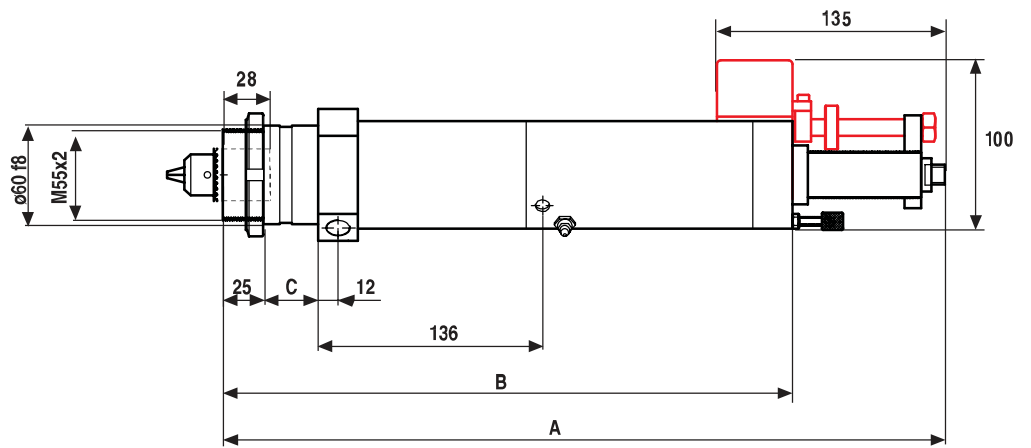
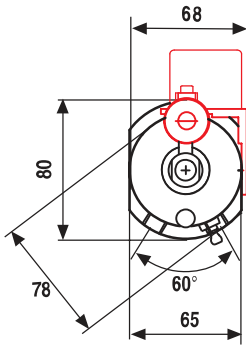
Guidelines for choice of unit													[Ø, mm]
DRILLING UNIT	CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN WOOD/PLASTICS				
No of Spindles	1	2	3	4	1	2	3	4	1	2	3	4	
AHDU-33/5	10	6	4	3	14	10	8	5	20	12	10	9	
AHDU-33/7	10	6	4	3	14	10	8	5	20	12	10	9	
AHDU-33/13	9	6	4	2.5	12	10	8	5	16	12	10	9	
AHDU-33/26	7	4	3	2	10	8	6	4	13	10	9	8	
AHDU-33/33	6	3	3	2	9	7	5	4	13	10	8	7	
AHDU-33/60	3	2	2	1	7	5	4	3	8	8	6	5	
AHDU-33/210	2.5				4				5				

Performance specifications at 6.3 Bar					
Thrust	see below	Run-out at spindle nose (max.)	0.05 mm	Air consumption	<0.5 Nm <sup>3</sup> /min
Power	0.36 kW	Depth accuracy +/-	0.01 mm	Sound level	70 dB(A)
Stroke (max. 100% controlled)	50 mm	Rapid advance rate	10 m/min		
Min. Center to Center Spacing		Controlled feed rate	>0.01 m/min		
Single Spindle	65 mm	Working pressure range	6–7 Bar		
Double-Spindle Head	11 mm				

DRILLING UNIT	SPEED (IDLE) [RPM]	SPEED (AT MAX OUTPUT) [RPM]	TORQUE (AT MAX OUTPUT) [NM]	THRUST [N]
AHDU-33/5	500	250	12.6	1 000
AHDU-33/7	700	350	10.4	1 000
AHDU-33/13	1 300	650	5.7	1 000
AHDU-33/26	2 600	1 300	2.9	800
AHDU-33/33	3 300	1 650	2.3	800
AHDU-33/60	6 000	3 000	1.3	800
AHDU-33/210	21 000	10 500	0.37	800

## Dimensions

[mm]




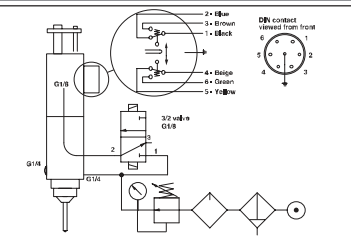

limit switch package.

DRILLING UNIT	A [MM]	B [MM]	C [MM]	WEIGHT [KG]
AHDU-33/5	472	380	67	7.1
AHDU-33/7				
AHDU-33/13				
AHDU-33/26	438	346	33	6.6
AHDU-33/33				
AHDU-33/60				
AHDU-33/210				

## Necessary components

CHUCKS	TYPE	PAGE
	Key chucks Ø 0.5–6.5 mm Ø 0.8–10.0 mm (Standard chuck)	
	Collet Chucks Ø 1.0–10.0 mm Ø 3.0–20.0 mm	
COLLETS	TYPE	PAGE
	DA 200 Ø 1.0–10.0 mm DA 180 Ø 3.0–20.0 mm	
LIMIT SWITCHES	TYPE	PAGE
	Electric Pneumatic	

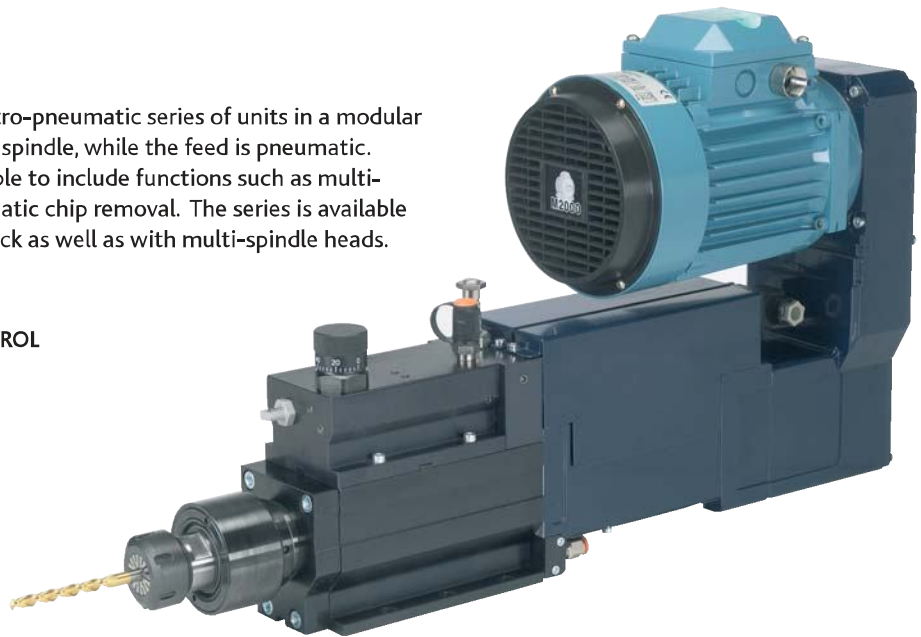
## Accessories

MULTI-SPINDLE HEADS	TYPE	PAGE
	Adjustable heads	
CONTROLS	TYPE	PAGE
	Controls units Electric Pneumatic	
MOUNTINGS	TYPE	PAGE
	Mountings	

# ELECTRO PNEUMATIC DRILLING UNIT EPDU-48

The EPDU -48-series is a flexible electro-pneumatic series of units in a modular design. The electric motor powers the spindle, while the feed is pneumatic. Hydraulic feed control makes it possible to include functions such as multi-wall drilling, rapid advance and automatic chip removal. The series is available with JT2 taper or integrated ER32 chuck as well as with multi-spindle heads.

- COMPACT YET FLEXIBLE DESIGN
- MODULAR HYDRAULIC FEED CONTROL FOR THE WHOLE STROKE
- SMART DEPTH CONTROL
- LINEAR TRANSDUCER FOR TOTAL CONTROL OF THE COMPLETE CYCLE (OPTIONAL)



## Guidlines for choice of unit

[Ø, mm]

DRILLING UNIT	CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN WOOD/PLASTICS			
	No of Spindles	1	2	3	4	1	2	3	4	1	2	3
EPDU-48/1	10	6	4	3	15	12	8	6	21	16	11	8
EPDU-48/2	13	8	5	4	20	16	11	9	26	19	15	12
EPDU-48/5	16	10	7	5	25	20	15	12	35	25	20	15

## Performance specifications at 6.3 Bar

Thrust (max.)	Min. Center to Center Spacing	Rapid advance rate (max.)	10 m/min
EPDU-48/1	Single Spindle	Controlled feed rate	>0.04 m/min
EPDU-48/2	Double-Spindle Head	Air consumption	2.8 l/100mm
EPDU-48/5	Run-out at spindle nose (max.)	Sound level	<85 dB(A)
Stroke (max. 100% controlled)	Depth accuracy +/-		
100 mm	0.01 mm		

## Motor and Transmission specifications

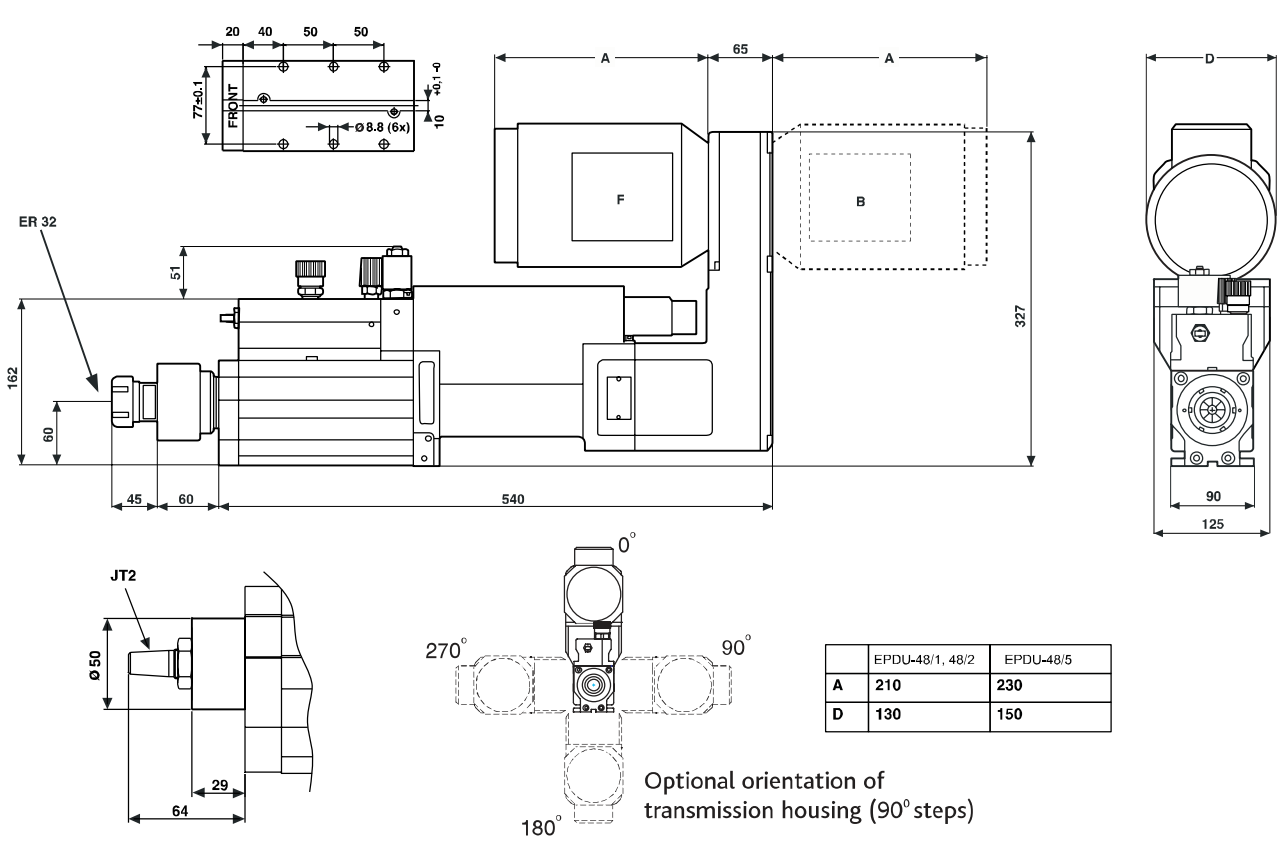
No of Poles	DRILLING UNIT/MOTOR AT V380-420(Y)/220-240(Δ)50HZ [kW]		
	EPDU-48/1	EPDU-48/2	EPDU-48/5
2	0.55	0.75	1.65
4	0.37	0.55	1.1
6	0.25	0.32	0.75
8			0.4

• Motor specifications shown in the tables are valid for 380–420V(Y) /220–240V(Δ) (±5%), 50 Hz. These motors can also be used at 440–480 V(Y) (±5%), 60 Hz. If so the rpm will increase by ~20% and the power by ~15% relative to the data for 50Hz. We also offer motors for other voltages and frequencies. Please state voltage and frequency when requesting a quote or ordering.

• The torque at the spindle for a specific rpm is calculated as:  

$$M = (P_{[kW]} \times 9500) / \text{rpm}$$

No of Poles	SPINDEL RPM AT GEAR RATIO AND 50HZ																	
	2.5:1	2.1:1	1.8:1	1.6:1	1.4:1	1.2:1	1:1	1:1.2	1:1.4	1:1.6	1:1.8	1:2.1	1:2.3	1:2.5	1:2.8	1:3.1	1:3.4	
2	1130	1350	1580	1750	2090	2420	2820	3290	3810	4550	5040	5880	6460	7170	7760	8600	9450	
4	560	670	780	860	1030	1190	1390	1620	1880	2240	2480	2900	3190	3530	3820	4240	4660	
6	360	440	510	560	670	780	910	1060	1230	1470	1630	1900	2090	2310	2500	2780	3050	
8	270	330	380	420	500	580	680	790	920	1100	1210	1420	1560	1730	1870	2070	2280	



WEIGHT 24-28 KG

Necessary components

CHUCKS	TYPE	PAGE
	Key Chucks for JT2, Ø 0–13 mm (Standard chuck)	
	Drill Chucks for JT2 Ø 1.0–10.0 mm Ø 3.0–16.0 mm	
	Integrated ER32 Collet Chuck Ø 2.0–20.0 mm	
COLLETS	TYPE	PAGE
	ER32, Ø 2.5–20.0 mm	
LIMIT SWITCHES	TYPE	PAGE
	Electric switches Pneumatic switches or Linear Transducer	

Accessories

MULTI-SPINDLE HEADS	TYPE	PAGE
	Adjustable heads	
CONTROLS	TYPE	PAGE
	Controls for EPDU-48- units with Electric switches Pneumatic switches or Linear Transducer	

# ELECTRO HYDRAULIC DRILLING UNIT EHDU-55

EHDU -55 is a powerful yet compact electro-hydraulic series of units. The electric motor runs the spindle while the feed is hydraulically powered and controlled. The hydraulic feed control together with position switches makes it possible to include functions such as multi-wall drilling, rapid advance and automatic chip removal. The units are available in two different taper options as well as with multi-spindle heads.

- COMPACT YET POWERFUL DESIGN
- INTEGRATED HYDRAULIC SYSTEM
- LONG STROKE – 120 MM
- IDEAL FOR FLOW DRILLING
- HIGH PRECISION
- LOW NOISE LEVEL



## Guidlines for choice of unit

[Ø, mm]

DRILLING UNIT	CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN WOOD/PLASTICS			
	1	2	3	4	1	2	3	4	1	2	3	4
EHDU-55/2	14	9	3	5	20	16	11	9	26	19	15	12
EHDU-55/5	19	13	9	8	26	21	16	13	35	25	20	16
EHDU-55/8	25	19	14	11	35	27	23	18	40	35	26	23

## Performance specifications

Thrust (max.)	6 000 N	Run-out at spindle nose (max.)		Controlled feed rate	0.04–0.65 m/min
Stroke (max. 100% controlled)	120 mm	JT2	0.02 mm	Sound level	<80 dB(A)
Min. Center to Center Spacing		MT2	0.03 mm		
Single Spindle	140 mm	Depth accuracy +/-	0.01 mm		
Double-Spindle Head	14 mm	Rapid advance rate (max.)	6 m/min		

## Motor and Transmission specifications

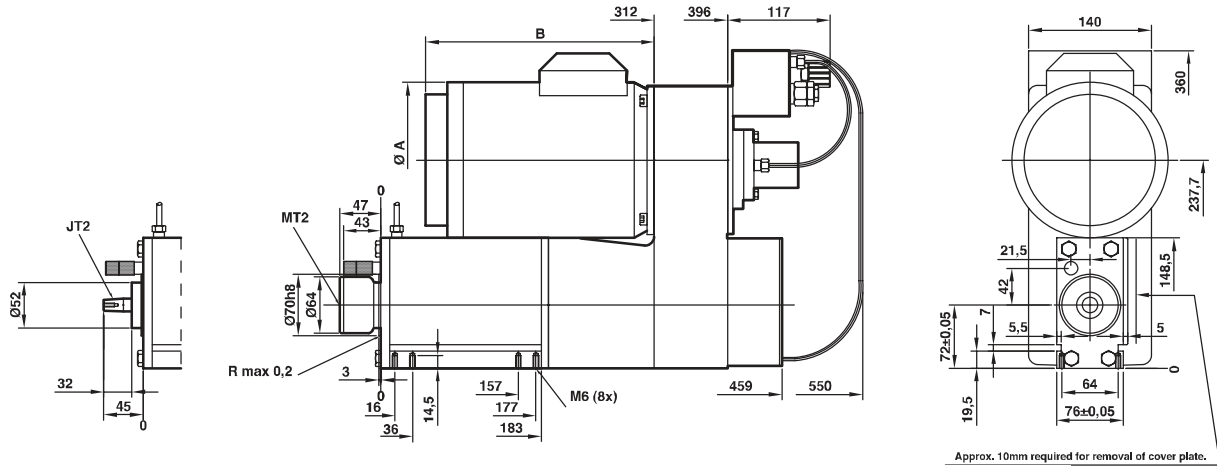
No of Poles	DRILLING UNIT/MOTOR AT V380–420(Y)/220–240(Δ) 50HZ [kW]		
	EHDU-55/2	EHDU-55/5	EHDU-55/8
2	0.75	1.65	2.7
4	0.55	1.1	2.2
6	0.37	0.75	1.3
8		0.4	0.75

• Motor specifications shown in the tables are valid for 380–420V(Y) /220–240V(Δ) (±5%), 50 Hz. These motors can also be used at 440–480 V(Y) (±5%), 60 Hz. If so the rpm will increase by ~20% and the power by ~15% relative to the data for 50Hz. We also offer motors for other voltages and frequencies. Please state voltage and frequency when requesting a quote or ordering.

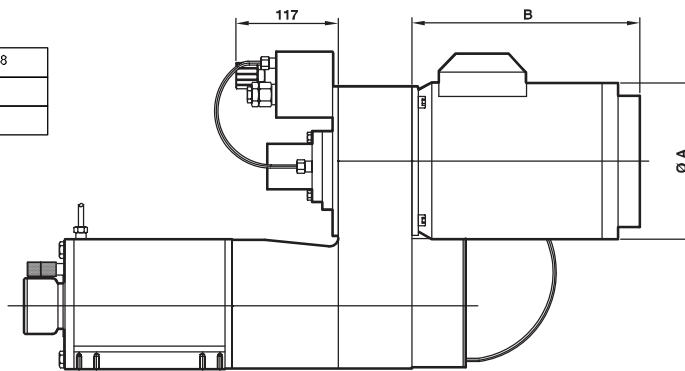
• The torque at the spindle for a specific rpm is calculated as:  

$$M = (P_{[kW]} \times 9500) / \text{rpm}$$

No of Poles	SPINDEL RPM AT GEAR RATIO AND 50HZ								
	2.8:1	2.2:1	1.7:1	1.3:1	1:1	1:1.3	1:1.7	1:2.2	1:2.8
2	1020	1300	1690	2170	2820	3670	4700	6130	7780
4	500	640	830	1070	1390	1810	2320	3020	3830
6	330	420	550	700	910	1180	1520	1980	2510
8	250	310	410	520	680	880	1130	1480	1880



	EHDU-55/2, 55/5	EHDU-55/8
A	150	178
B	221	261



WEIGHT 25–35 KG

Necessary components

CHUCKS	TYPE	PAGE
	Key Chuck for JT2 Ø 0–13 mm	
	Drill Chucks for JT2: Ø 1.0–10.0 mm Ø 3.0–16.0 mm for MT2: Ø 3.0–16.0 mm	
	Collet Chuck Ø 2.0–14.0 mm for JT2	
	Collet Chuck Ø 3.0–20.0 mm for MT2	
COLLETS	TYPE	PAGE
	DA100 for JT2: Ø 2.0–14.0 mm DA180 for MT2 Ø 3.0–20.0 mm	

Accessories

MULTI-SPINDLE HEADS	TYPE	PAGE
	Adjustable heads	
CONTROLS	TYPE	PAGE
	Controls for EHDU -55 units	

**Navaho**<sup>®</sup>  
by alfavaria

# COST-EFFECTIVE AUTOMATION

COMPACT UNITS FOR  
• TAPPING

## TAPPING UNITS

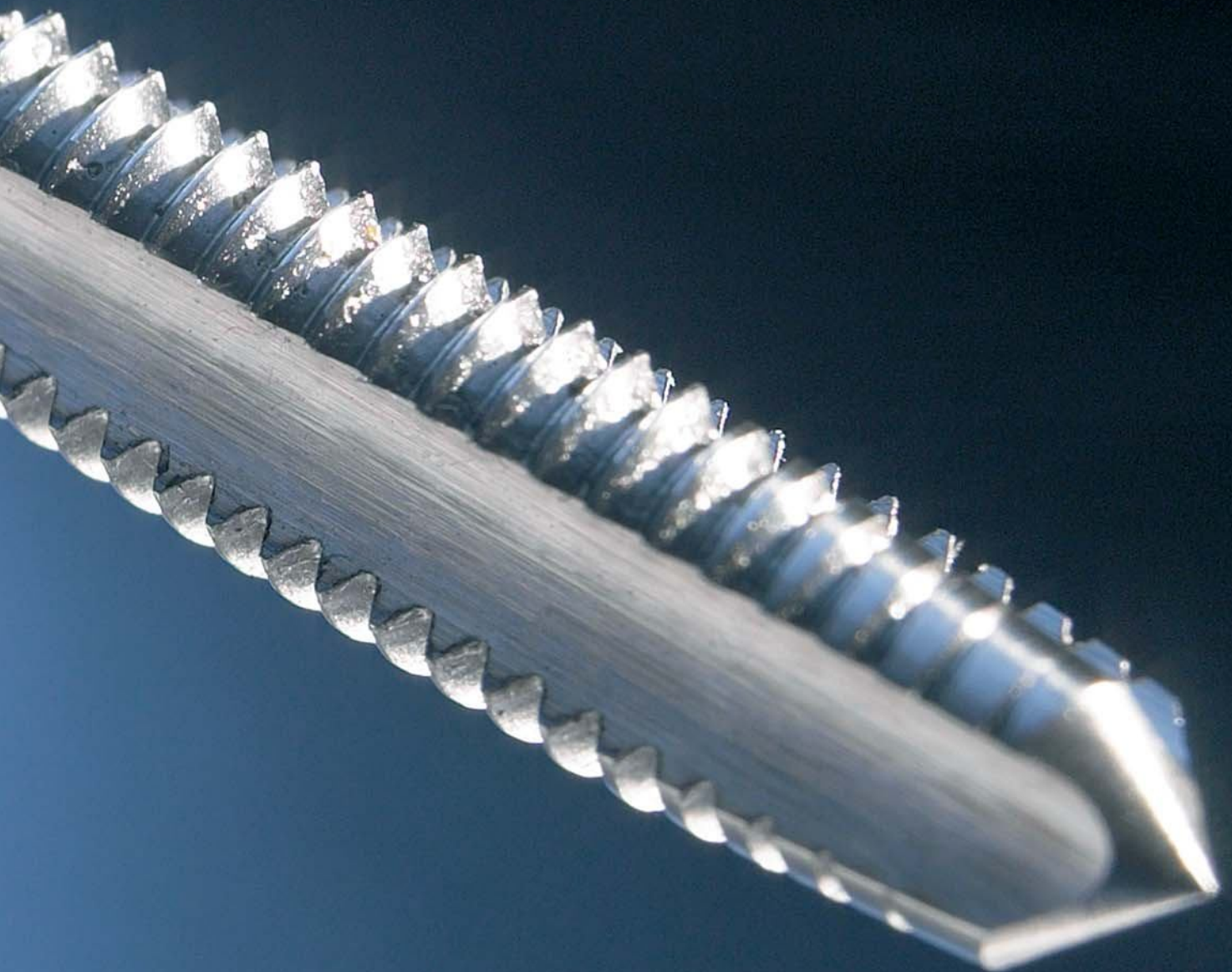






# TAPPING UNITS

UNIT	PAGE	DRIVE	FEED	TAPPING CAPACITY		
				STEEL	ALUMINIUM/ BRASS	PLASTICS
PTU-11	27	Pneumatic 5-vane Motor	Lead screw	M5	M8	M10
PTU-22	29	Pneumatic 5-vane Motor	Lead screw	M8	M12	M12
EPTU-48	31	Electric Air Hydraulic	Controlled	M12	M20	M30
EHTU-55	33	Electric Hydraulic	Controlled	M16	M24	M30



# PNEUMATIC LEAD SCREW TAPPING UNIT PTU-11

The PTU -11 consists of a vane motor powered by compressed air, a planetary gearbox, lead screw, nut and a follower with cams to activate built-in switches. The design of this unit is compact yet highly functional. The lead screw ensures high repeatability for threading operations.

- EXTREMELY COMPACT DESIGN
- SEALED LEAD SCREW
- LOW NOISE LEVEL
- SMART DEPTH CONTROL
- AVAILABLE IN ALL THREAD TYPES AS WELL AS LEFT HAND



## Guidlines for choice of unit

[M-Thread]

TAPPING UNIT	CAPACITY IN STEEL	CAPACITY IN ALUMINIUM/BRASS	CAPACITY IN PLASTICS
PTU-11/5	M5	M8	M10
PTU-11/8	M5	M6	M8
PTU-11/20	M4	M5	M6
PTU-11/34	M3	M4	M5

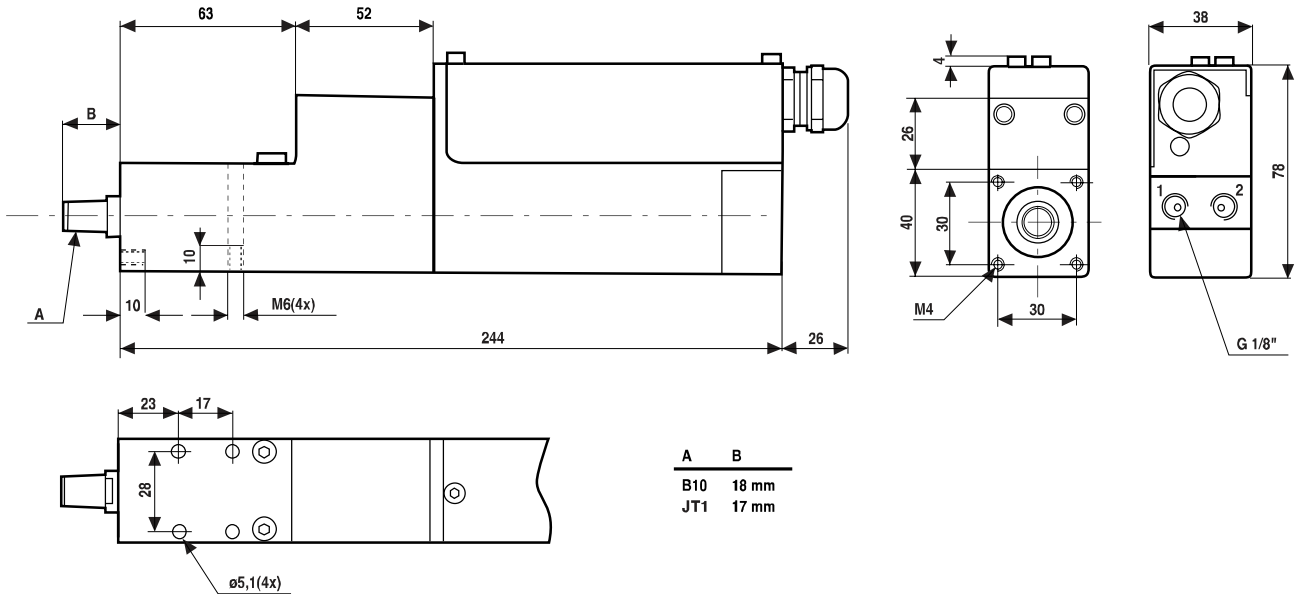
## Performance specifications at 6.3 Bar

Power	0.09 kW	Depth accuracy +/-	0.01 mm	Sound level	70 dB(A)
Stroke (max, 100% controlled)	32 mm	Working pressure range	6-7 Bar		
Min. CC Spindle Spacing	38 mm	Air consumption	<0.2 Nm <sup>3</sup> /min		

TAPPING UNIT	SPEED (IDLE) [RPM]	SPEED (AT MAX OUTPUT) [RPM]	TORQUE (AT MIN STARTING) [NM]	TORQUE (AT MAX OUTPUT) [NM]
PTU-11/5	440	250	5.0	3.5
PTU-11/8	700	400	3.1	2.1
PTU-11/20	1 800	1 000	1.3	0.84
PTU-11/34	2 850	1 650	0.78	0.53

## Dimensions

[mm]



WEIGHT 3.5 KG

## Necessary components

QUICK CHANGE CHUCKS	TYPE	PAGE
	WFO for B10 Metric	
	C8 for JT1	
TAP HOLDERS	TYPE	PAGE
	SE0/WE0 for WFO (B10) Metric	
	T8 for C8 (JT1)	
LIMIT SWITCHES	TYPE	PAGE
	Electric Pneumatic	

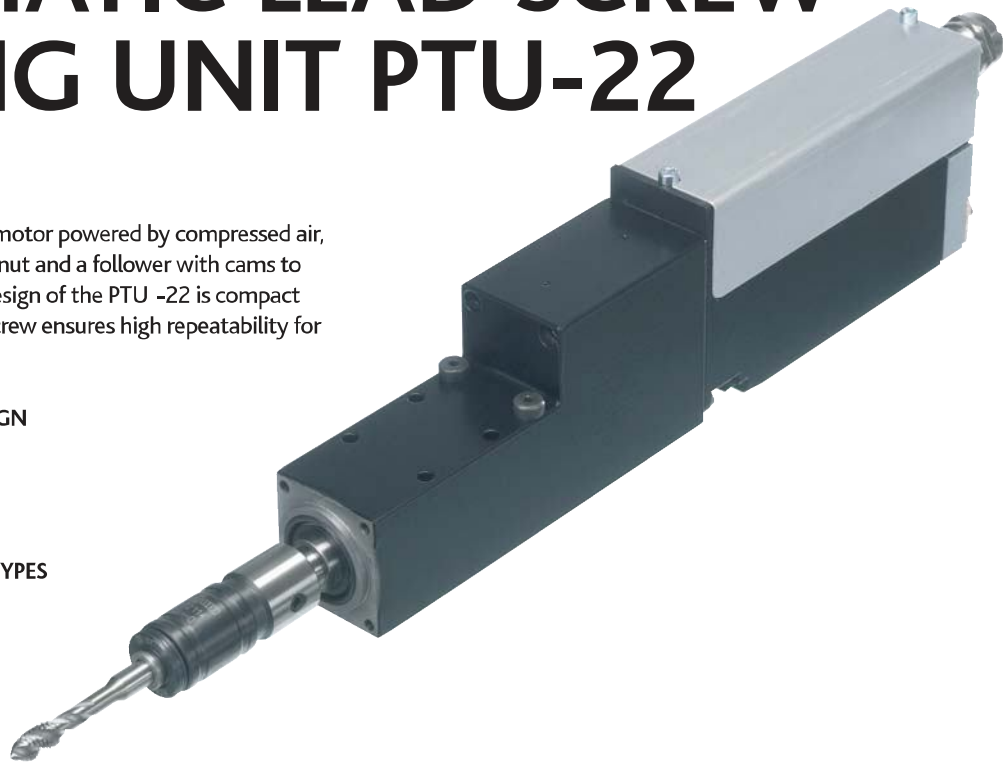
## Accessories

CONTROLS	TYPE	PAGE
	Controls for PTU units Electric Pneumatic	

# PNEUMATIC LEAD SCREW TAPPING UNIT PTU-22

The PTU -22 consists of a vane motor powered by compressed air, a planetary gearbox, lead screw, nut and a follower with cams to activate built-in switches. The design of the PTU -22 is compact yet highly functional. The lead screw ensures high repeatability for threading operations.

- EXTREMELY COMPACT DESIGN
- SEALED LEAD SCREW
- LOW NOISE LEVEL
- SMART DEPTH CONTROL
- AVAILABLE IN ALL THREAD TYPES AS WELL AS LEFT HAND



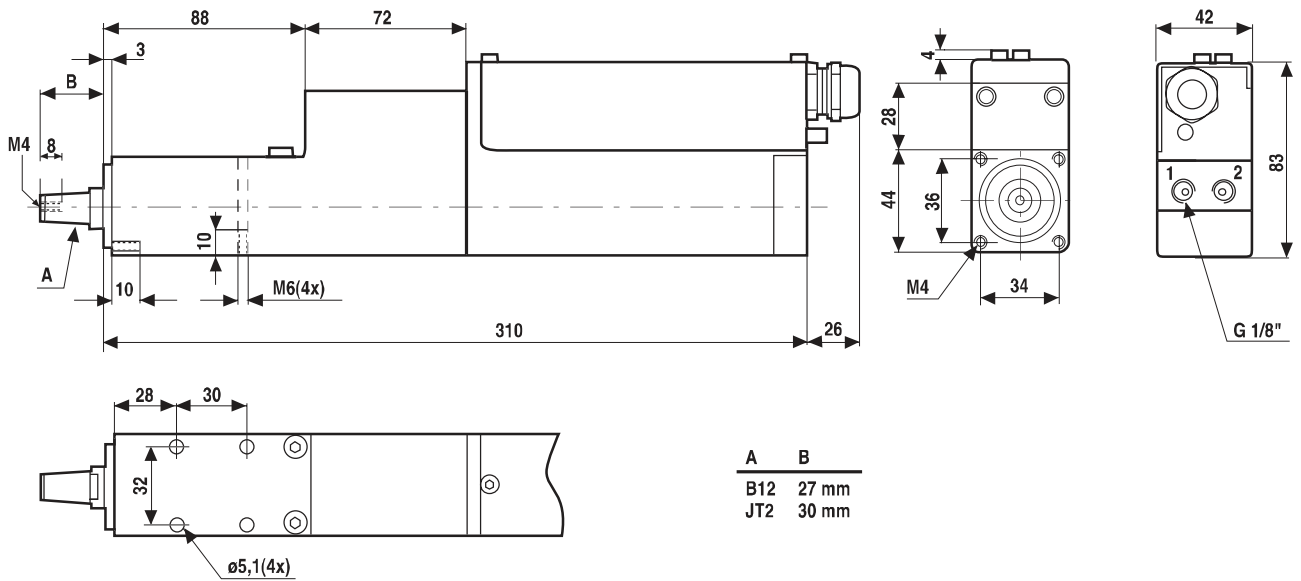
Guidlines for choice of unit												[M-Thread]
TAPPING UNIT	CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN PLASTICS			
No of Spindles	1	2	3	4	1	2	3	4	1	2	3	4
PTU-22/3	M8	M6	M6	M5	M12	M10	M8	M8	M12	M12	M10	M10
PTU-22/5	M6	M5	M5	M4	M12	M8	M6	M6	M12	M10	M8	M8
PTU-22/6	M6	M5	M5	M4	M10	M8	M6	M6	M10	M8	M8	M6
PTU-22/13	M5	M4	M4	M3	M8	M6	M5	M5	M8	M8	M6	M5
PTU-22/21	M4	M3	M3	M2	M6	M5	M4	M4	M8	M6	M5	M4
PTU-22/28	M3	M3	M2		M5	M4	M3	M3	M6	M5	M4	M4

Performance specifications at 6.3 Bar			
Power	0.16 kW	Depth accuracy +/-	0.01 mm
Stroke (max, 100% controlled)	51 mm	Working pressure range	6–7 Bar
Min. Center to Center Spacing		Air consumption	<0.3 Nm <sup>3</sup> /min
Single Spindle	42 mm	Sound level	70 dB(A)
Double-Spindle Head	11 mm		

TAPPING UNIT	SPEED (IDLE) [RPM]	SPEED (AT MAX OUTPUT) [RPM]	TORQUE (AT MIN STARTING) [NM]	TORQUE (AT MAX OUTPUT) [NM]
PTU-22/3	240	140	13.4	10.8
PTU-22/5	400	240	8.0	6.7
PTU-22/6	540	310	5.9	5.0
PTU-22/13	1 050	650	3.0	2.4
PTU-22/21	1 750	1 050	1.8	1.5
PTU-22/28	2 400	1 390	1.3	1.1

# Dimensions

[mm]



WEIGHT 4.6 KG

## Necessary components

QUICK CHANGE CHUCKS	TYPE	PAGE
	WFO for B12 Metric	
	C12 for JT2	
TAP HOLDERS	TYPE	PAGE
	SE0/WE0 for WFO/B12 Metric	
	T12 for C12 (JT2)	
LIMIT SWITCHES	TYPE	PAGE
	Electric Pneumatic	

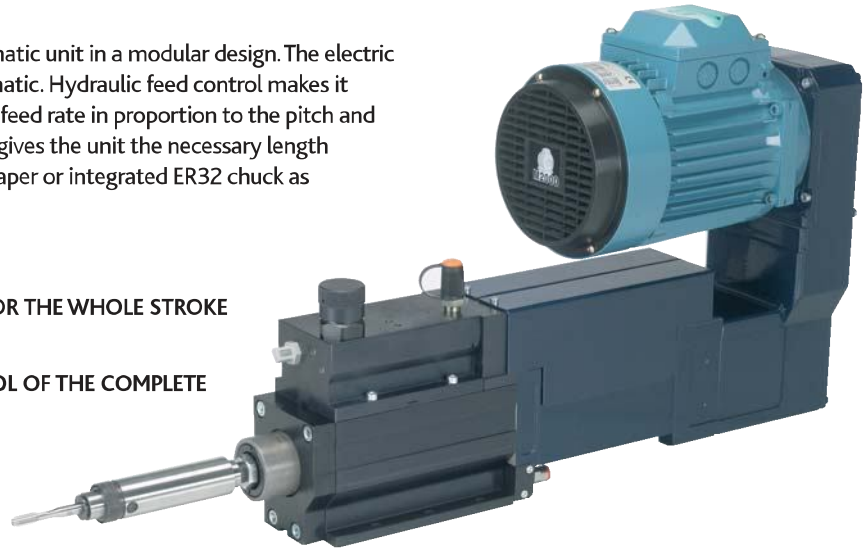
## Accessories

MULTI-SPINDLE HEADS	TYPE	PAGE
	Adjustable heads	
CONTROLS	TYPE	PAGE
	Controls for PTU units Electric Pneumatic	
MOUNTINGS	TYPE	PAGE
	Mountings	

# ELECTRO PNEUMATIC TAPPING UNIT EPTU-48

The EPTU -48-series is a flexible electro-pneumatic unit in a modular design. The electric motor runs the spindle, while the feed is pneumatic. Hydraulic feed control makes it possible to use rapid advance and to adjust the feed rate in proportion to the pitch and the rpm. A tapping collect or a tapping spindle gives the unit the necessary length compensation. The series is available with JT2 taper or integrated ER32 chuck as well as with multi-spindle heads.

- COMPACT YET FLEXIBLE DESIGN
- MODULAR HYDRAULIC FEED CONTROL FOR THE WHOLE STROKE
- SMART DEPTH CONTROL
- LINEAR TRANSDUCER FOR TOTAL CONTROL OF THE COMPLETE CYCLE (OPTIONAL)



Guidlines for choice of unit													[M-Thread]
TAPPING UNIT	CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN PLASTICS				
No of Spindles	1	2	3	4	1	2	3	4	1	2	3	4	
EPTU-48/1	M6	M5	M4	M3	M10	M8	M8	M6	M14	M8	M8	M8	
EPTU-48/2	M8	M6	M5	M3	M14	M10	M8	M8	M16	M14	M12	M10	
EPTU-48/5	M12	M8	M6	M6	M20	M14	M12	M10	M30	M20	M20	M16	

Performance specifications at 6.3 Bar				
Thrust (max.)	1 650–2 000 N		Depth accuracy +/-	0.01 mm
Stroke (max. 100% controlled)	100 mm		Rapid advance rate (max.)	10 m/min
Min. Center to Center Spacing	Single Spindle		Controlled feed rate	>0.04 m/min
	Double-Spindle Head		Air consumption	2.8 l/100mm
	90 mm		Sound level	<85 dB(A)
	11 mm			

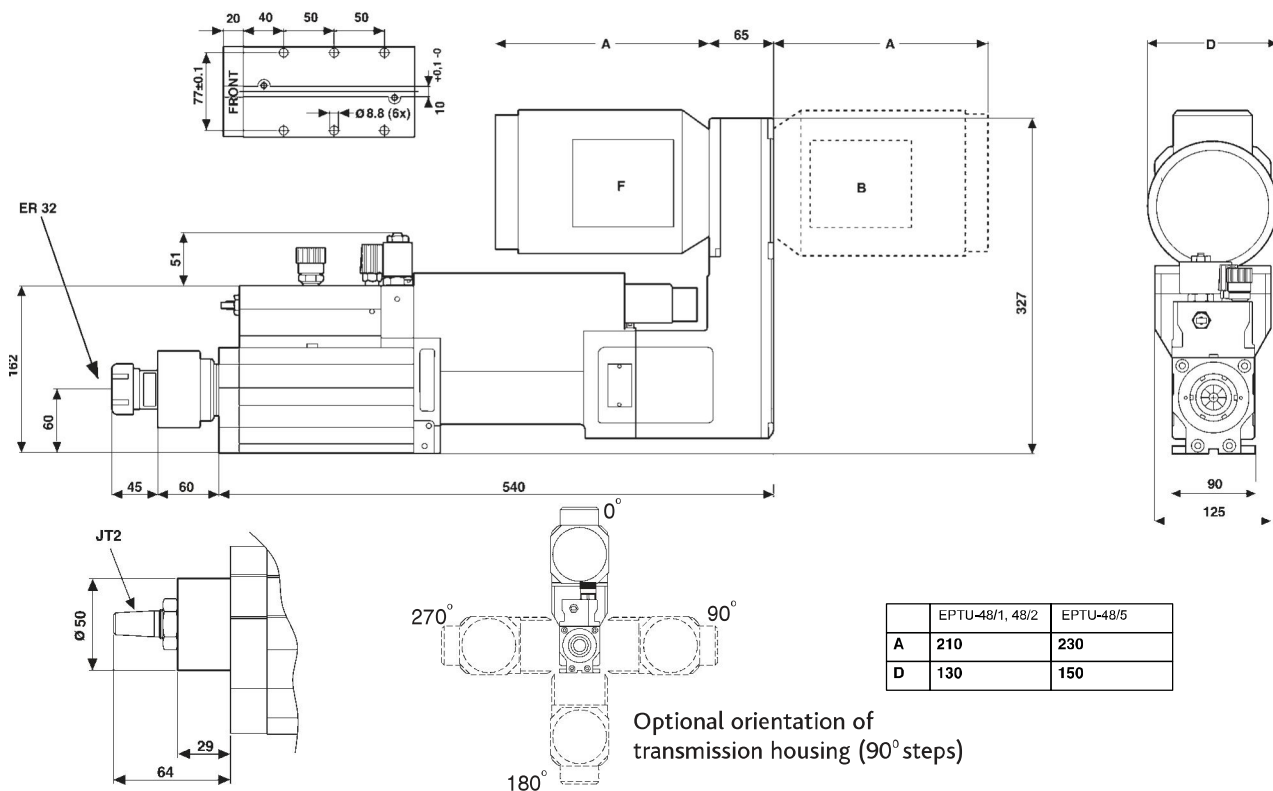
Motor and Transmission specifications			
No of Poles	TAPPING UNIT/MOTOR AT V 380–420(Y) / 220–240(Δ) 50HZ [kW]		
	EPTU-48/1	EPTU-48/2	EPTU-48/5
2	0.55	0.75	1.65
4	0.37	0.55	1.1
6	0.25	0.32	0.75
8			0.4

• Motor specifications shown in the tables are valid for 380–420V(Y) / 220–240V(Δ) (±5%), 50 Hz. These motors can also be used at 440–480 V(Y) (±5%), 60 Hz. If so the rpm will increase by ~20% and the power by ~15% relative to the data for 50Hz. We also offer motors for other voltages and frequencies. Please state voltage and frequency when requesting a quote or ordering.

• The torque at the spindle for a specific rpm is calculated as:  $M = (P_{[kW]} \times 9500) / \text{rpm}$

We do not recommend tapping with a floating holding at higher speeds than 2000 rpm. Maximum speed is lower when tapping a deep or blind hole and/or using a large thread.

No of Poles	SPINDEL RPM AT GEAR RATIO AT 50HZ															
	2.5:1	2.1:1	1.8:1	1.6:1	1.4:1	1.2:1	1:1	1:1.2	1:1.4	1:1.6	1:1.8	1:2.1	1:2.3	1:2.5	1:2.8	
2	1130	1350	1580	1750												
4	560	670	780	860	1030	1190	1390	1620	1880							
6	360	440	510	560	670	780	910	1060	1230	1470	1630	1900				
8	270	330	380	420	500	580	680	790	920	1100	1210	1420	1560	1730	1870	



WEIGHT 24–28 KG

Necessary components

TAPPING ATTACHMENTS	TYPE	PAGE
	Length compensation up to 10 mm Integrated ER32 chuck with length compensating collets M4–M12	
	Length compensation up to: 25 mm Tapping spindle GS12E M4–M16 (JT2) 40 mm Tapping spindle GS24E M8–M30 (ER32+B18/ø16 taper shank)	
TAP HOLDERS	TYPE	PAGE
	ER32 collets with length compensation M4–M12	
	T12 for GS12E T24 for GS24E	
LIMIT SWITCHES	TYPE	PAGE
	Electric switches Pneumatic switches or Linear Transducer	

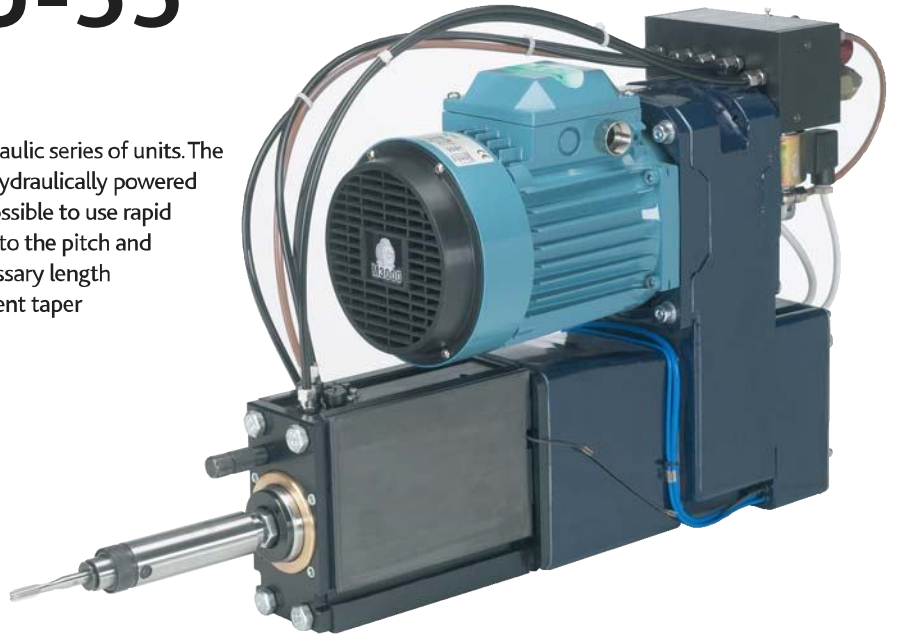
Accessories

MULTI-SPINDLE HEADS	TYPE	PAGE
	Adjustable heads	
CONTROLS	TYPE	PAGE
	Controls Electric switches Pneumatic switches or Linear Transducer	



# ELECTRO HYDRAULIC TAPPING UNIT EHTU-55

EHTU -55 is a powerful yet compact electro-hydraulic series of units. The electric motor runs the spindle, while the feed is hydraulically powered and controlled. Hydraulic feed control makes it possible to use rapid advance and to adjust the feed rate in proportion to the pitch and the rpm. A tapping spindle gives the unit the necessary length compensation. The series is available in two different taper options as well as with multi-spindle heads.



- COMPACT DESIGN YET POWERFUL
- INTEGRATED HYDRALIC SYSTEM
- LONG STROKE – 120 MM
- HIGH PRECISION
- LOW NOISE LEVEL

Guidlines for choice of unit											[M-Thread]		
TAPPING UNIT	CAPACITY IN STEEL				CAPACITY IN ALUMINIUM/BRASS				CAPACITY IN PLASTICS				
No of Spindles	1	2	3	4	1	2	3	4	1	2	3	4	
EHTU-55/2	M8	M6	M5	M5	M14	M10	M8	M8	M16	M14	M12	M10	
EHTU-55/5	M12	M8	M6	M6	M20	M14	M12	M10	M30	M16	M16	M14	
EHTU-55/8	M16	M10	M10	M8	M24	M16	M16	M14	M30	M20	M20	M16	

Performance specifications			
Thrust (max.)	6 000 N	Depth accuracy +/-	0.01 mm
Stroke (max. 100% controlled)	120 mm	Rapid advance rate (max.)	6 m/min
Min. Center to Center Spacing		Controlled feed rate	0.04–0.65 m/min
Single Spindle	140 mm	Sound level	<80 dB(A)
Double-Spindle Head	14 mm		

## Motor and Transmission specifications

No of Poles	TAPPING UNIT/MOTOR AT V380–420(Y)/220–240(Δ) 50HZ [kW]		
	EHTU-55/2	EHTU-55/5	EHTU-55/8
2	0.75	1.65	2.7
4	0.55	1.1	2.2
6	0.37	0.75	1.3
8		0.4	0.75

No of Poles	SPINDEL RPM AT GEAR RATIO AT 50HZ							
	2.7:1	2.1:1	1.7:1	1.4:1	1:1	1:1.4	1:1.7	1:2.1
2	1040	1370	1690					
4	500	640	830	1070	1390	1810		
6	330	420	550	700	910	1180	1520	1980
8	250	310	410	520	680	880	1130	1480

• Motor specifications shown in the tables are valid for 380–420V(Y) /220–240V(Δ) (±5%), 50 Hz. These motors can also be used at 440–480 V(Y) (±5%), 60 Hz. If so the rpm will increase by ~20% and the power by ~15% relative to the data for 50Hz. We also offer motors for other voltages and frequencies. Please state voltage and frequency when requesting a quote or ordering.

• The torque at the spindle for a specific rpm is calculated as:  

$$M = (P_{[kW]} \times 9500) / \text{rpm}$$

We do not recommend tapping with a floating holding at higher speed than 2000 rpm. Maximum speed is lower when tapping a deep or blind hole and/or using a large thread.



# Cost-effective automation

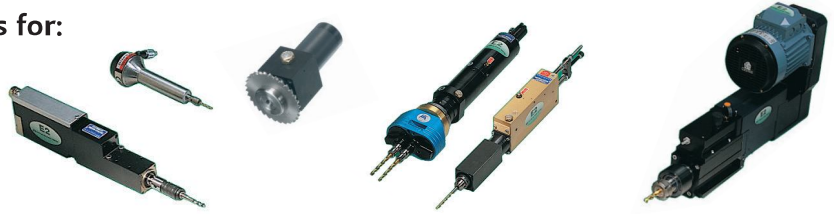
Compact quality units for:

- **Drilling**

Ø 0,3–25 mm in Steel

- **Tapping**

M1,6–M16 in Steel



## NOTES:

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