

Engraving Motor Spindle

EMS-100g/m

ECS-100g/m

ERS-100g

Max. 42,000RPM

DESCRIPTIONS



Product Specifications

MOTOR

Max Speed (1/min)	42000 rpm
Torque (S1-100%)	2.6 Nm
Power (S1-100%)	4.8 kW
Frequency Range	100~1400Hz
Voltage	220V / 380V
Current	31.4A(220V) 18.1A(380V)
Motor Type	AC asynchronous, 4-pole

SPINDLE DRIVE

Drive Type	7.5Kw .1400Hz
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BEARINGS

Bearings	Four 4 angular-contact, hybrid-ceramic, high-precision bearings, O4/P2 precision
Mounting	Front and rear duplex sets, mounted in "O" arrangement with shaft length compensation to provide constant spring pre-load
Labyrinth	Grease

SHAFT DATA

Runout Accuracy	2μm
Balance Quality	ISO 1940 part 1 .G1

TOOL CLAMPING

EMS Tool	ISO 20(Clamping range: Ø 1.0~ Ø 10) or ISO 25(Clamping range: Ø 2.0~ Ø 13)
ECS Tool	HSK-E32
ERS Tool	Collets ER25

MOTOR TEMPERATURE

Motor Temperature Type	PTC 130°/ KTY 84
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ENCODER

VS Encoder	SIN and COS signals with 1Vpp Revolution with zero mark
Standards	Module : 0.5 Teeth Number : 100
Voltage	5V DC±5%

TOOLS SENSOR (EMS)

Sensor S1	PNP-NO Draw-bar in release position
Sensor S2	PNP-NO Tool clamped / Clamped without tool

TOOLS SENSOR (ECS)

Sensor S1	PNP-NO Draw-bar in release position
Sensor S2	PNP-NO Tool clamped
Sensor S3	PNP-NO Clamped without tool

Product Specifications

Motor cooling

Cooling medium	Cooling capacity>1 kW Adjust coolant temperature(+2°C)
Cooling with water	Water with max.25%anti-corrosion Agent

TOOL TAPER / LEANING

Pressure	>5 bar
Filter size	50 µm

PURGE AIR

Pressure	1~1.5 bar
Filter size	8 µm
Flow	1.0 ... 1.5 Nm ³ /h

CONNECTIONS

Grease

Cooling x2	PT 1/8	Ø 10mm diameter
Purge air x1	M5*P0.8	Ø 4mm diameter
Taper cleaning x1	M5*P0.8	Ø 4mm diameter
Cylinder air in x1	PT1/8	Ø 8mm diameter
Cylinder air in x1	PT1/8	Ø 6mm diameter

CONNECTIONS

Oil air

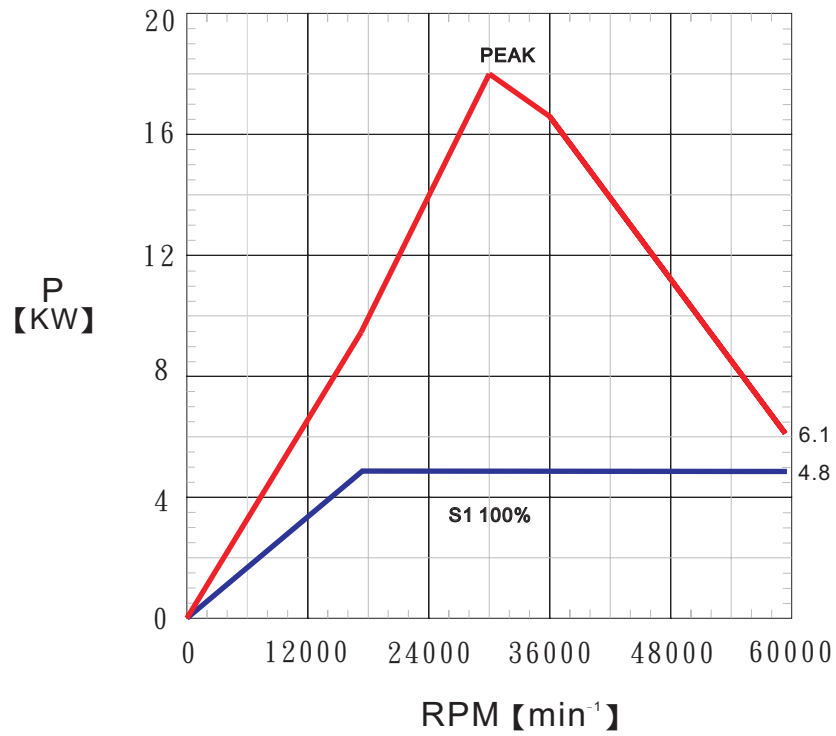
Cooling x2	PT 1/8	Ø 10mm diameter
Purge air x1	M5*P0.8	Ø 4mm diameter
Taper cleaning x1	M5*P0.8	Ø 4mm diameter
Oil air lubricate x3	M5*P0.8	Ø 4mm diameter
Oil air return x1	PT1/8	Ø 6mm diameter
Cylinder air in x1	PT1/8	Ø 8mm diameter
Cylinder air in x1	PT1/8	Ø 6mm diameter

INSTALLATION / WEIGHT

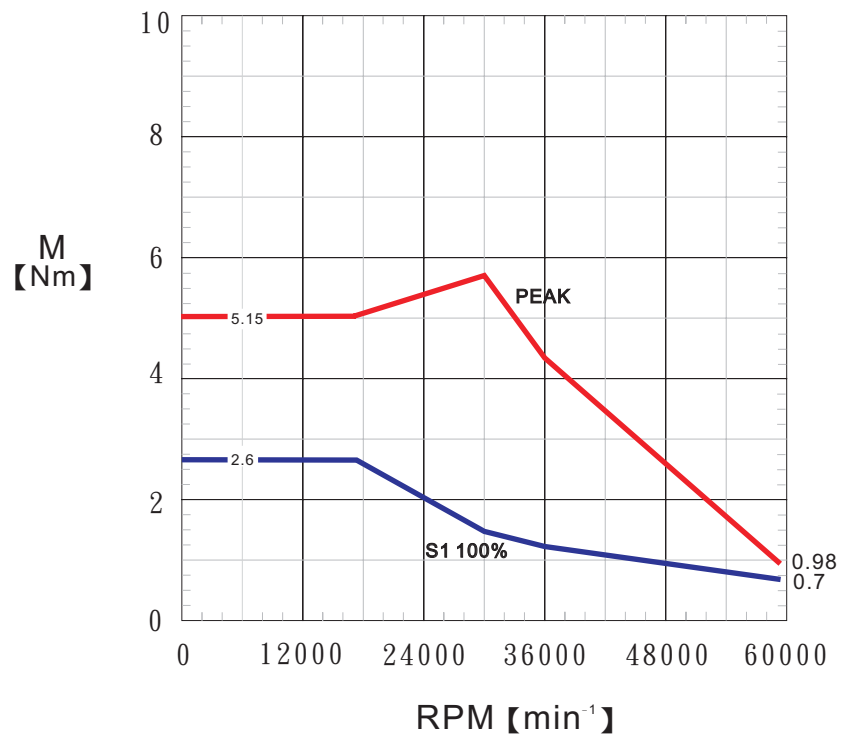
Spindle diameter	ϕ100 (h6)
Operation position	Horizontal / Vertical
Weight	15kg

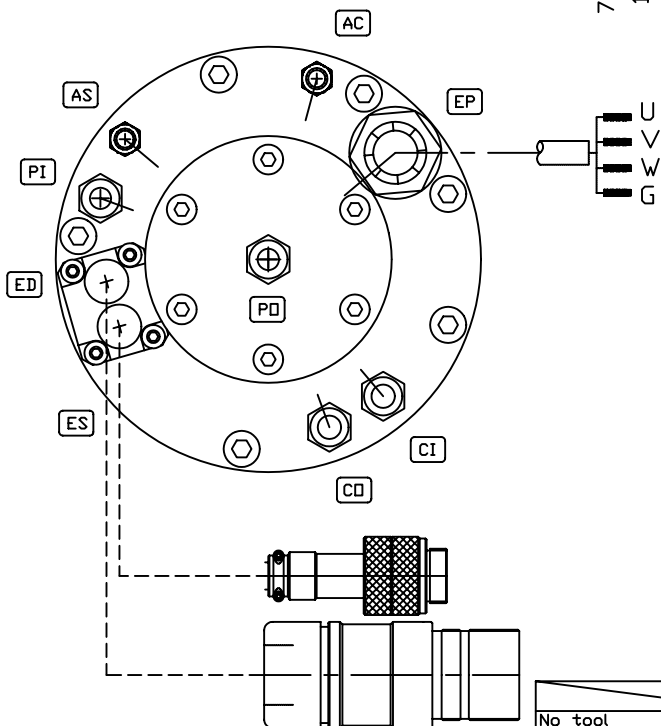
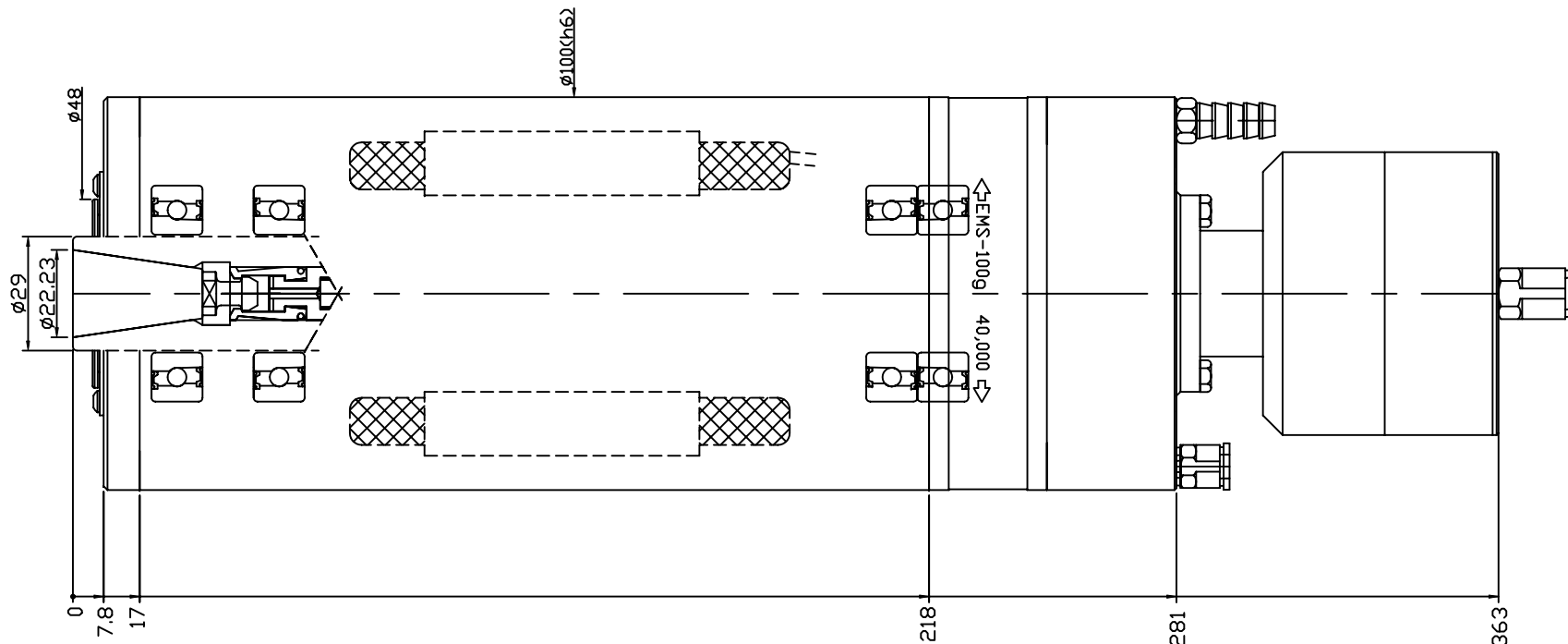
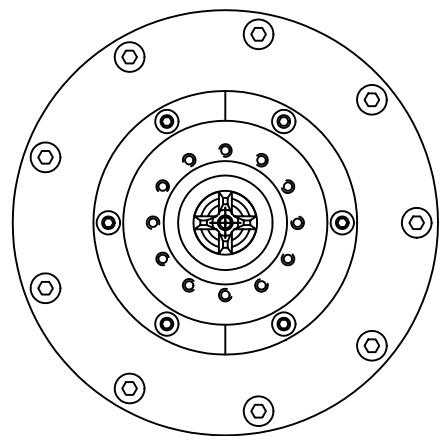


POWER



TORQUE





CI Cooling in <5 bar PT1/8 Ø10mm
CO Cooling out PT1/8 Ø10mm

AS Purge air 1~1.5 bar M5*P0.8 Ø4mm

AC Taper clean >5 bar M5*P0.8 Ø4mm

PD Cylinder air in (Release) PT1/8-Ø8mm 6~12 bar

PI Cylinder air in (Clamped) PT1/8-Ø6mm 6~12 bar

EP power lines U1, V1, W1 ,G

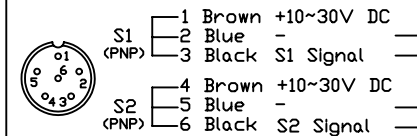
ED Measuring system 17 pin

ES Clamping status monitoring 6 pin

ED Terminal of sensors (17Pin)

- 1 Brown A+
- 2 Green A-
- 3 Red R+(N+)
- 4
- 5
- 6
- 7 Yellow 0V (shorted 15pin RS)
- 8 Brown KTY 84+(stator)
- 9 White KTY 84-(stator)
- 10 Violet +5V (shorted 16pin RS)
- 11 Grey B+
- 12 Orange B-
- 13 Black R-(N-)
- 14
- 15 Yellow 0V (shorted 7pin RS)
- 16 Blue +5V (shorted 10pin RS)
- 17 Short with shield (shield)

ES Tool position of sensors (6Pin)



Tool holder standard
Balance ISO 1940 part 1
Tool type ISO-20
Grippers type Spring #20
Static pull force 1,500 N

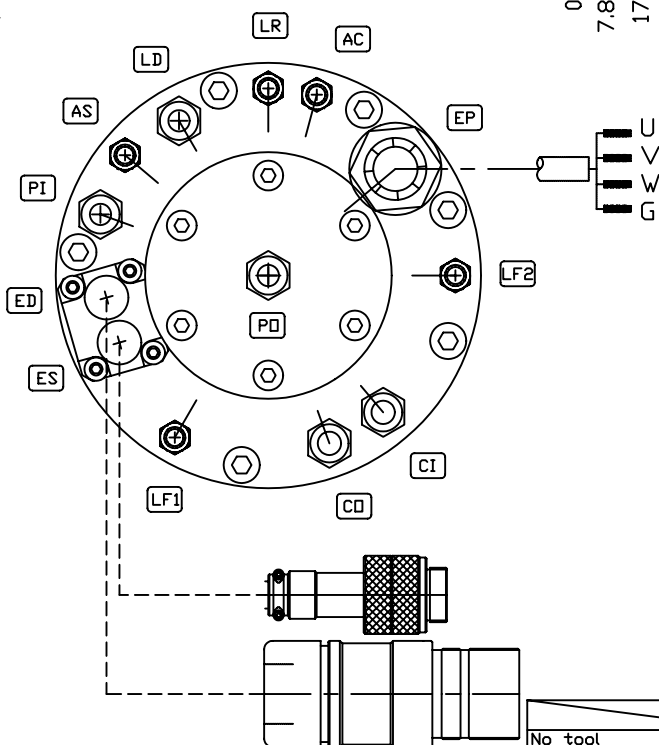
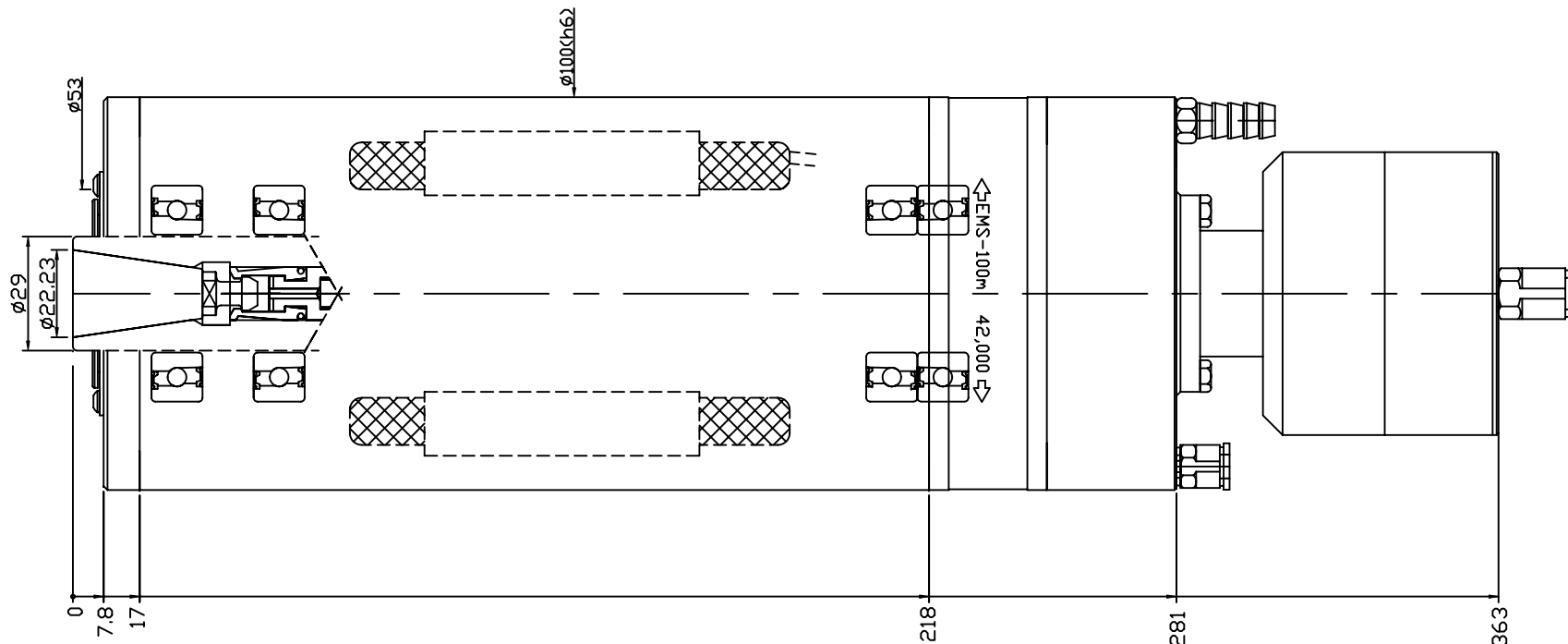
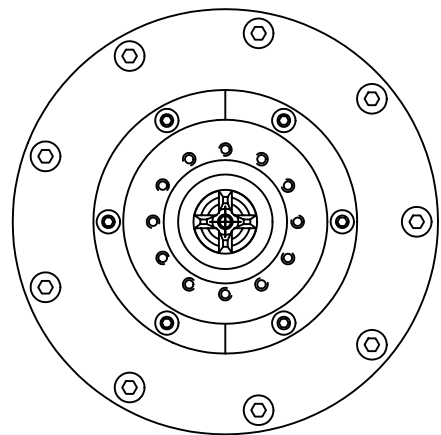
Data sheet of motor

number of pole: 4 poles	
Kind of connection	S1/100%
Mode of operation	Y
Voltage [V]	225 380 380 380
Current [A]	18.1 13.2 12.74 10.9
Frequency [Hz]	600 1,013 1,200 2,000
Shaft speed [rpm]	17,614 30,180 36,000 59,440
Power [kW]	4.8 4.8 4.8 4.8
Peak power [kW]	9.5 18 16.53 6.1
Torque [Nm]	2.6 1.5 1.27 0.7

Kind of connection		S1/100%			
Mode of operation		A			
Voltage [V]		130	220	220	220
Current [A]		31.4	22.9	22.15	18.9
Frequency [Hz]		600	1,013	1,200	2,000
Shaft speed [rpm]		17,614	30,180	36,000	59,440
Power [kW]		4.8	4.8	4.8	4.8
Peak power [kW]		9.5	18	16.53	6.1
Torque [Nm]		2.6	1.5	1.27	0.7

	S1	S2
No tool	0	1
Spindle start with tool	0	1
Tool change	1	0

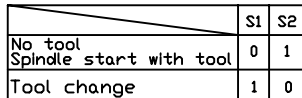
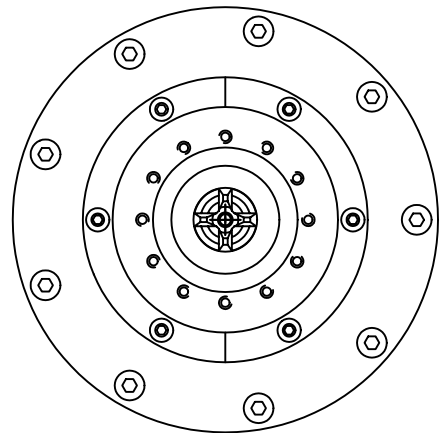
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Designed by	Checked by	Approved by - date	Filename	Date	Scale	
END		Name	EMS-100g			
亞諾精密工業		Number	095.062.040.EGM	Edition	Sheet	



CI	Cooling in <5 bar	PT1/8	Ø10mm
CO	Cooling out	PT1/8	Ø10mm
LF1	Front oil/air 5~6 bar	M5*P0.8	Ø4mm
LF2	Front oil/air 5~6 bar	M5*P0.8	Ø4mm
LR	Rear oil/air 5~6 bar	M5*P0.8	Ø4mm
LD	Oil/air return	PT1/8	Ø6mm
AS	Purge air 1~1.5 bar	M5*P0.8	Ø4mm
AC	Taper clean >5 bar	M5*P0.8	Ø4mm
PD	Cylinder air in (Release)	PT1/8-Ø8mm	6~12 bar
PI	Cylinder air in (Clamped)	PT1/8-Ø6mm	6~12 bar
EP	power lines	U1, V1, W1 ,G	
ED	Measuring system	17 pin	
ES	Clamping status monitoring	6 pin	

ED	Terminal of sensors (17Pin)	
1	Brown	A+
2	Green	A-
3	Red	R+(N+)
4		
5		
6		
7	Yellow	0V (shorted 15pin RS)
8	Brown	KTY 84+(stator)
9	White	KTY 84-(stator)
10	Violet	+5V (shorted 16pin RS)
11	Grey	B+
12	Orange	B-
13	Black	R-(N-)
14		
15	Yellow	0V (shorted 7pin RS)
16	Blue	+5V (shorted 10pin RS)
17	Short	with shield (shield)
ES	Tool position of sensors (6Pin)	
S1	(PNP)	1 Brown +10~30V DC
		2 Blue -
		3 Black S1 Signal
S2	(PNP)	4 Brown +10~30V DC
		5 Blue -
		6 Black S2 Signal

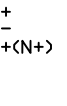
Tool holder standard			
Balance ISO 1940 part 1			
Tool type ISO-20			
Grippers type Spring #20			
Static pull force 1,500 N			
Data sheet of motor			
number of pole: 4 poles			
Kind of connection	S1/100%		
Mode of operation	Y		
Voltage [V]	225	380	380
Current [A]	18.1	13.2	12.74
Frequency [Hz]	600	1,013	1,200
Shaft speed [rpm]	17,614	30,180	36,000
Power [kW]	4.8	4.8	4.8
Peak power [kW]	9.5	18	16.53
Torque [Nm]	2.6	1.5	1.27
Kind of connection	S1/100%		
Mode of operation	A		
Voltage [V]	130	220	220
Current [A]	31.4	22.9	22.15
Frequency [Hz]	600	1,013	1,200
Shaft speed [rpm]	17,614	30,180	36,000
Power [kW]	4.8	4.8	4.8
Peak power [kW]	9.5	18	16.53
Torque [Nm]	2.6	1.5	1.27
Item ref	Quantity	Title/Name, designation, material, dimension etc	
Designed by	Checked by	Approved by - date	Filename
Date		Scale	
Name		EMS-100m	
Number		095.062.042.EMM	
Edition		Sheet	



ED Terminal of sensors (17Pin)

- 1 Brown A+
- 2 Green A-
- 3 Red R+(N+)
- 4
- 5
- 6
- 7 Yellow 0V (shorted 15pin RS)
- 8 Brown KTY 84+(stator)
- 9 White KTY 84-(stator)
- 10 Violet +5V (shorted 16pin RS)
- 11 Grey B+
- 12 Orange B-
- 13 Black R-(N-)
- 14
- 15 Yellow 0V (shorted 7pin RS)
- 16 Blue +5V (shorted 10pin RS)
- 17 Short with shield (shield)

ES Tool position of sensors (6Pin)



S1 (PNP)

- 1 Brown +10~30V DC
- 2 Blue -
- 3 Black S1 Signal

S2 (PNP)

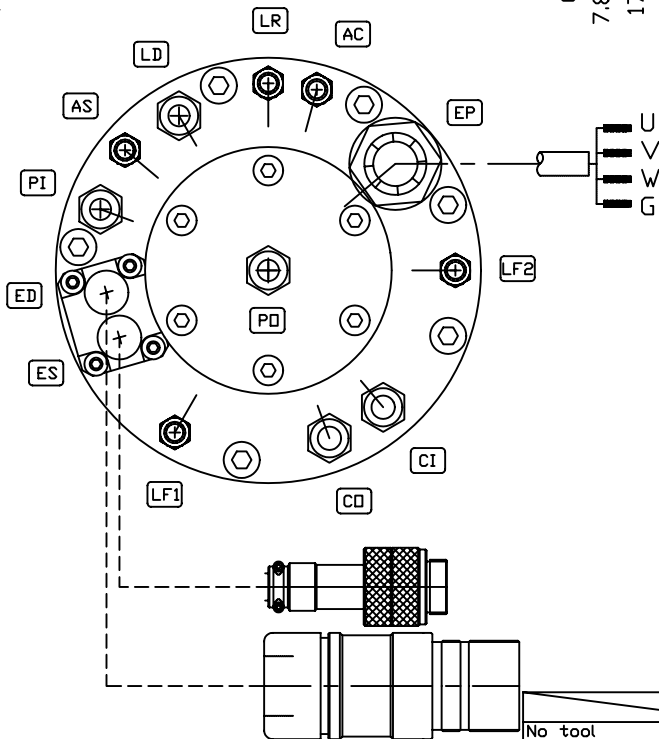
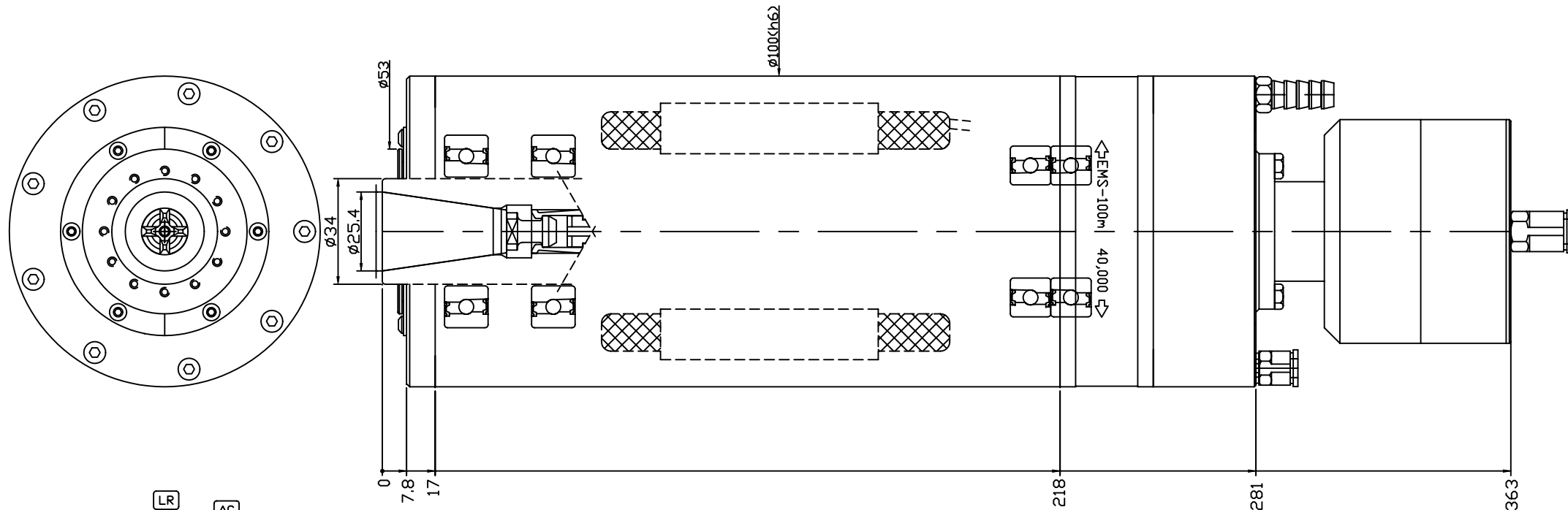
- 4 Brown +10~30V DC
- 5 Blue -
- 6 Black S2 Signal

Data sheet of motor

number of pole: 4 poles				
Kind of connection	S1/100%			
Mode of operation				
Voltage [V]	225	390	390	390
Current [A]	18.1	13.2	12.74	10.9
Frequency [Hz]	600	1.013	1.200	2.000
Shaft speed [rpm]	17,614	30,180	36,000	59,440
Power [kw]	4.8	4.8	4.8	4.8
Peak power [kw]	9.5	18	16.53	6.1
Torque [Nm]	2.6	1.5	1.27	0.7

Kind of connection	S1/100%			
Mode of operation	A			
Voltage [V]	130	220	220	220
Current [A]	31.4	22.9	22.15	18.9
Frequency [Hz]	600	1,013	1,200	2,000
Shaft speed [rpm]	17,614	30,180	36,000	59,440
Power [kw]	4.8	4.8	4.8	4.8
Peak power [kw]	9.5	18	16.53	6.1
Torque [Nm]	2.6	1.5	1.27	0.7

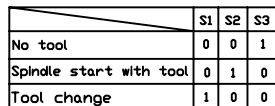
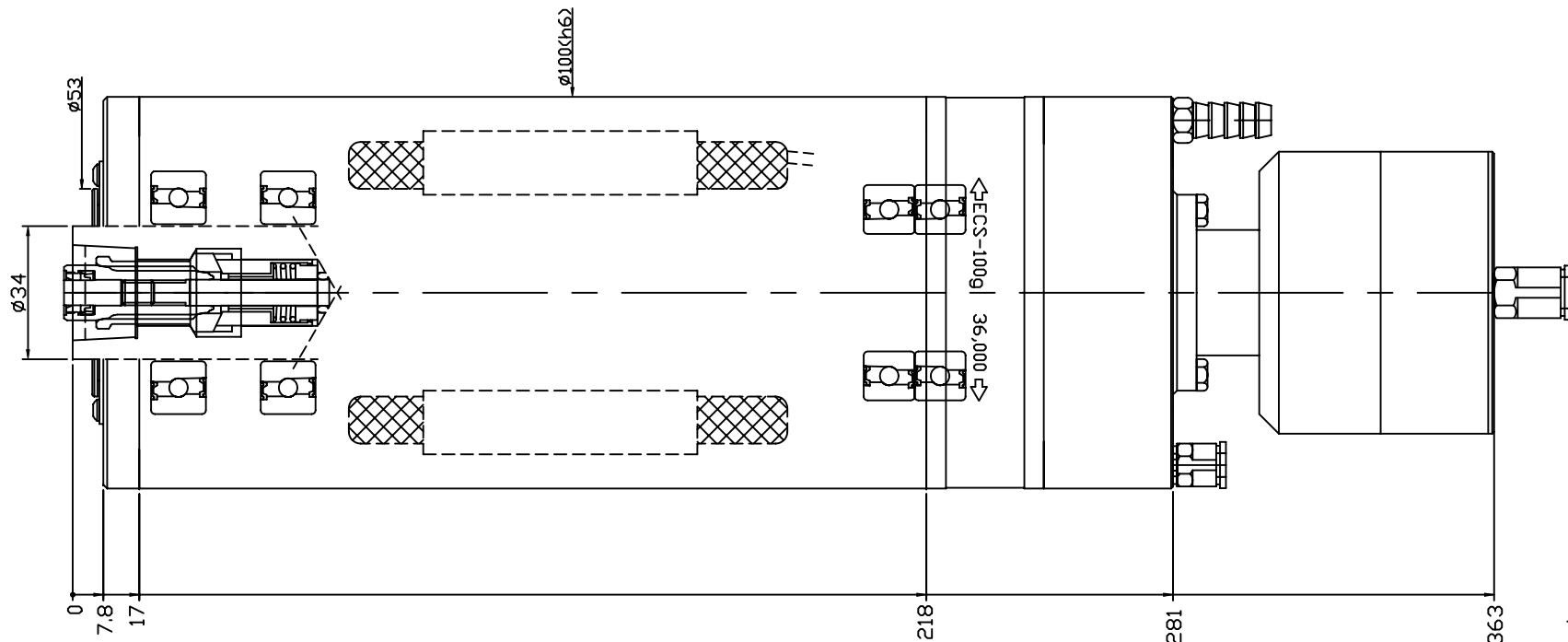
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Designed by	Checked by	Approved by - date		Filename	Date	Scale
 END 亞諾精密工業				Name	EMS-100g	
				Number	095.072.036.EGM	Edition



CI	Cooling in <5 bar	PT1/8	Ø10mm
CD	Cooling out	PT1/8	Ø10mm
LF1	Front oil/air 5~6 bar	M5*P0.8	Ø4mm
LF2	Front oil/air 5~6 bar	M5*P0.8	Ø4mm
LR	Rear oil/air 5~6 bar	M5*P0.8	Ø4mm
LD	Oil/air return	PT1/8	Ø6mm
AS	Purge air 1~1.5 bar	M5*P0.8	Ø4mm
AC	Taper clean >5 bar	M5*P0.8	Ø4mm
PD	Cylinder air in (Release)	PT1/8-Ø8mm	6~12 bar
PI	Cylinder air in (Clamped)	PT1/8-Ø6mm	6~12 bar
EP	power lines	U1, V1, W1 ,G	
ED	Measuring system	17 pin	
ES	Clamping status monitoring	6 pin	

ED	Terminal of sensors (17Pin)
1	Brown A+
2	Green A-
3	Red R+(N+)
4	
5	
6	
7	Yellow 0V (shorted 15pin RS)
8	Brown KTY 84+(stator)
9	White KTY 84-(stator)
10	Violet +5V (shorted 16pin RS)
11	Grey B+
12	Orange B-
13	Black R-(N-)
14	
15	Yellow 0V (shorted 7pin RS)
16	Blue +5V (shorted 10pin RS)
17	Short with shield (shield)
ES	Tool position of sensors (6Pin)
S1 (PNP)	1 Brown +10~30V DC
	2 Blue -
	3 Black S1 Signal
S2 (PNP)	4 Brown +10~30V DC
	5 Blue -
	6 Black S2 Signal

Tool holder standard			
Balance ISO 1940 part 1			
Tool type ISO-25			
Grippers type Spring #25			
Static pull force 1,500 N			
Data sheet of motor			
number of pole: 4 poles			
Kind of connection		S1/100%	
Mode of operation		Y	
Voltage	[V]	225	380
Current	[A]	18.1	13.2
Frequency	[Hz]	600	1,013
Shaft speed	[rpm]	17,614	30,180
Power	[kW]	4.8	4.8
Peak power	[kW]	9.5	18
Torque	[Nm]	2.6	1.5
Kind of connection		S1/100%	
Mode of operation		A	
Voltage	[V]	130	220
Current	[A]	31.4	22.9
Frequency	[Hz]	600	1,013
Shaft speed	[rpm]	17,614	30,180
Power	[kW]	4.8	4.8
Peak power	[kW]	9.5	18
Torque	[Nm]	2.6	1.5
Item ref	Quantity	Title/Name, designation, material, dimension etc	
Designed by	Checked by	Approved by - date	Filename
Date		Scale	
Name		EMS-100m	
Number		095.072.040.EMM	
Edition		Sheet	



[ES] Clamping status monitoring 6 pin

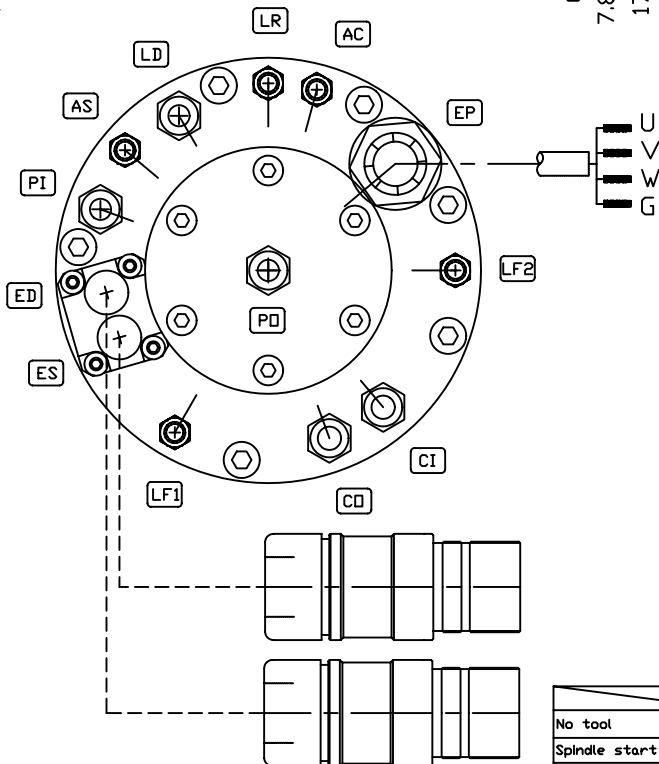
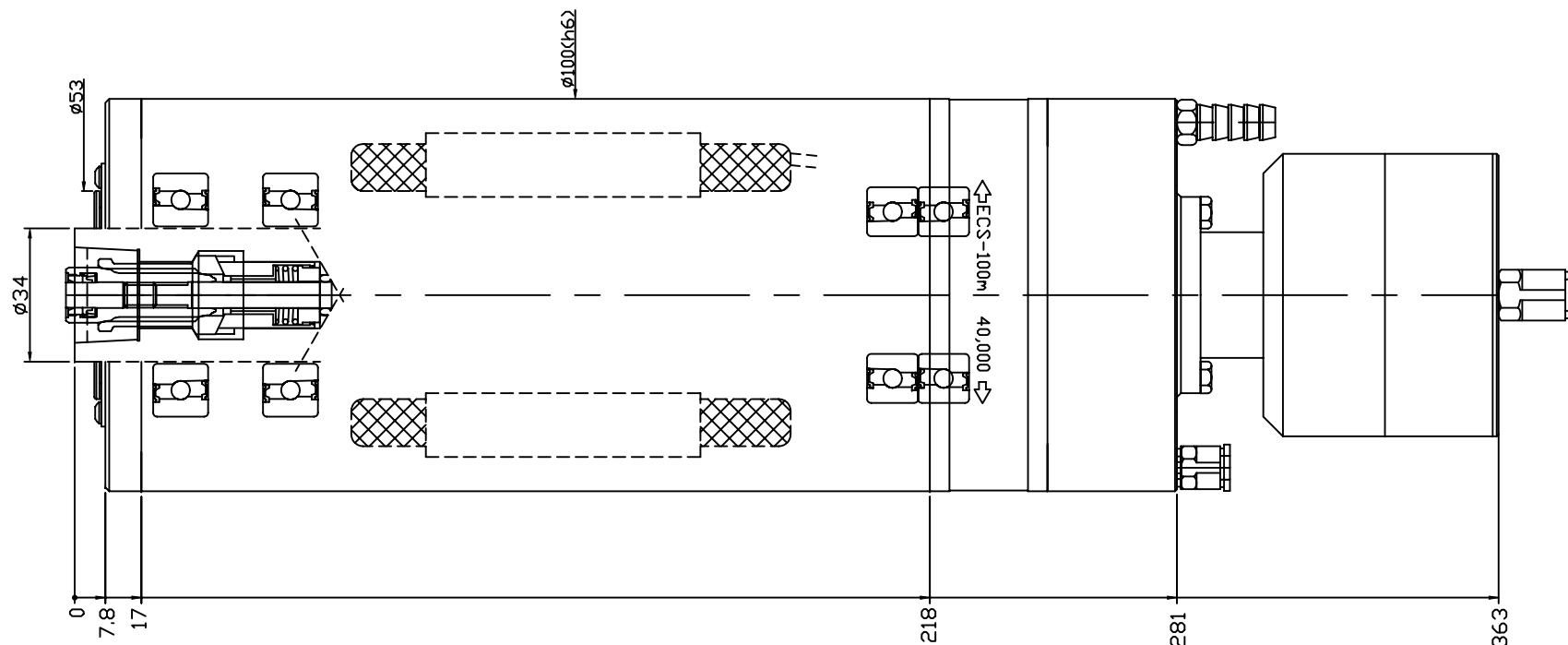
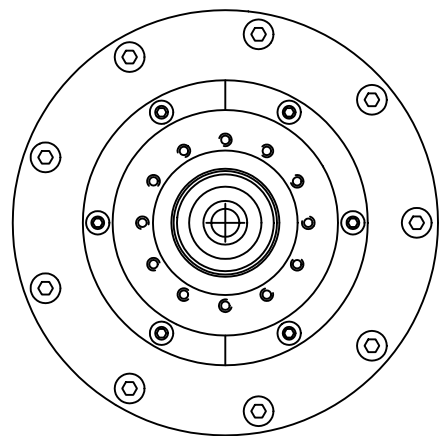
ES Tool position of sensors (12Pin)

S1 (PNP)	1	Brown	+10~30V DC	
	2	Blue	-	
	3	Black	S1 Signal	□
S2 (PNP)	4	Brown	+10~30V DC	
	5	Blue	-	
	6	Black	S2 Signal	□
S3 (PNP)	7	Brown	+10~30V DC	
	8	Blue	-	
	9	Black	S3 Signal	□

Kind of connection	S1/100%			
Mode of operation	Y			
Voltage [V]	225	380	380	380
Current [A]	18.1	13.2	12.74	10.9
Frequency [Hz]	600	1,013	1,200	2,000
Shaft speed [rpm]	17,614	30,180	36,000	59,440
Power [kw]	4.8	4.8	4.8	4.8
Peak power [kw]	9.5	18	16.53	6.1
Torque [Nm]	2.6	1.5	1.27	0.7

Kind of connection	S1/100%			
Mode of operation	Δ			
Voltage [V]	130	220	220	220
Current [A]	31.4	22.9	22.15	18.9
Frequency [Hz]	600	1,013	1,200	2,000
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Power [kw]	4.8	4.8	4.8	4.8
Peak power [kw]	9.5	18	16.53	6.1
Torque [Nm]	2.6	1.5	1.27	0.7

Item#ref		Quantity			Title/Name, designation, material, dimension etc			Article No./Reference			
Designed by		Checked by		Approved by - date		Filename		Date		Scale	
 END 亞諾精密工業						Name		ECS-100g			
						Number		09E.072.036.EGM Edition Sheet			



CI	Cooling in <5 bar	PT1/8	Ø10mm
CO	Cooling out	PT1/8	Ø10mm
LF1	Front oil/air 5~6 bar	M5*P0.8	Ø4mm
LF2	Front oil/air 5~6 bar	M5*P0.8	Ø4mm
LR	Rear oil/air 5~6 bar	M5*P0.8	Ø4mm
LD	Oil/air return	PT1/8	Ø6mm
AS	Purge air 1~1.5 bar	M5*P0.8	Ø4mm
AC	Taper clean >5 bar	M5*P0.8	Ø4mm
PD	Cylinder air in (Release)	PT1/8-Ø8mm	6~12 bar
PI	Cylinder air in (Clamped)	PT1/8-Ø6mm	6~12 bar
EP	power lines	U1, V1, W1 ,G	
ED	Measuring system	17 pin	
ES	Clamping status monitoring	6 pin	

ED Terminal of sensors (17Pin)

- 1 Brown A+
- 2 Green A-
- 3 Red R+(N+)
- 4
- 5
- 6
- 7 Yellow 0V (shorted 15pin RS)
- 8 Brown KTY 84+(stator)
- 9 White KTY 84-(stator)
- 10 Violet +5V (shorted 16pin RS)
- 11 Grey B+
- 12 Orange B-
- 13 Black R-(N-)
- 14
- 15 Yellow 0V (shorted 7pin RS)
- 16 Blue +5V (shorted 10pin RS)
- 17 Short with shield (shield)

ES Tool position of sensors (12Pin)

- S1 (PNP)
- 1 Brown +10~30V DC
 - 2 Blue -
 - 3 Black S1 Signal
- S2 (PNP)
- 4 Brown +10~30V DC
 - 5 Blue -
 - 6 Black S2 Signal
- S3 (PNP)
- 7 Brown +10~30V DC
 - 8 Blue -
 - 9 Black S3 Signal

Tool holder standard

Balance ISO 1940 part 1
Tool type DIN 69893-1, ISO 12164-1
HSK-E32
Grippers type DTT JAKOB FROM E32
Static pull force 5000 N
Enjection path 0.5mm

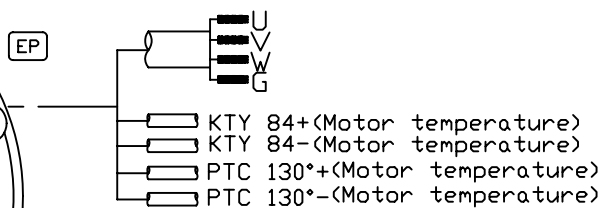
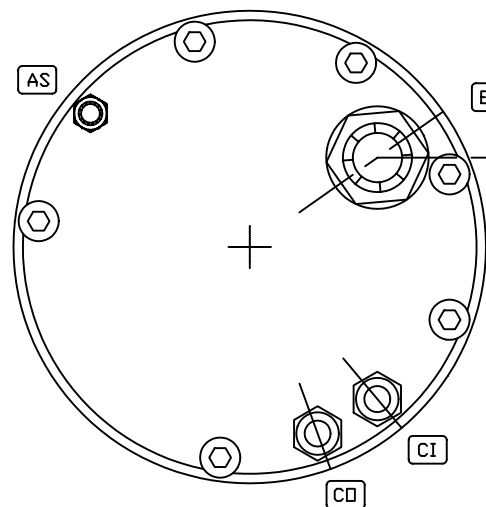
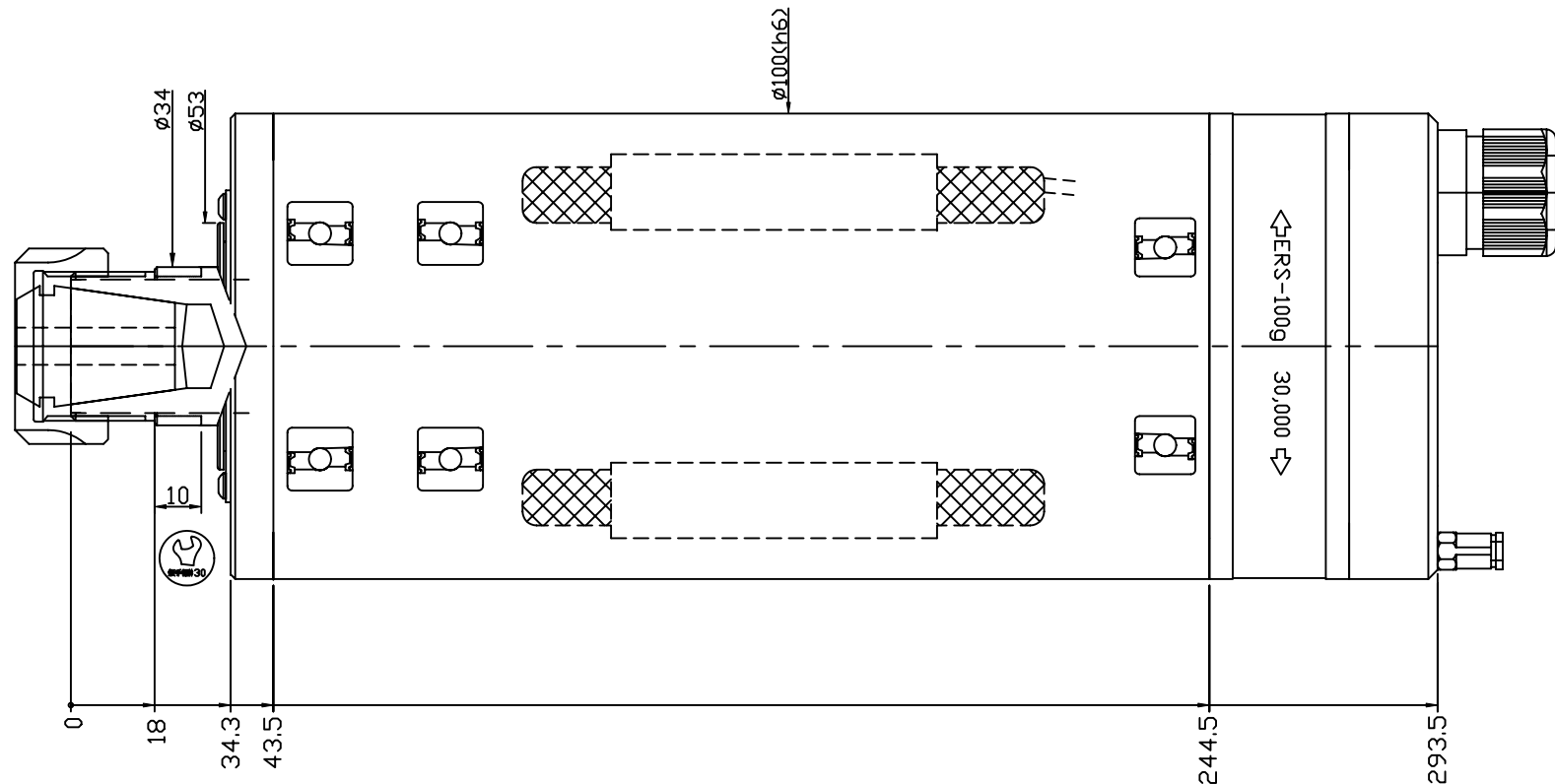
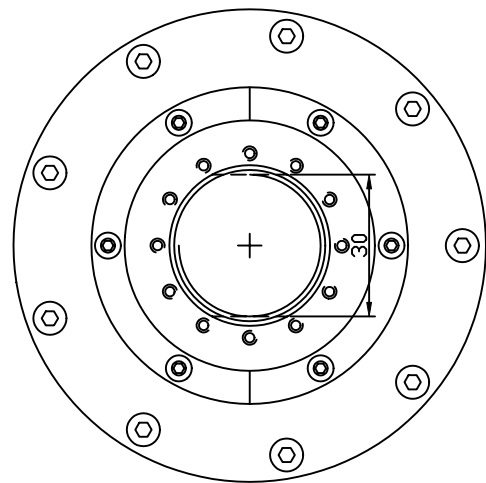
Data sheet of motor

number of pole: 4 poles

Kind of connection	S1/100%			
Mode of operation	Y			
Voltage [V]	225	380	380	380
Current [A]	18.1	13.2	12.74	10.9
Frequency [Hz]	600	1,013	1,200	2,000
Shaft speed [rpm]	17,614	30,180	36,000	59,440
Power [kW]	4.8	4.8	4.8	4.8
Peak power [kW]	9.5	18	16.53	6.1
Torque [Nm]	2.6	1.5	1.27	0.7

Kind of connection	S1/100%			
Mode of operation	A			
Voltage [V]	130	220	220	220
Current [A]	31.4	22.9	22.15	18.9
Frequency [Hz]	600	1,013	1,200	2,000
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Peak power [kW]	9.5	18	16.53	6.1
Torque [Nm]	2.6	1.5	1.27	0.7

Item ref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference			
Designed by	Checked by	Approved by - date	Filename	Date	Scale	
		Name		ECS-100m		
		Number		09E.072.040.EMM	Edition	Sheet



Tool holder standard	
Collet: ER 205	
Clamping Range $\phi 2.0 \sim \phi 16$	
NUT: ER 20-HI-Q/ERM M32*P1.5	
Manual	
CI Cooling in <5 bar	PT1/8 $\phi 10\text{mm}$
CD Cooling out	PT1/8 $\phi 10\text{mm}$
AS Purge air 1~1.5 bar	M5*P0.8 $\phi 4\text{mm}$
EP power lines	U1, V1, W1 ,G

Data sheet of motor				
number of pole: 4 poles				
Kind of connection		SI/100%		
Mode of operation		Y		
Voltage	[V]	225	380	380
Current	[A]	18.1	13.2	12.74
Frequency	[Hz]	600	1,013	1,200
Shaft speed	[rpm]	17,614	30,180	36,000
Power	[kw]	4.8	4.8	4.8
Peak power	[kw]	9.5	18	16.53
Torque	[Nm]	2.6	1.5	1.27
Kind of connection		SI/100%		
Mode of operation		A		
Voltage	[V]	130	220	220
Current	[A]	31.4	22.9	22.15
Frequency	[Hz]	600	1,013	1,200
Shaft speed	[rpm]	17,614	30,180	36,000
Power	[kw]	4.8	4.8	4.8
Peak power	[kw]	9.5	18	16.53
Torque	[Nm]	2.6	1.5	1.27
Item ref	Quantity	Title/Name, designation, material, dimension etc		Article No./Reference
Designed by	Checked by	Approved by - date	Filename	Date
Name		ERS-100g		
Number		095.072.030.EGR		