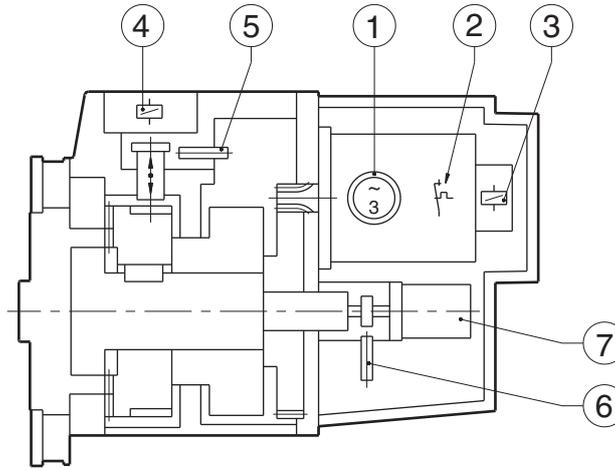
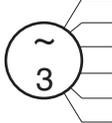
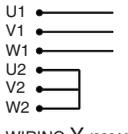
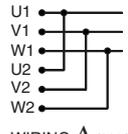


# BSV-N

## WIRING DIAGRAM

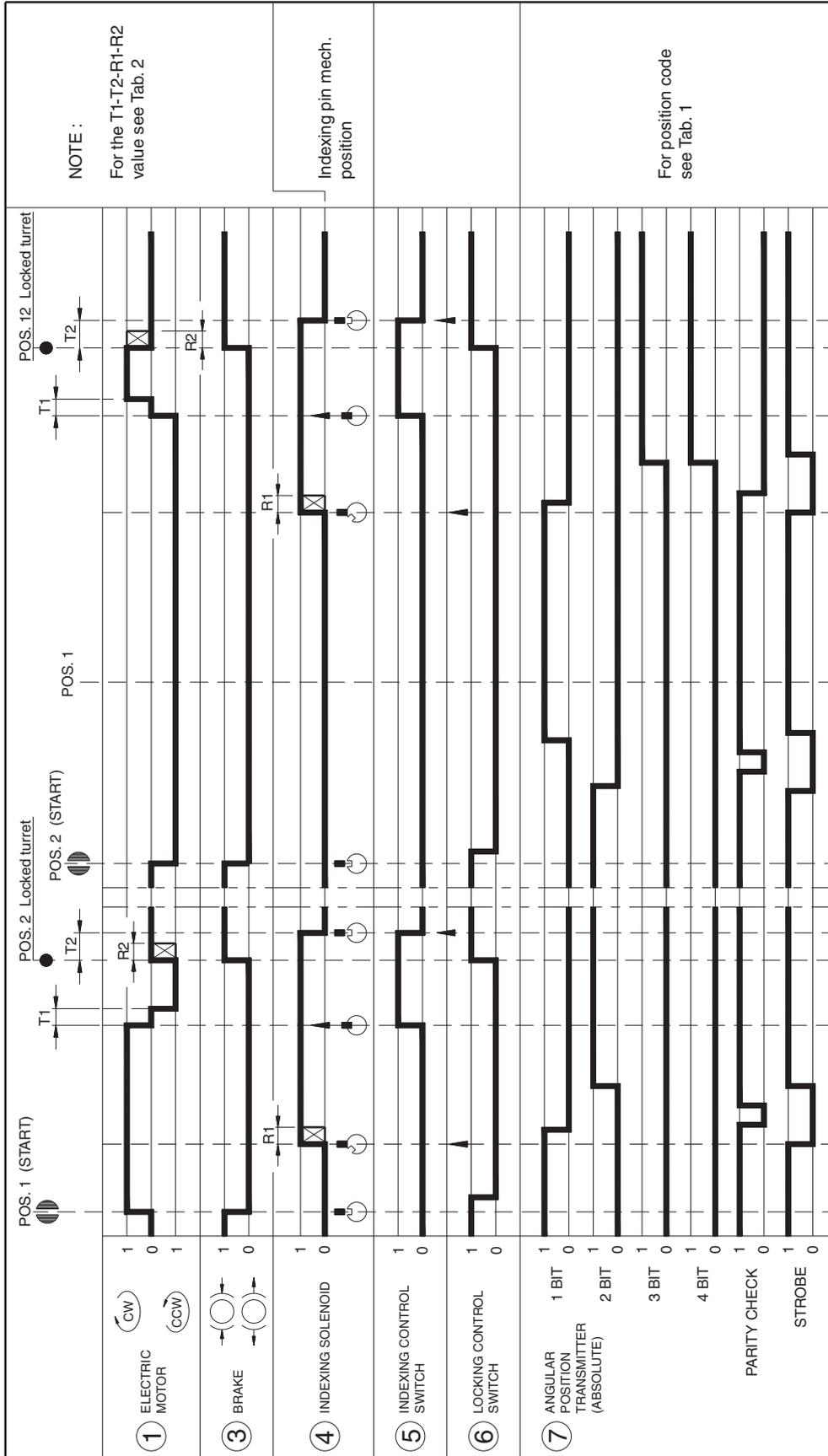


REF.	COMPONENT	CHARACTERISTICS	WIRING NUMBER		SIGNALS
			SYMBOLS	COLOUR	
1	ELECTRIC MOTOR (three-phase)	(1) 220-380 V 50/60 Hz For other characteristics see Tab. 1		U1 WHITE V1 GREEN W1 BLACK U2 WHITE V2 GREEN W2 BLACK	See Tab. 2
2	THERMAL DETECTOR	135 °C 1,5A 250V		1 BROWN 2 BROWN	(2)
3	BRAKE	24 V D.C. BSV-N 120/160 = 8 W BSV-N 200/400 = 12 W		3 GREEN 4 GREEN	
4	INDEXING SOLENOID	24V D.C. 44 W		5 BLUE 6 BROWN	
5	INDEXING CONTROL SWITCH	24V D.C. ± 10% 200 mA (load) OUTPUT-PNP-NO		7 BROWN 8 BLACK 9 BLUE	+ V D.C. EXIT 0 V D.C.
6	LOCKING CONTROL SWITCH			7 BROWN 10 BLACK 9 BLUE	+ V D.C. EXIT 0 V D.C.
7	ANGULAR POSITION TRANSMITTER (ABSOLUTE)	24 V D.C. ± 10% 350 mA (supply) 50 mA/exit (load) OUTPUT-PNP		7 BROWN 9 BLUE 11 WHITE 12 YELLOW 13 GREEN 14 VIOLET 15 BLACK 16 PINK	+ V D.C. 0 V D.C. Bit 1 Bit 2 Bit 3 Bit 4 Strobe Parity check
				GREEN / YELLOW	PE

ELECTRIC MOTOR CHARACTERISTICS			Tab. 1	ELECTRIC MOTOR'S WIRING (1)		Tab. 2
Turret size	Minimum required power	Short circuit power				
<b>BSV-N 120/160</b>	KVA 1,10	KVA 1,60		U1 V1 W1 U2 V2 W2	U1 V1 W1 U2 V2 W2	
<b>BSV-N 200/250</b>	KVA 1,80	KVA 2,80		WIRING Y (380 V)	WIRING Δ (220 V)	
<b>BSV-N 320/400</b>	KVA 2,60	KVA 3,80				

(1) Other voltages on request.

(2) The thermal detector gives a signal only motor overheating.



Tab. 2

TURRET SIZE	120		160		200		250		320		400		
	PROGRAMMING TIME	T1 (ms)		T2 (ms)		R1 (ms)		R2 (ms)		T1 (ms)		T2 (ms)	
		Standard and fast		Standard and fast		Standard and fast		Standard and fast		Standard and fast		Standard and fast	
ALLOWED LAG TIME MAX	Slowed		Slowed		Standard		Standard		Slow and very slow		Slow and very slow		

Tab. 1

FUNCTION	POSITIONS											
	1	2	3	4	5	6	7	8	9	10	11	12
1 BIT	1	0	1	0	1	0	1	0	1	0	1	0
2 BIT	0	1	1	0	0	1	1	0	0	1	1	0
3 BIT	0	0	0	1	1	1	1	0	0	0	0	1
4 BIT	0	0	0	0	0	0	0	1	1	1	1	1
PARITY CHECK	1	1	0	1	0	0	1	1	0	0	1	0
STROBE	1	1	1	1	1	1	1	1	1	1	1	1

CW → ← CCW

### 1. – Signals

To get a change of positions on the BSV-N turrets, the control equipment (usually a N.C. equipment) must control the components mentioned below according to a well defined sequence (see wiring diagram on page 15).

- Motor (1)
- Brake (3)
- Indexing solenoid (4)

The following output signals from the turret are provided for driving the positioning cycle:

- Angular position given by the angular position transmitter (7)
- Indexing control switch (5)
- Locking control switch (6).

### 1. – Description of the operating sequence

This description refers to sequence cycle: the first part gives the sequence to pass from position 1 to position 2 with clockwise rotation, the second part gives the sequence to pass from position 2 to position 12 with counterclockwise rotation.

As indicated by the cycle, the controls are to be performed according with the following sequence:

- De-energize the brake (3) and start motor rotation in the desired direction.

- If, as in the case shown by the diagram, the next position (pos. 2) is the Stop position, when the strobe signal reached a zero level, the solenoid (4) is to be energized.

In case of passage from position 2 to position 12, wait for the reading signaling the passage on pos. 1 then, since the next one is the Stop position, wait until the next strobe signal reaches a zero level and (at that time only) energize the solenoid (4).

**N.B.:** The maximum lag time between the reading of the strobe signal and the excitation of the solenoid (4) cannot exceed the R1 values indicated in the table.

- The turret goes on rotating until the indexing pin, pushed by the solenoid (4), enters into the mechanical stop slot.

This movement is detected by the sensor (5) which must immediately stop the motor that, once expired the T1 time will re-start rotating in the opposite direction.

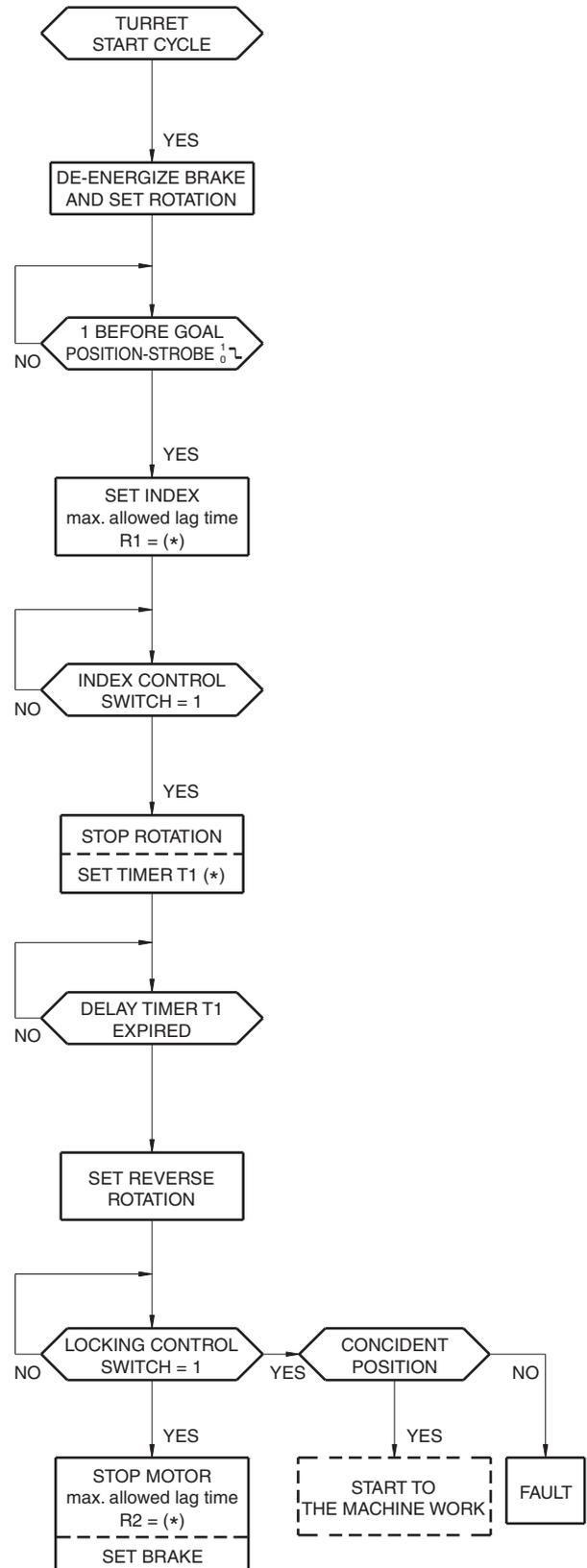
- During this phase the turret is locking and its locked position is detected by the sensor (6) and this signal is used to stop the motor (1). The maximum lag time between the signal of the sensor and the stopping of the motor must never exceed the R2 value shown in the table. At this point the machine can be started, in order to go on working.

- The solenoid (4) is to be de-energized after the expiration of the T2 lag time starting from the moment when the sensor (6) signal is read.

**N.B.:** The T1, T2, R1, R2 times must be understood as real times execution of the controls and the signals checked on the terminal board of the turret.

For an accurate detection and measurement of the above mentioned values it is advisable to use adequate instrumentation such as an oscilloscope with memory and current sensing devices.

### Flow chart



(\*) See tab. 2 sheet 16 (Cycle).