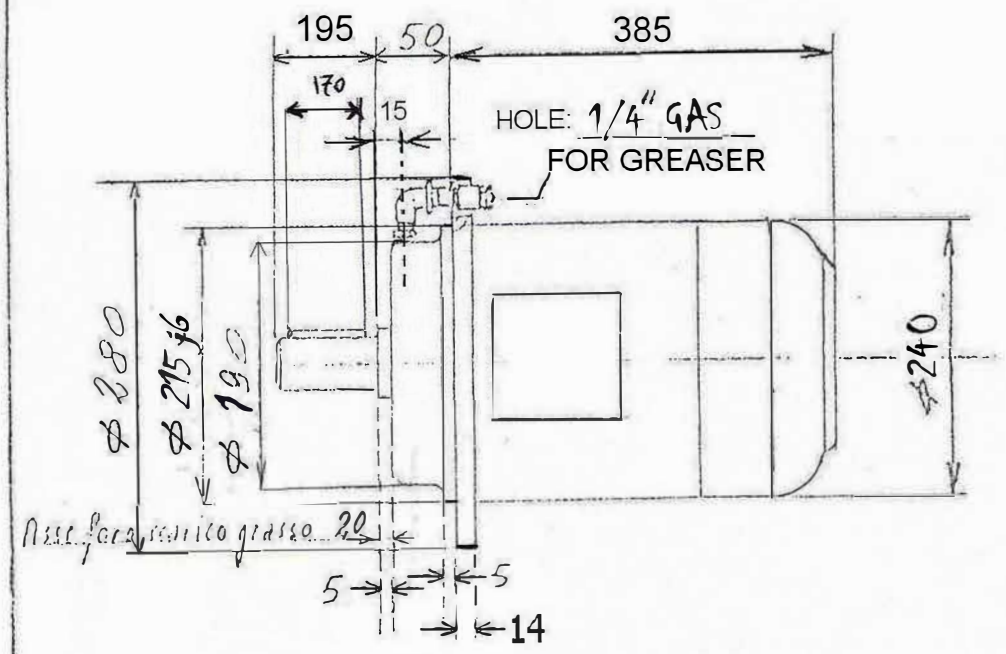
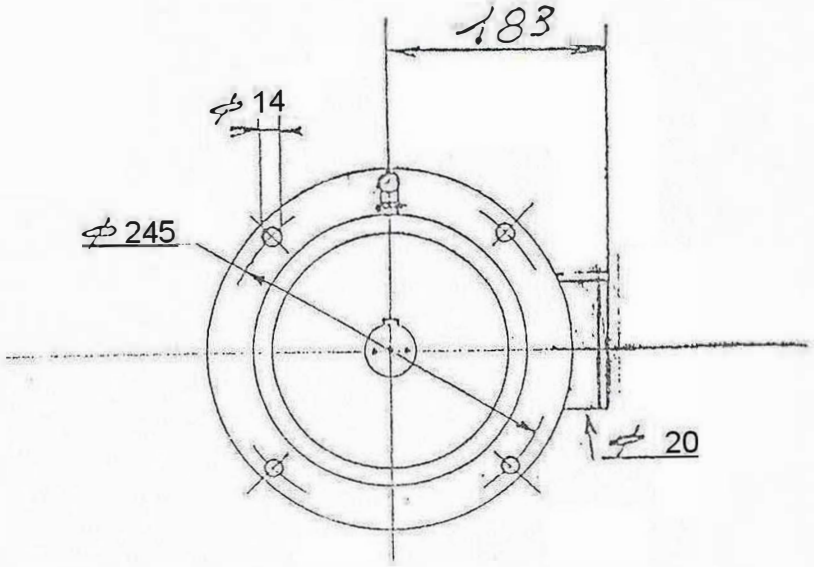
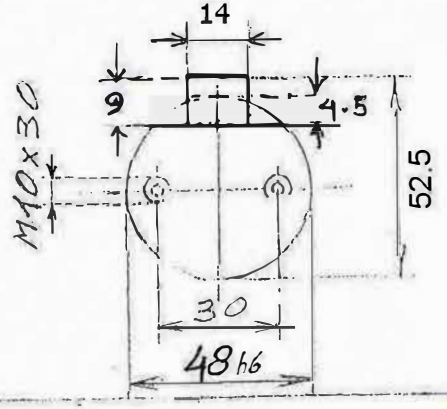
		24/06/97	ISSUE	CAPONE
		DATE	REVISION	NAME
		Title:	QTB ROLLER TABLE	
AC MOTOR		UNIT	REQUESTED	SUPPLIED
MANUFACTURER				
MOTOR TYPE			SQUIRREL CAGE	
QUANTITY			21	
RATED POWER		kW	3	
SPEED	RATED SPEED	rpm	1500	
	COSTANT TORQUE	rpm	210 - 1500	
	COSTANT POWER	rpm	1500 - 2250	
TORQUE	LOCKED ROTOR (START)	Nm		
	MINIMUM	Nm		
	BREAKDOWN (MAXIMUM)	Nm		
CONSTRUCTION	COOLING METHOD	IC	141	
	PROTECTION DEGREE	IP	55	
	TERMINAL BOX PROT. DEGREE	IP	55	
	ROTOR INERTIA	kgm^2		
	MOTOR WEIGHT	kg		
INSULATION	INSULATION TYPE		F	
	FUNCTIONALITY		F	
	TROPICALIZED		NO	
STATOR WINDING	NUMBER OF WINDINGS		1	
	NUMBER OF POLES		4	
	RATED VOLTAGE	V	380 ± 10%	
	RATED CURRENT	A		
	RATED FREQUENCY	Hz	50 ± 4%	
	RATED POWER FACTOR			
	SUPPLIED BY		inverter	
ROTOR WINDING	TYPE		cage	
	RATED VOLTAGE	V	-	
	RATED CURRENT	A	-	
LOADING	CONTINOUS	%	see IEC standard	
	IN TWO HOURS	%	"	
	FREQUENTLY APPLIED	%	"	
	OCCASIONALLY APPLIED	%	"	
	DUTY (CLASS-PERCENT)	- %	SEE CYCLE	
ACCESSORIES:				
BLOWER	RATED POWER	kW		
	RATED VOLTAGE	V		
	RATED FREQUENCY	Hz		
	RATED CURRENT	A		
	RATED SPEED	rpm		
BRAKE	TYPE			
	POWER	kW		
	VOLTAGE	V		
SPACE HEATER	VOLTAGE	V		
	POWER	kW		
ENCODER	TYPE			
	DATA			
THERMAL PROT.	WINDINGS			
	BEARINGS			
COOL. SYSTEM ACCESSORIES	COOLING AIR PRESSURE			
	COOLING AIR TEMPERATURE			
	COOLING FILTER CLOGGED			
	COOLING WATER FLOW			
	WATER TRAP LEVEL			

Note:

FIMET	Macchina: MAF132M4	Nome del pezzo: Motore per MOTORULLO spec. qui è di ingombro	Scala: —	MODELLO: —	Motor







MODIFICHE

REQUIRED DECELERATION >= 4.8 m/sec²

J_{roller} = **0,12** Kgm²

J_{motor} = **0,01** Kgm²   [illegible]

$J_{material}$ = **0,034** Kgm²

→ 5,23 (ROLLING SPEED ~15 m/s)

3120 Kg/mt — 3.9 Kg/roller

DECELLERATION NECESSARY TO BE ABLE TO ALIGNED SHORT BARS AT THE BEGINNING OF COOLING BED (THEORY + EXPERIENCE)

$a_1 = -4.8$ m/sec² EXAMPLE > $V_1 = 15$ m/s → $V_2 = V_1 - a_1 \cdot t$

$= 15 - 4.8 \cdot 2.5 = 3$ m/s

$$C_{acc} = \frac{J \cdot \frac{\Delta V}{r}}{t} = \frac{(0.12+0.01+0.034) \cdot \frac{(15-3)}{0.094}}{2.5} = 8.4 \text{ Nm}$$

CONTINUOUS TORQUE = 3 Nm (FROM EXPERIENCE)

$$\text{TOTAL TORQUE} = \frac{8.4+3}{0.9} = 12.5 \text{ Nm}$$

(0.9 = EFFICIENCY)

$$\text{SLIDING TORQUE} = 15.4 \cdot 1.2 \cdot 0.35 \cdot 9.81 \cdot 0.094 + 3 = 9 \text{ Nm}$$

(comprensive of continuous torque)

- 15.4 · 1.2: WEIGHT OF BAR ON EACH ROLLER ø 50
- 0.35: FRICTION
- 0.094: ROLLER RADIUS
- 3: CONTINUOUS TORQUE

THE SHOWN SLIDING TORQUE WILL BE PRESENT IN THE RANGE 0÷NETWORK Hz (ABOVE THIS DATA THE WEIGHT OF MATERIAL TO BE TRANSPORTED WILL REDUCED)

THE ACCELERATION TORQUE WILL BE NECESSARY IN THE RANGE 0-70 Hz TO MANTAIN THE SHOWN DEC. VALUE (4.8 m/s²).THE REDUCTION OF BAR WEIGHT WILL NOT AFFECT TO MUCH THE TOTAL TORQUE DURING ACCELERATION PHASE (WE'LL CONSIDER 12.5 Nm)

THE MAX POWER IS DEPENDING FROM THE MAX TORQUE PRESENT AT THE HIGHER SPEED

$$P = \frac{12.5 \cdot 2250}{9550} = 2.95 \text{ Kw}$$

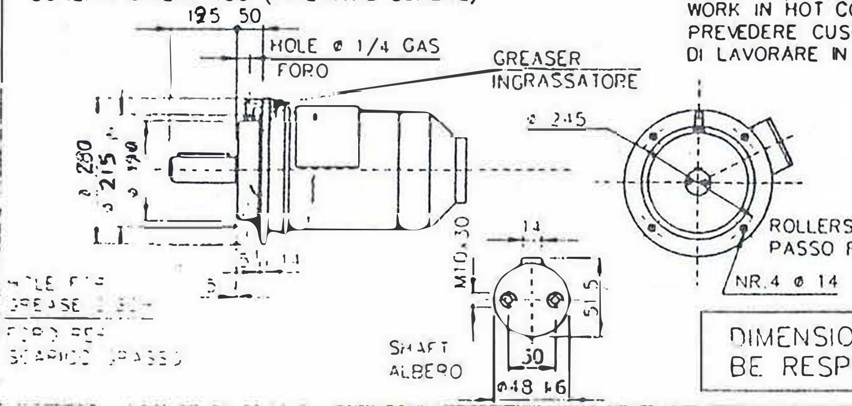
USING A 2.2 Kw MOTOR AN OVERLOAD OF 30 ÷ 40 % WILL BE REQUIRED

NOTE / NOTES			
POS. EXECTR. / ELECTR. POS.	DISEGNO / DRAWING		
POS. MOT. MST. / MEAN MOT. MST.	TIPO / TYPE		
POS. T.P.C. / MECH. EQUIP.	COSTRUTTORE / CONSTRUCTOR		

Formato	Disegn. / Drwn.	Progett. / Design.	Control / Control	TITOLO - TITLE
A3	CAPPELLETTI	F.A.C.	MAZZOLO	QTB ROLLER TABLE / VIA A RULLI QTB

4796234

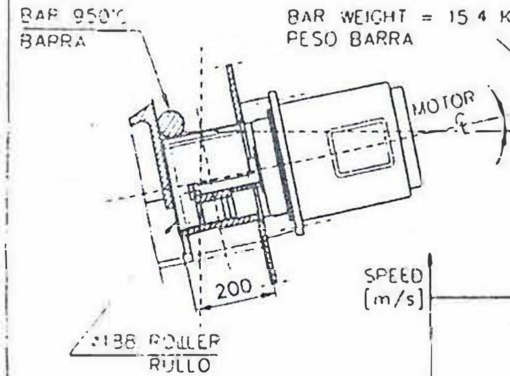
SCHEMA CINEMATICO (KINEMATIC SCHEME)



TO PROVIDE BEARINGS ABLE TO WORK IN HOT CONDITIONS.
PREVEDERE CUSCINETTI IN GRADO DI LAVORARE IN AMBIENTE CALDO.

DIMENSION MUST BE RESPECTED

CICLO DI LAVORO (WORKING CYCLE)



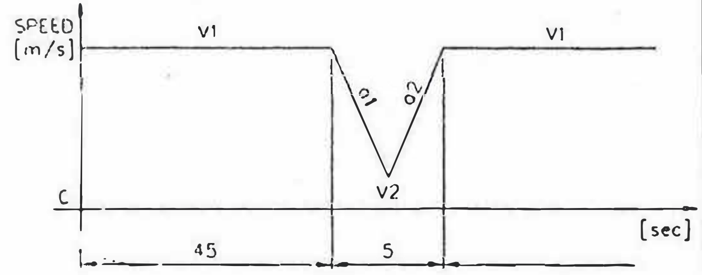
2	22	m/s
210	2250	RPM

$a1 = -4.8\ m/s^2$

$a2 = +4.8\ m/s^2$

V1<= 22 m/s

V2>= 2 m/s

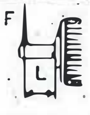


REPEATED CYCLE 24 HOURS/DAY
CICLO RIPETITIVO 24 ORE AL GIORNO

NOTE(NOTES)

THE MOTOR MUST GUARANTEE AN ACCELERATION DURING LOADLESS >= 4.8 m/s²
IL MOTORE DEVE GARANTIRE UNA ACCELERAZIONE A VUOTO >= 4.8 m/s²
THE MOTOR MUST GUARANTEE A DECELLERATION DURING MAX LOAD >= 4.8 m/s²
IL MOTORE DEVE GARANTIRE UNA DECELERAZIONE A CARICO >= 4.8 m/s²
IT WILL BE POSSIBLE AN "CONTINUOUS DUTY" 24 HOURS/DAY
SARA' ANCHE POSSIBILE UN SERVIZIO CONTINUO 24 ORE AL GIORNO

MOTORE A.C. / A.C. MOTOR	ROTORE A GABBIA / SQUIRREL CAGE ☒ · AUTOFRENANTE / SELF BRAKING ☐ · ROTORE AVVOLTO / WOUND ROTOR ☐ · CON BASAMENTO / WITH BASE PLATE ☐
	INERZIA MOTORE / MOTOR INERTIA
MACCHINA COMANDATA	DENOMINAZIONE / DESCRIPTION · ACCOPPIAMENTO / MECHANICAL CONNECTION · GIUNTO / COUPLING ☐ · CINGHIA / BELT ☐ · F · Fr= N · L= mm
	COPPIA RICHIESTA / REQUIRED TORQUE · A CARICO / AT LOAD SEE ATTACHED Nm · A VUOTO / AT NO LOAD SHEET Nm · MAX / PEAK Nm
	INERZIA MACCHINA A ASSE MOTORE / MACHINE INERTIA AT MOTOR SHAFT · A CARICO / AT LOAD SEE ATTACHED · A VUOTO / AT NO LOAD SHEET
CARATTERISTICHE MOTORE / MOTOR SPECIFICATIONS	POTENZA NOMINALE / RATED OUTPUT: SEE ATTACHED SHEET kW
	VELOCITA' NOMINALE / RATED SPEED: 1500 - 50Hz / 1800 - 60Hz Rpm
	COPPIA COSTANTE / CONSTANT TORQUE: Rpm da / from 210 a / to 1500/50Hz / 1800/60Hz
	POTENZA COSTANTE / CONSTANT POWER: Rpm da / from 1501/50Hz / 1801/60Hz a / to 2250
	ALIMENTAZIONE DA / POWER SUPPLY: DALLA RETE / FROM NETWORK · DA INVERTER / FROM INVERTER · BIDIREZIONALE / BIDIRECTIONAL
	FRENATURA / BREAKING: IN C.C. / D.C. ☐ · IN CONTROCORR. / PLUGGING %C
	FRENO MECCANICO / MECHANICAL BRAKE ☐ TIPO / TYPE
	SERVIZIO / DUTY: -CONTINUO / CONTINUOUS ☐ · -INTERMITTENTE (VEDI CICLO DI LAVORO) / INTERMITTENT (SEE WORKING CYCLE) ☒
	SPORGENZA D'ALBERO / END SHAFT: UNA / ONE ☒ · DUE / TWO ☐
	ROTAZIONE / ROTATION: ORARIA / C.W. ☐ · ANTIORARIA / C.C.W. ☐ · REVERSIBILE / REV. ☒
COSTRUZIONE / CONSTRUCTION	VENTILAZIONE / VENTILATION IC · PROTEZIONE / PROTECTION IP
	FORMA COSTRUTTIVA / FRAME TYPE: IM 3001 (B5)
	INSTALLAZIONE SCATOLA MORSETTI / TERMINAL BOX LOCATION: DX / RH ☐ · SX / LH ☐ · SUP / TOP ☐ · INF / BOTTOM ☐



ACCESSORI / ACCESSORIES	DESCRIZIONE / DESCRIPTION	COSTRUTTORE / CONSTRUCTOR	TIPO / TYPE	DATI ELETTRICI / ELECTRIC DATA
	GENERATORE D'IMPULSI (PULSE GENERATOR) ☐			
	RESISTENZA ANTICONDENSA (SPACE HEATER) ☐			
	TERMORILEVATORI (THERMAL DETECTOR) ☐		KLIXON - TERMISTORI - PT100	
	VENTILATORI AUSILIARI / AUXILIARY FANS			

NOTE / NOTES

COMM	ITEM	Q.TY	
4025	29.01	2	(MOVABLE BENCH)
4025	29.02	19	(QTB)

POS. T.F.C. / TFC. EQUIP.	POS. MOT. LIST / ITEM MOT. LIST	POS. ELETTR. / ELECTR. POS.	
COSTRUTTORE / CONSTRUCTOR	TIPO / TYPE	DISEGNO / DRAWING	
A3	Disegn. / Drwn. CAPPELLETTI	Progett. / Design. F.A.D.	Control. / Control. MAZZOLO

TITOLO-TITLE: QTB ROLLER TABLE
VIA A RULLI QTB

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34.X 1/2