1-2 Spindle Nose

1. ϕ132 through hole 2400 min^{-1} (JIS A2-11")

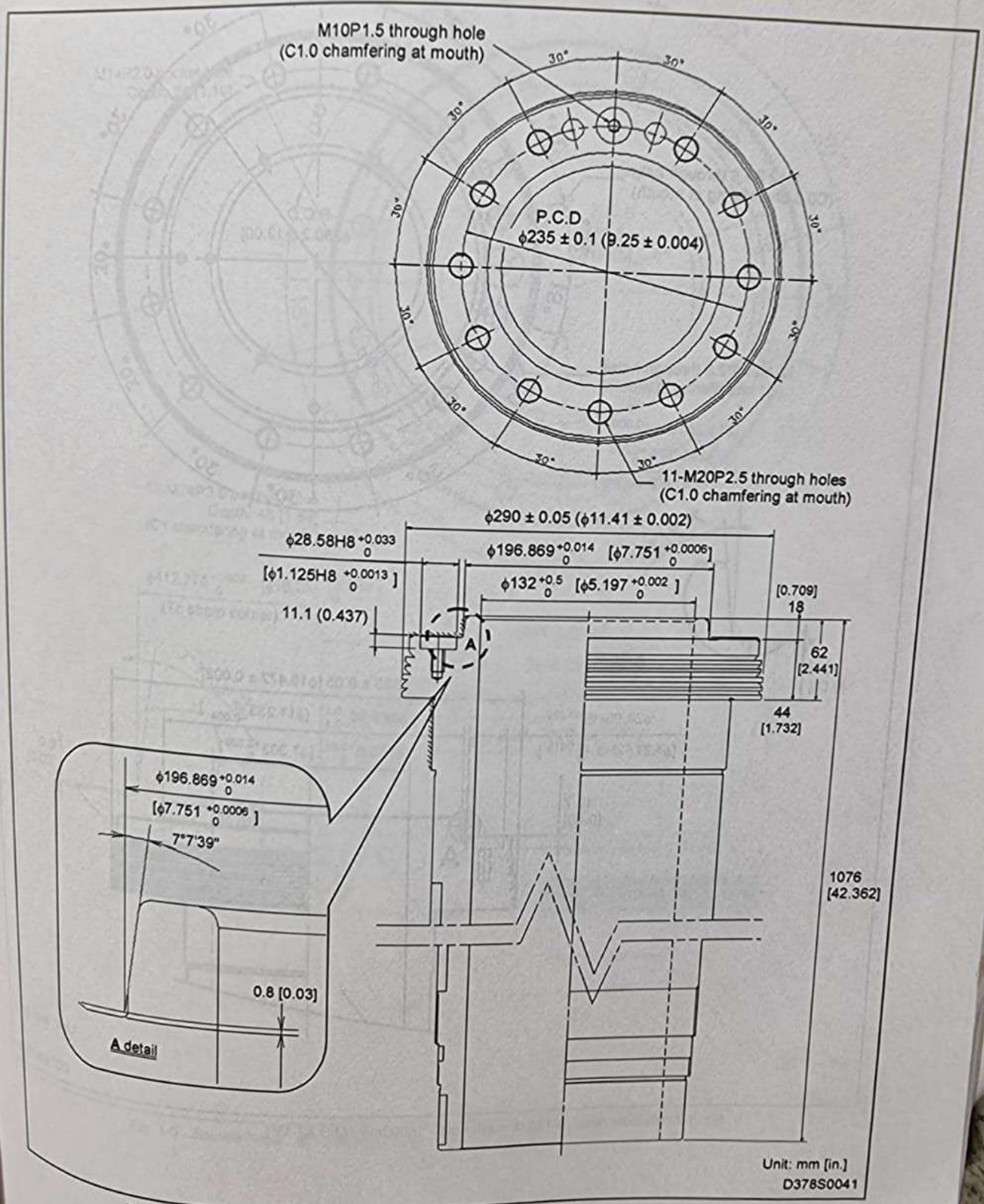
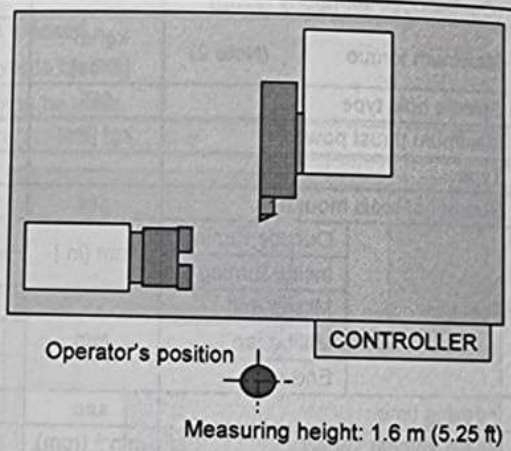


Fig. 1-1 Spindle nose ϕ132 through hole 2400 min^{-1} (JIS A2-11")

Item			Unit	CYBERTECH TURN 4500M
Machine dimensions & weight	Machine dimensions	Height of centers	mm [in.]	1250 [49.2]
		Length		8470 [333.5]
		Width		3763 [148.2]
		Height		2800 [110.3]
	Floor space required		m^2 [ft^2]	25.6 [275.6]
	Weight (including oil pan)		kgf [lbs]	23800 [52470]
Noise	Noise level (L_{WA})		dBA	79.4
	Unconfirmed level (K)			4
	Measuring conditions			1. Spindle speed: 1600 min^{-1} (During workpiece gripping by chuck) 2. Feed axis to be driven. 3. Turret to be indexed. 4. Chip conveyor to be ON. 5. Tailstock not to be used.
	Measuring method			EN-12415/12417/12478, ISO230-5
	Measuring position			 (Note) The main sources of the noise air-conducted from the machine will include the following: - Spindle drive - Feed axis drive - Turret index unit - Chip conveyor
Remarks: The figures quoted are emission levels and are not necessarily safe working levels. Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure of the work-force include the characteristics of the work room, the other sources of noise, etc. i.e. the number of machines and other adjacent processes, and the length of time for which an operator is exposed to the noise. Also the permissible exposure level can vary from country to country. This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk.				

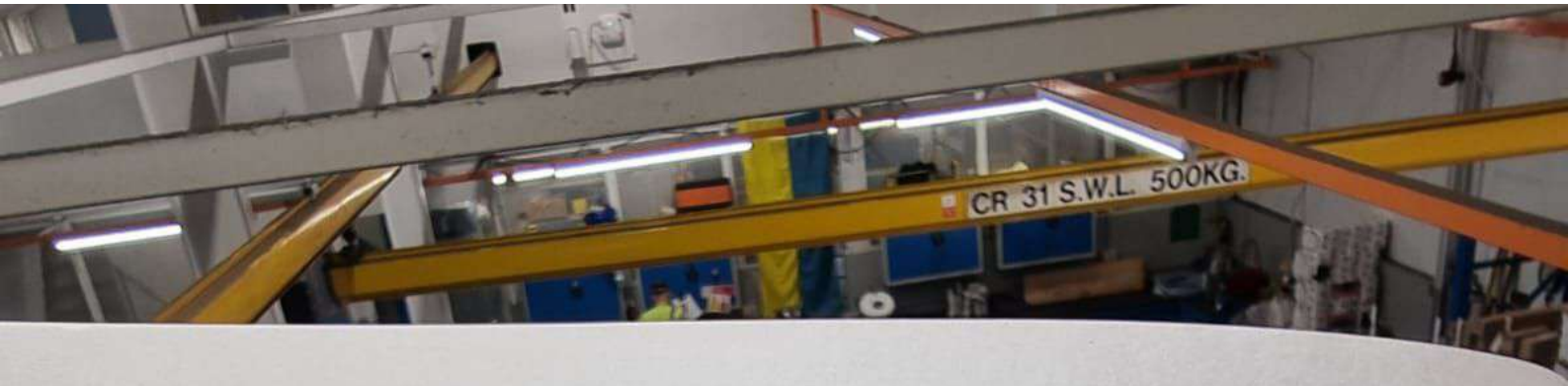
Note 1: The center of gravity of the chucked workpiece must be within a distance of 320 mm (12.60 in.) from the spindle nose.
The rigidity and holding force of the workpiece support are not allowed for.
The maximum admissible weight is a theoretical value of static load; note that the bearing life further depends upon rotational balance and cutting conditions.

Note 2: Even during cutting within specification with a standard outside turning tool, the main component force must not exceed 1200 kgf (2640 lbs).

Note 3: The figures indicated on the machine plates shall be applied if different from the manual.

3. CYBERTECH TURN 4500M, Center distance: 4000 mm

Item			Unit	CYBERTECH TURN 4500M			
Capacity	Maximum swing		mm [in.]	ϕ860 [ϕ33.8]			
	Swing over cross slide			ϕ700 [ϕ27.5]			
	Maximum machining diameter			ϕ810 [ϕ31.9]			
	Maximum machining length			4052 [160]			
	Maximum support weight (Note 1)	Chuck work	kgf [lbs]	640 [1408]	4300 [9460]	6000 [13200]	
		Shaft work		2500 [5500]	2500 [5500]	2500 [5500]	
Turning spindle	Rotating speed		min^{-1} (rpm)	35 to 2400	4 to 1600	3 to 1000	3 to 750
	Through-hole diameter		mm [in.]	ϕ132 [ϕ5.2]	ϕ185 [ϕ7.3]	ϕ275 [ϕ10.8]	ϕ320 [12.6]
	Spindle nose		—	JIS A2-11"	JIS A2-15"	JIS A2-20"	JIS A2-20"
	Motor output (Note 2) (Continuous/Half-hourly rating)		kW [HP]	37/30 [49/40]			
	Maximum torque (Note 2)		kgf·m [ft·lbs]	333 [2408]	459 [3319]	591 [4273]	591 [4273]
Tailstock	Spindle hole type		MT	No. 5			
	Maximum thrust power		kgf [lbs]	2548 [5607]			
Upper turret	Type		—	Bolt fixing type			
	Number of tools mounted		pcs	12			
	Tool size	Outside turning	mm [in.]	□32 [□1.25]			
		Inside turning		ϕ50 [ϕ2]			
		Milling drill	mm	ϕ40			
		Milling tap		M30			
		End-mill		ϕ40			
	Indexing time		sec	0.4/step			
	Milling spindle speed		min^{-1} (rpm)	25 to 3000			
	Milling output (Continuous/Half-hourly rating)		kW [HP]	11/7.5 [15/10]			
	Maximum torque of milling spindle		kgf·m [ft·lbs]	14.3 [103]			
Lower turret	Type		—	—			
	Number of tools mounted		pcs	—			
	Outside/Face turning tool		mm [in.]	—			
	Boring bar		mm [in.]	—			
	Indexing time		sec	24 [945]			
Feed axes	Rapid traverse	X1	m/min [IPM]	—			
		X2		30 [1180]			
		Z1		—			
		Z2		4.5 [177]			
		Axis of tailstock		540 [21.2]			
	Movement stroke	X1	mm [in.]	—			
		X2		4146 [163.2]			
		Z1		—			
		Z2		3350 [131.8]			
		Axis of tailstock		970 [256]			
Others	Coolant tank capacity		L [gal (US)]	76.38			
	Power requirement (continuous)		kVA	0.5 [71]			
	Air pressure		MPa [PSI]	350 [12.4]			
	Total air required (regularly)		L/min (ANR) [ft^3/min]				



1-3 Characteristic of the Turning Spindle Output

1. Characteristic of the turning spindle motor (ϕ132 through hole)

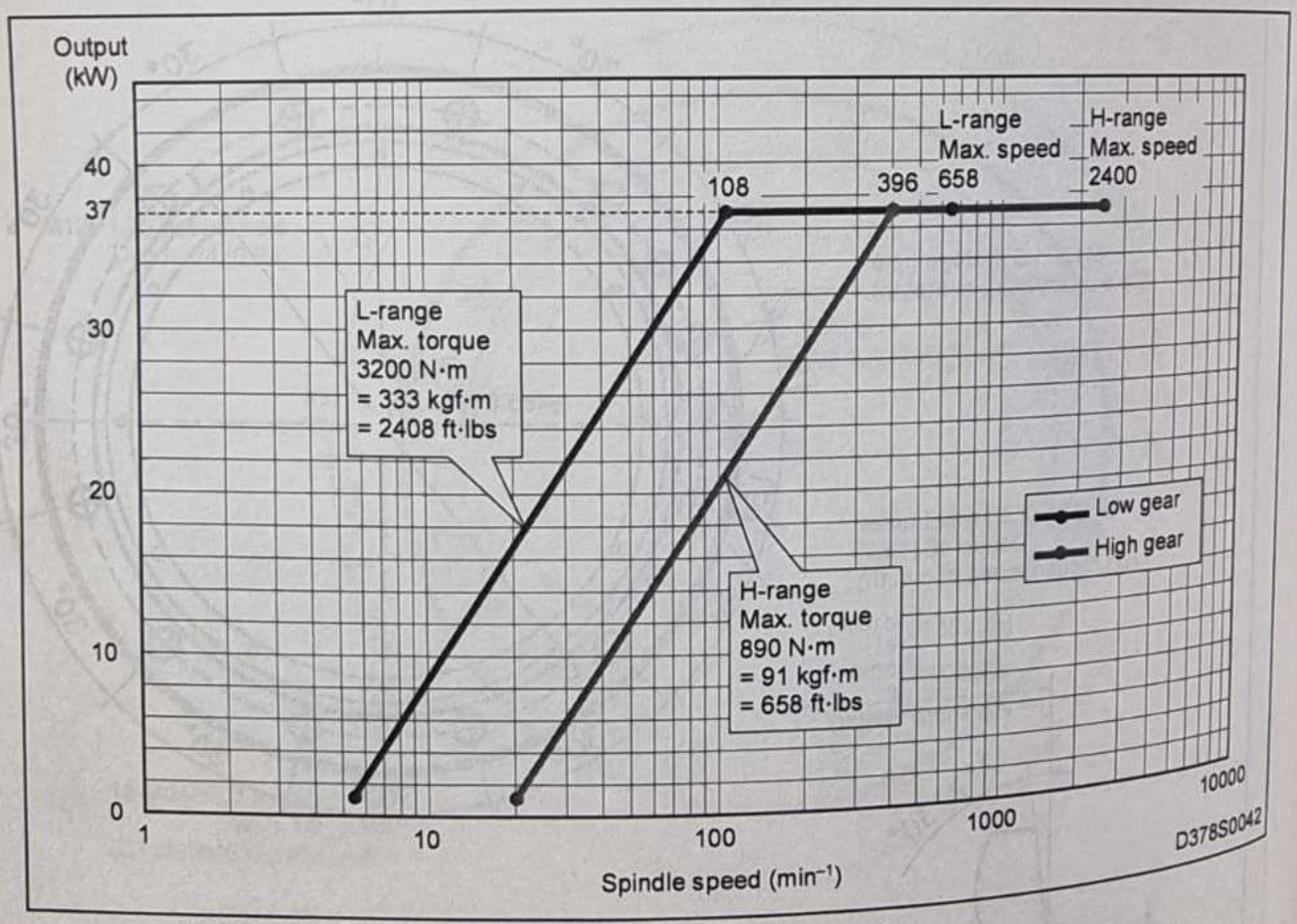


Fig. 1-6 Characteristic of the turning spindle motor (ϕ132 through hole)

2. Characteristic of the turning spindle motor (ϕ185 through hole)