

FIG.2-9A TW-20 LEFT SPINDLE DIMENSIONS

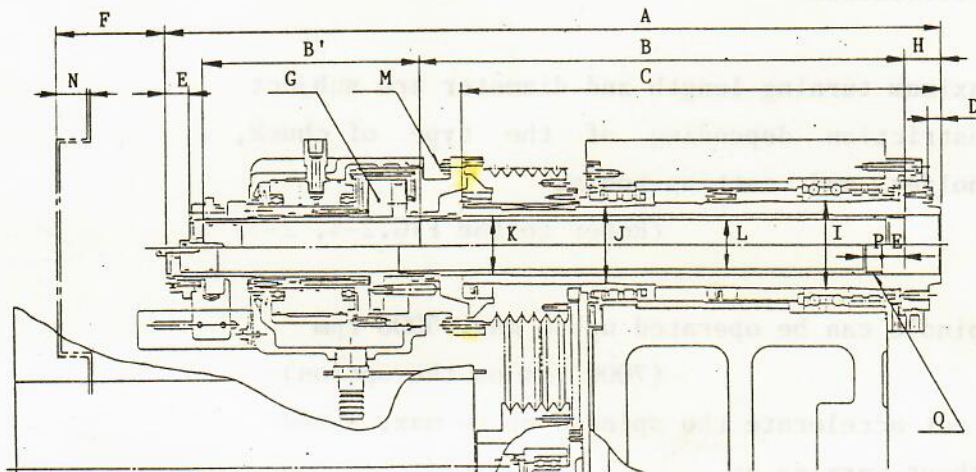
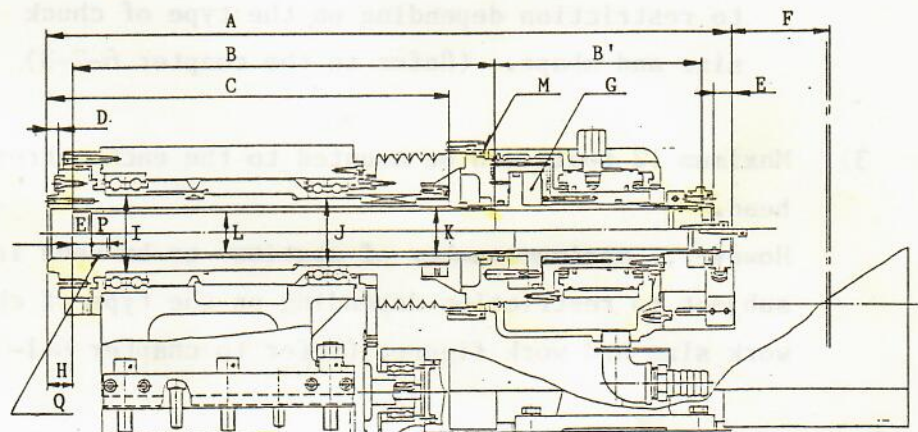


FIG.2-9B TW-20 RIGHT SPINDLE DIMENSIONS



NAME OF DIMENSIONS		LEFT UNIT	RIGHT UNIT
A = Overall length	(mm)	823.7	731.2
B = Draw tube length	(mm)	517.0	451.0
B' = Draw tube length	(mm)	229.0	219.0
C = Spindle length	(mm)	509.7	428.7
D = Length of pilot	(mm)	12.7	12.7
E = Cylinder stroke	(mm)	25.0	20.0
F = Draw tube end to machine cover	(mm)	66.3	Z-stroke max.680 409.5 to 1089.5
G = Piston area	(cm ²)	123.7	94.8
H = Recess to draw tube	(mm)	37.7	27.7
I = Front bearing	(mm)	90.0	80.0
J = Rear bearing	(mm)	80.0	70.0
K = Spindle bore	(mm)	62.0	52.0
L = Draw tube bore	(mm)	52.0	43.0
M = Chuck cylinder mounting tap size	(mm)	6-M8x18.0 P.C.D.165.0	8-M8x18 P.C.D. P.C.D.168.0
N = Step of cover	(mm)	120.0	Non
P = Tread and Groove length	(mm)	20.0	20.0
Q = Treading		M58 P1.5	M48 P1.5