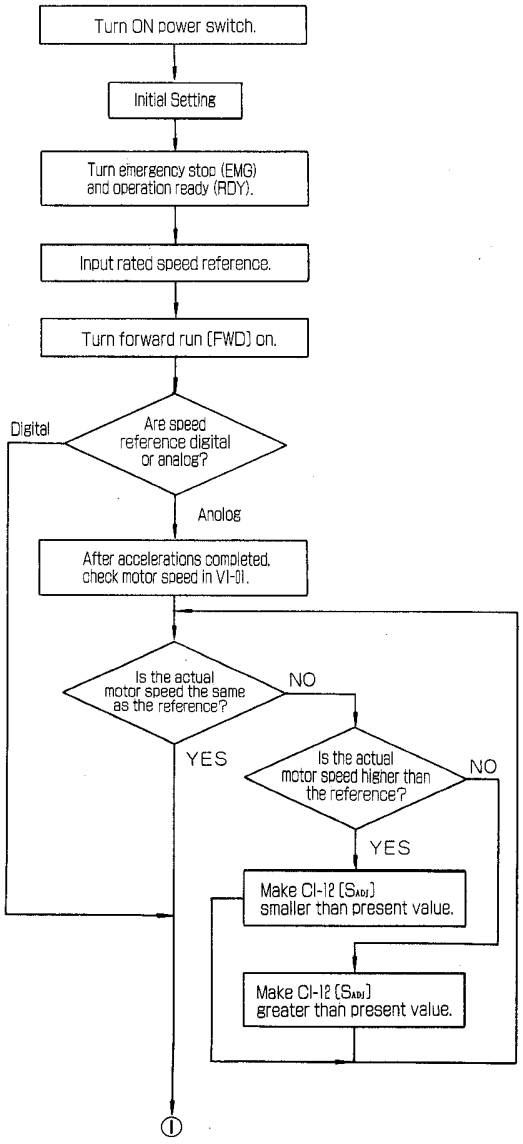
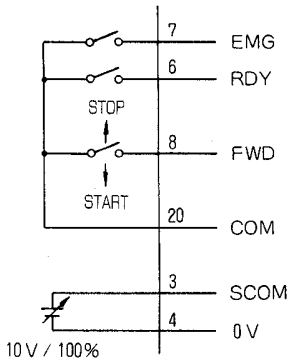
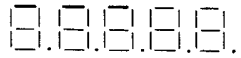
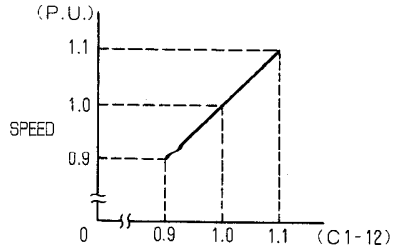
14.4 ADJUSTMENT PROCEDURE AND CONTROL CONSTANT SETUP

After verifying that the motor operates normally, adjust the speed control mode and position control mode for orientation control according to the adjustment procedures. The following adjustment must also be performed after replacing the motor, inverter, magnetic sensor or encoder.

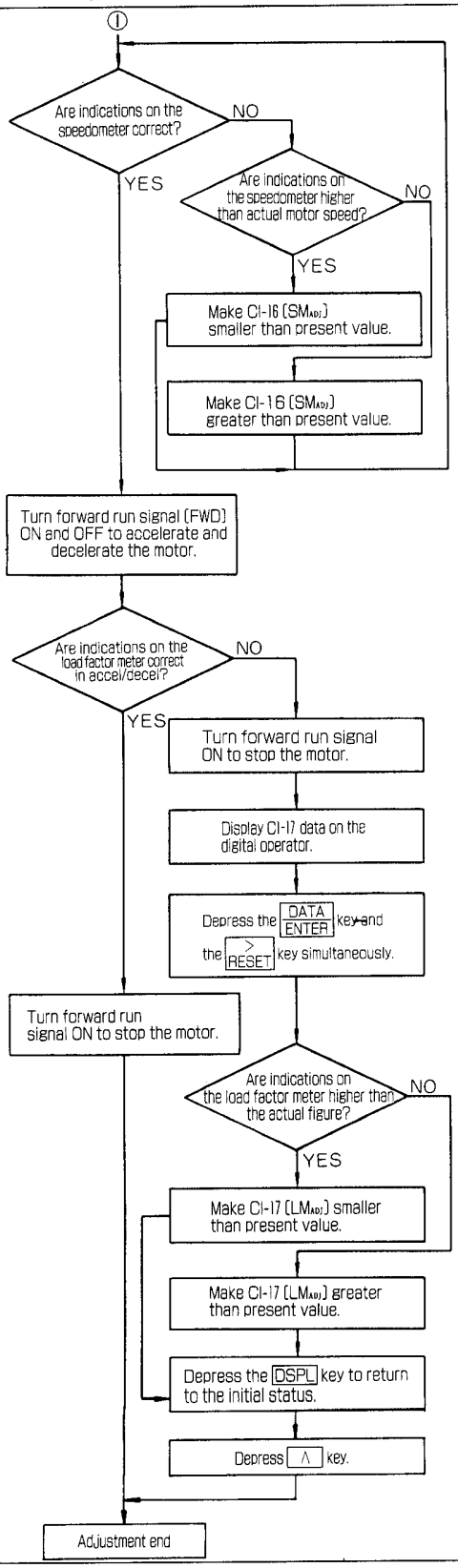
14.4.1 Adjustment in Speed Control Mode

Refer to the following flow chart for adjustment.

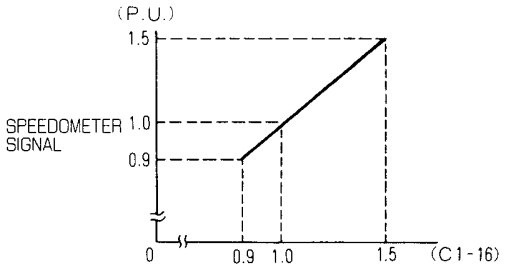
Adjusting Item and Procedure	Content
	Operation control (with 0-V common)  Input signal check • Input signal status (V1-09)  RDY, EMG, and FWD light. Speed reference adjustment range (C1-12)  C1-12 = Commanded Motor Speed／Actual Speed 〈Example〉 When 6000r／min is commanded and actual speed is 6060 r／min, C1-12 = 6000／6060 = 0.99

(Cont'd)

Adjusting Item and Procedure	Content



Speedometer Adjustment Range (C1-16)



C1-16 = actual motor speed/indication on speedometer

〈Example〉 When motor speed is 6000 r/min and indication on the speedometer is 5940 r/min.

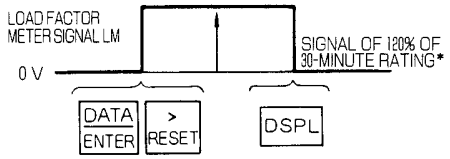
C1-16 =6000/5940 = 1.01

Maximum Indication on the Load Factor Meter (12% of 30-minute rating)

Maximum Indication on the Load Factor Meter

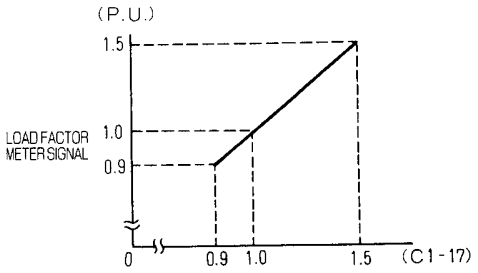
Capacity	LM	Capacity	LM
3.7/2.2	202 %	15/11	164 %
5.5/3.7	178 %	18.5/15	148 %
7.5/5.5	164 %	22/18.5	143 %
11/7.5	176 %	30/22	164 %

Signal Output for Load Factor Meter Adjustment



* Signal of 100% of confinuous rating is output when bit 7 of C1-38 is changed to "1".

Load Factor Meter Adjustment Range (C1-17)



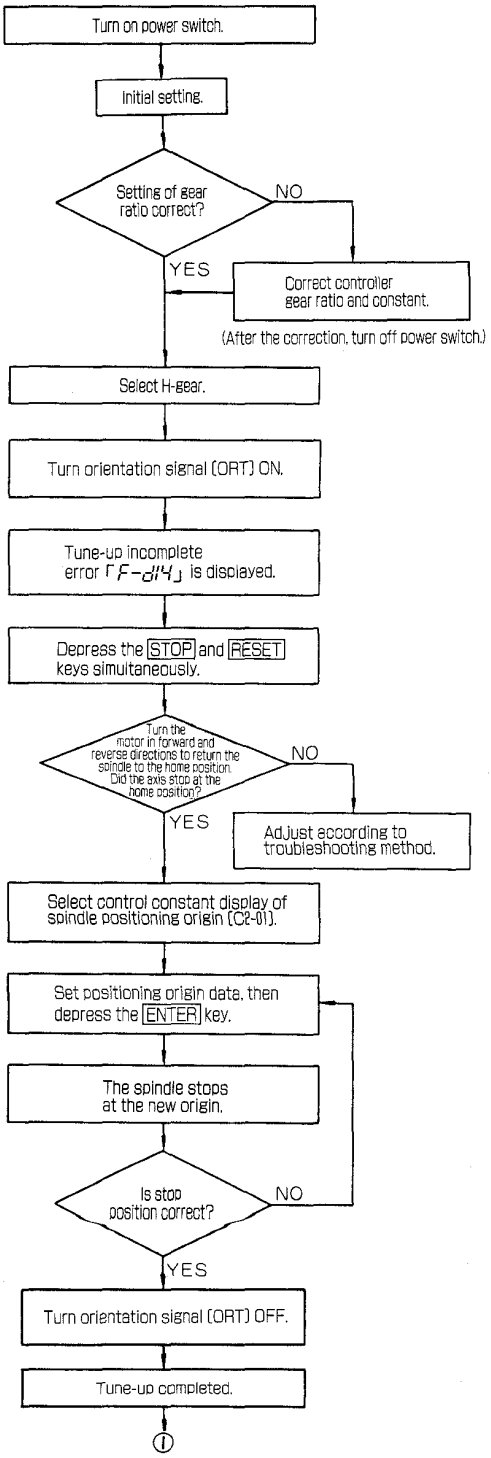
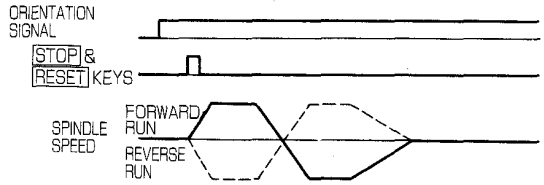
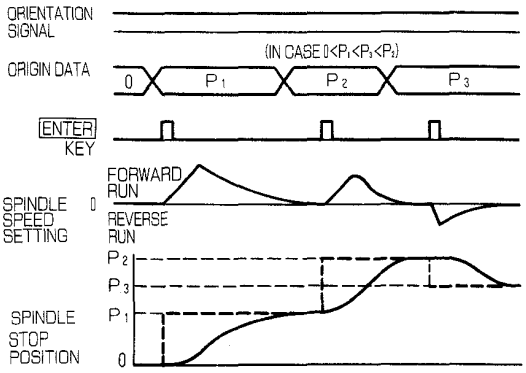
C1-17 = (120% of 30-minute rating) /indication on the load factor meter

〈Example〉 When capacity is 7.5 kW/5.5 kW and indication on the load factor meter is 150%.

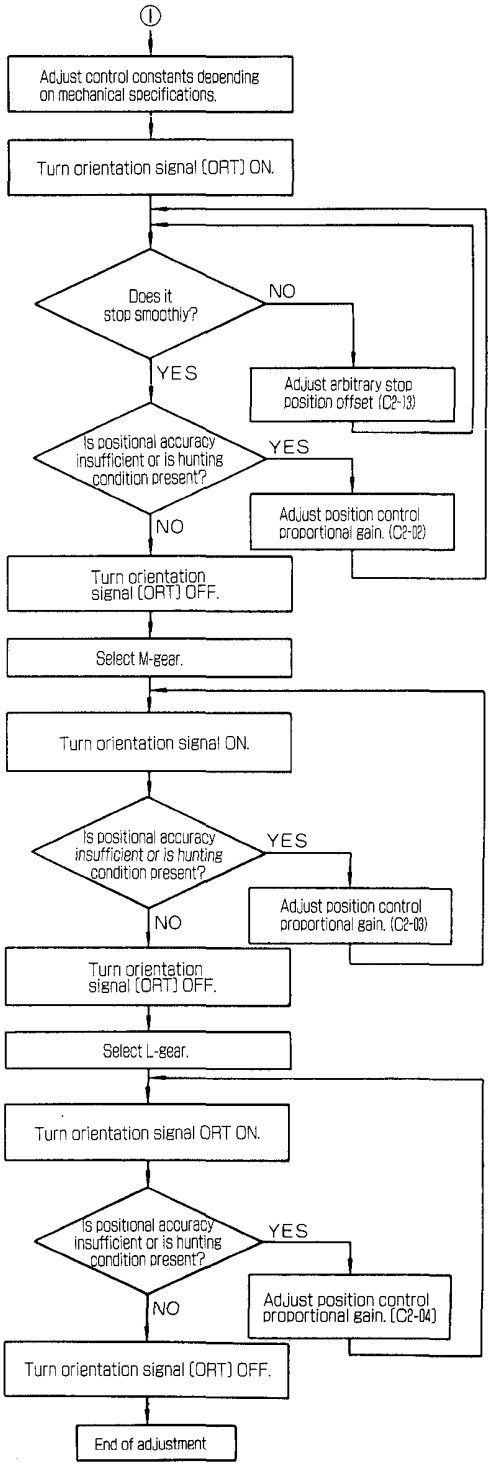
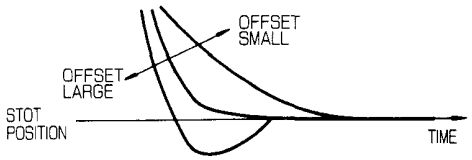
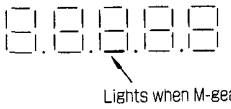
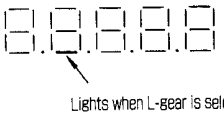
C1-17 = 164/150 = 1.09

14.4.2 Adjustment in Encoder Orientation Control Mode

Adjust the system according to the flowchart below.

Adjusting Item and Procedure	Content
	Initial setting: Changing constants with the digital operator • Set orientation selection (bit 0) of selection signal 4 (C1-39) to "1". • Set tune-up operation selection (bit 4) of orientation select signal 1 (C2-22) to "1". Gear ratio constant • C1−27·····H-gear ratio • C1−28·····M-gear ratio } 0.050 to 2.500 • C1−29·····L-gear ratio • When gear ratio was selected, the changed constant is effective with turning off and on the power. Identifying input signal • Interface input status (V1-09)  Tune-up operation  Note: Orientation completion signal (ORE) is not output at tune-up. Spindle positioning origin  • In case of abnormality during tune-up, carry out tune-up operations once again, after resetting. Set tune-up operation selection (C2-22, bit 4) to "1"

(Cont'd)

Adjusting Item and Procedure	Content
	Adjusting control constant Adjustment of arbitrary stop position offset(C2-13) • Adjust so that the final positioning is not too long or overshoots.  • Identify the characteristics from H-, M-, and L-gear, because the characteristics vary with load inertia. Selection of H-gear Adjusting proportional gain (C2-02) • If ORE is not output in the region near the stop position, increase the gain. • If the spindle is unstable even if ORE is output, reduce the gain. Identifying selection of M-gear • Interface input state (V1-09)  Adjusting proportional gain (C2-03) • If ORE is not output in the region near the stop position, increase the gain. • If the spindle is unstable even if ORE is output, reduce the gain. Note : If L-gear selection is not covered by equipment specifications, omit adjustment. Identifying selection of L-gear • Interface input state (V1-09)  Adjusting proportional gain (C2-04) • If ORE is not output in the region near the stop position, increase the gain. • If the spindle is unstable even if ORE is output, reduce the gain.