

Development of an Atomic Force Microscope Suitable for Observation of Biological Samples

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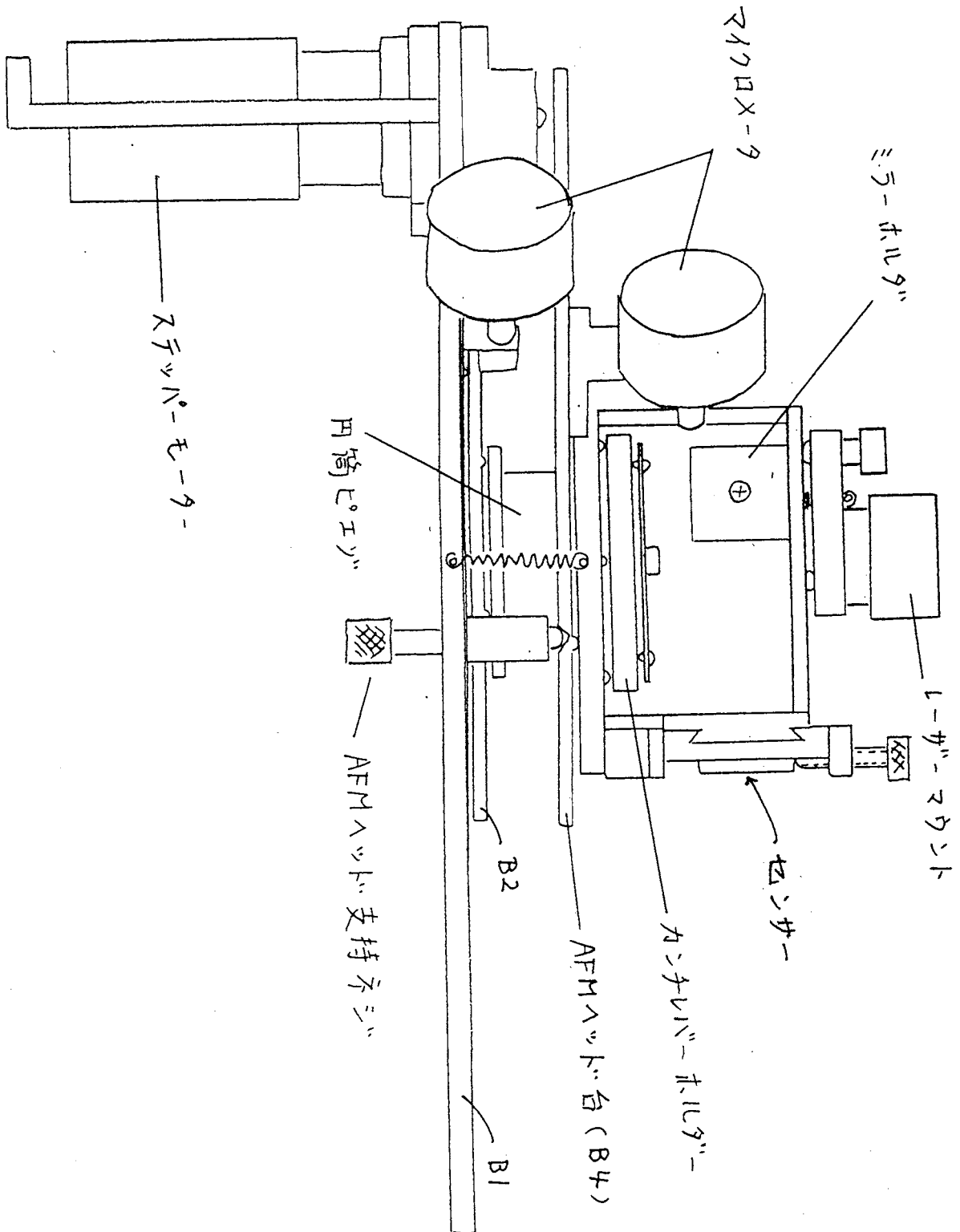
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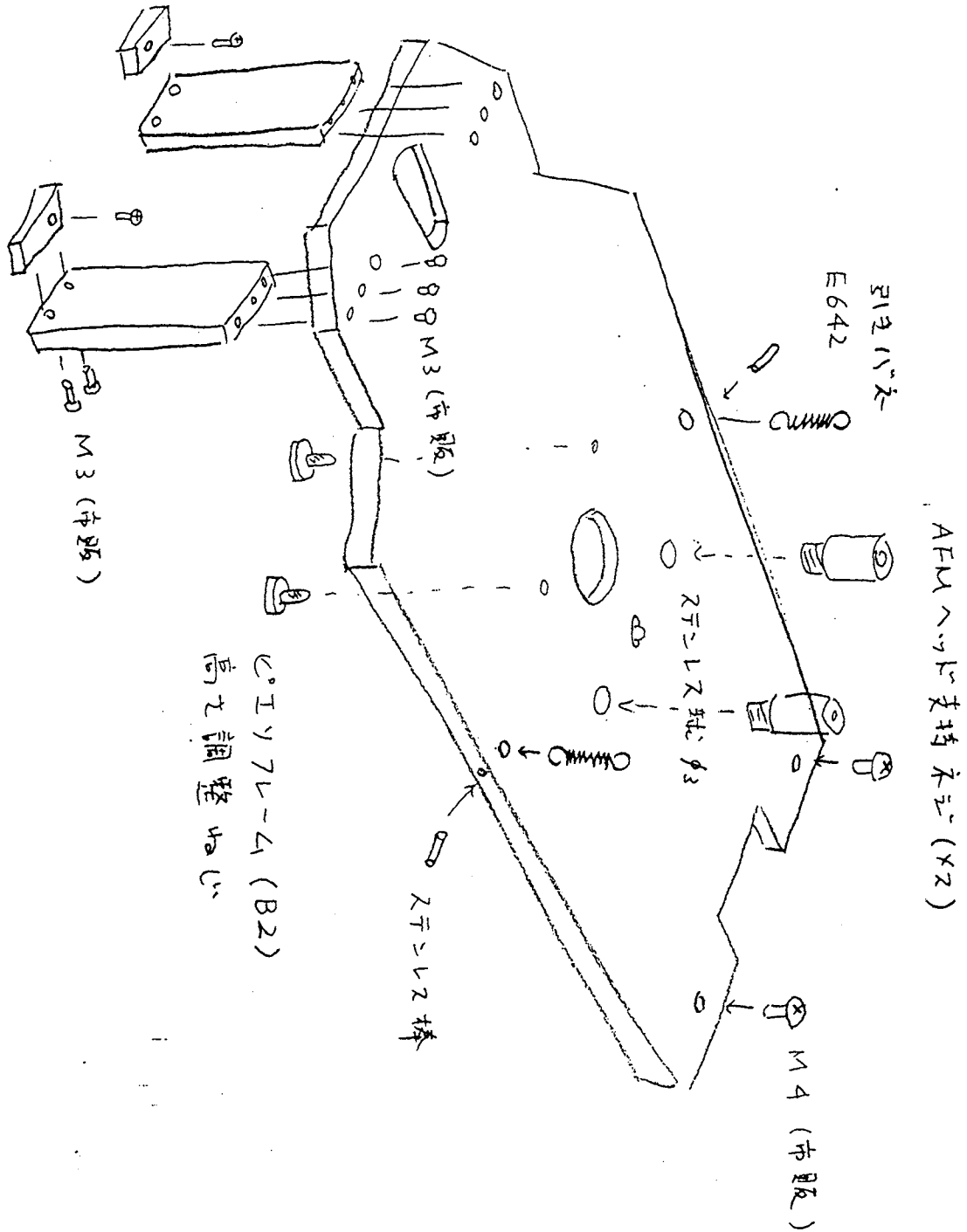
付録A

(機械部品の設計図)

A.1 AFM組上がり図

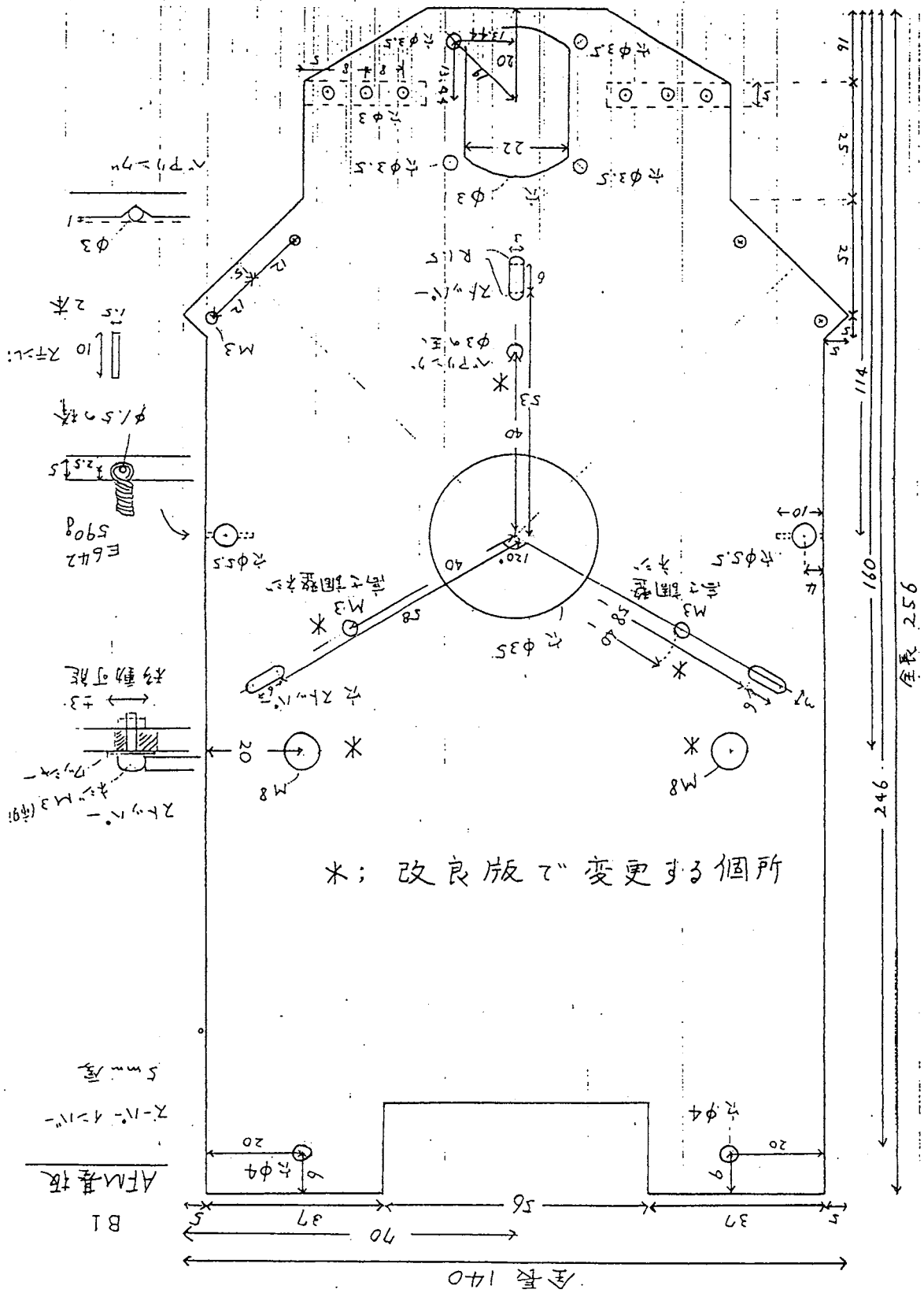


A.2 AFM基盤B1組立図

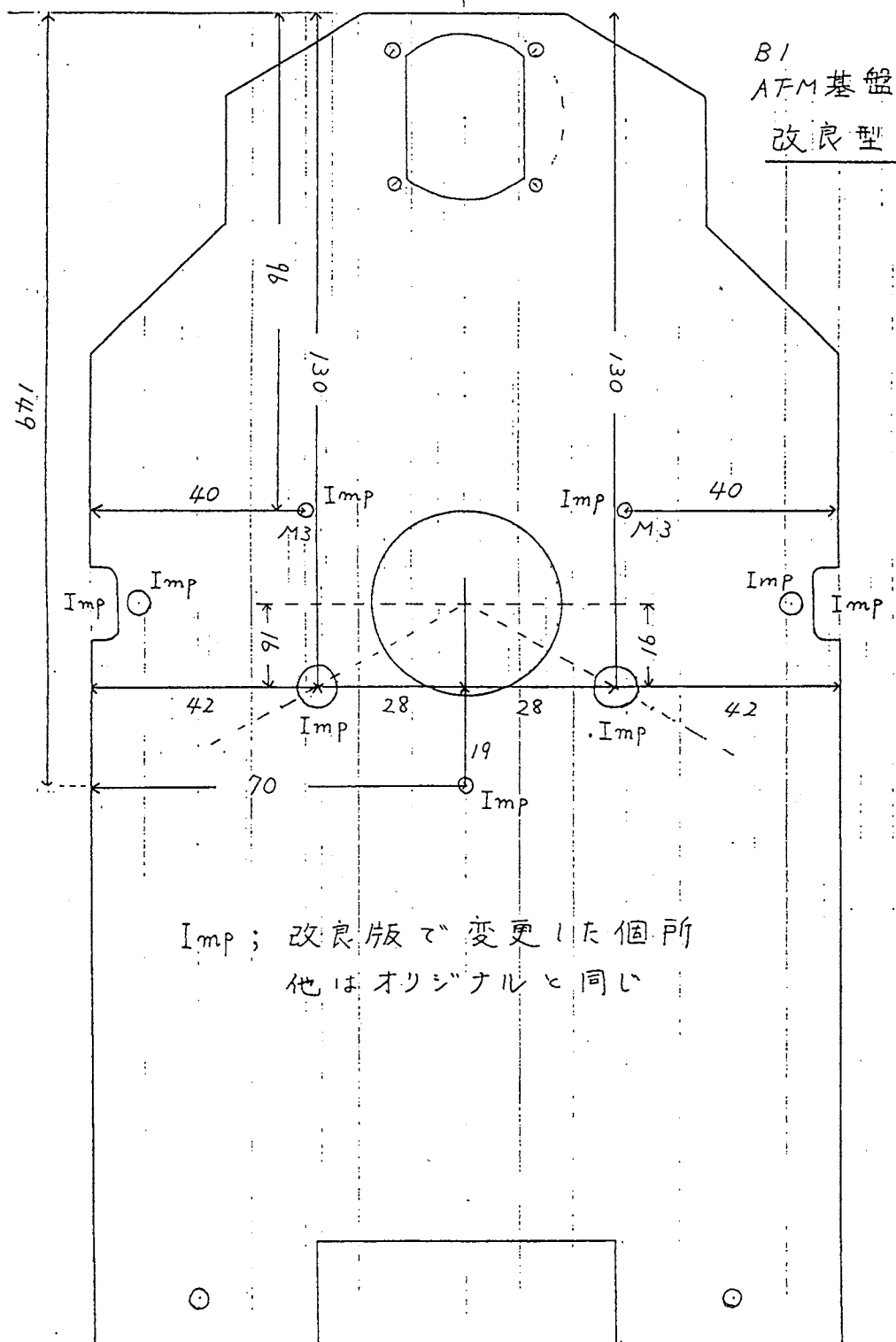


AFM基板組立図

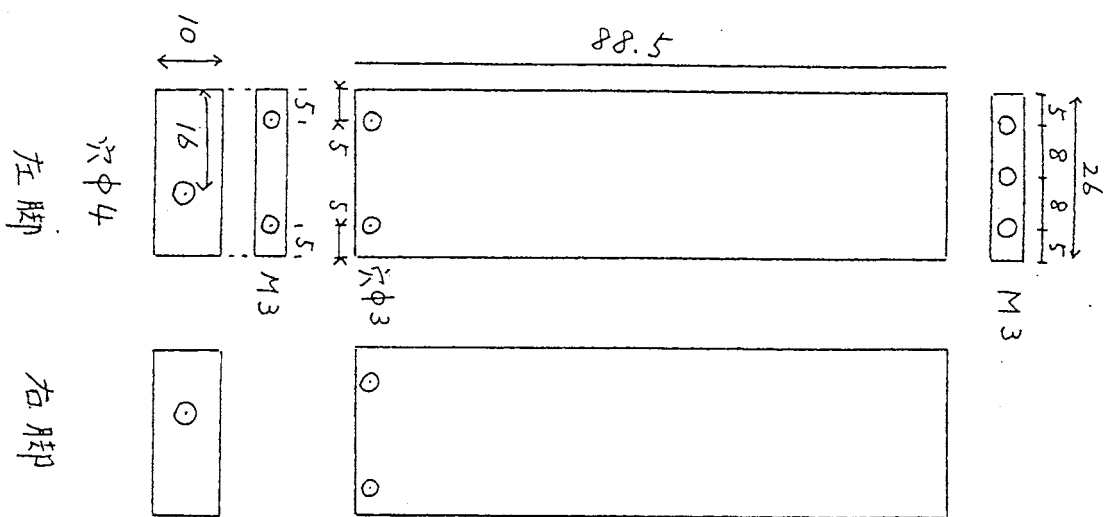
A.3 基盤B1の設計図



A.4 改良型基盤B1の設計図

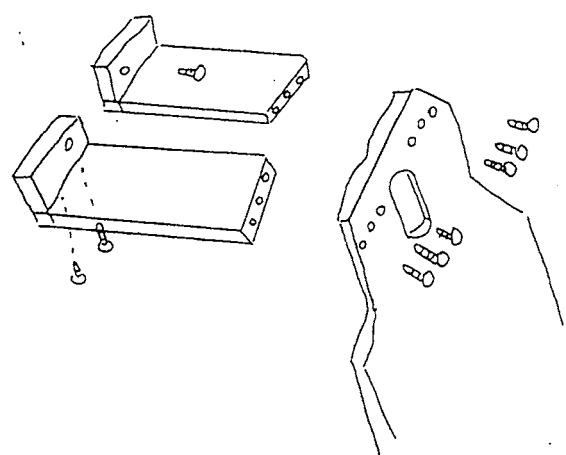


A.5 基板B1の支脚



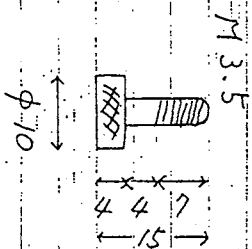
B1用支脚

スーパーインバー材
5mm厚



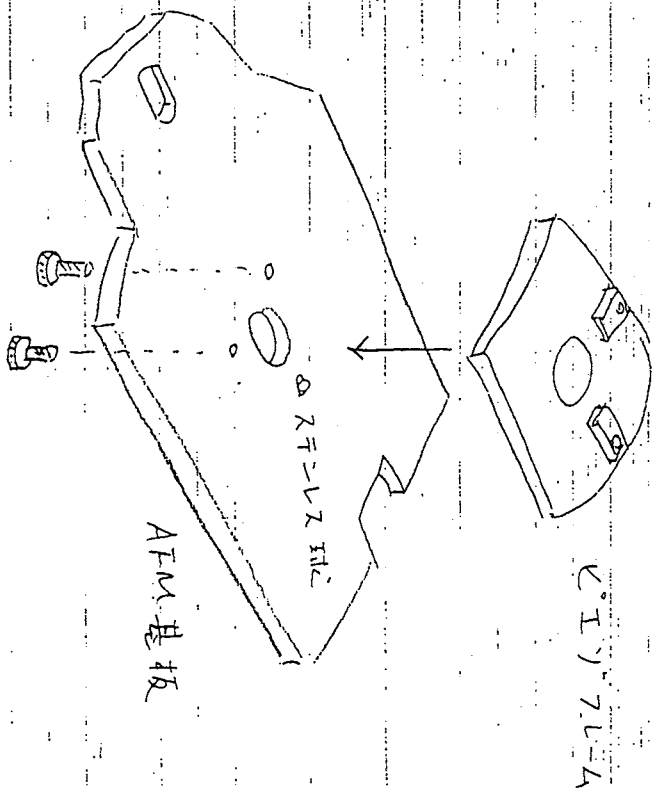
A.6 基盤B2の支持ネジ

2本

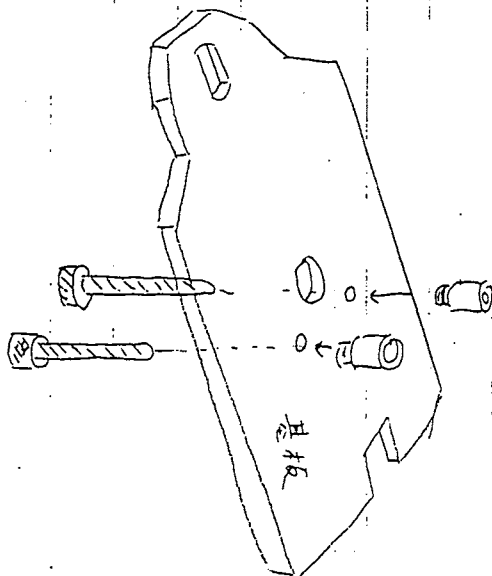
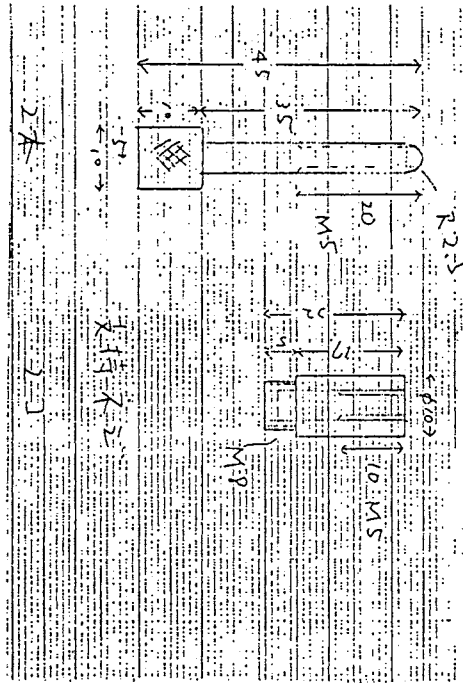


バネ 400g
吊販

AFM (C.I.) グレーム 高さ調整ネジ
(B2)
材料: スーパーインバー



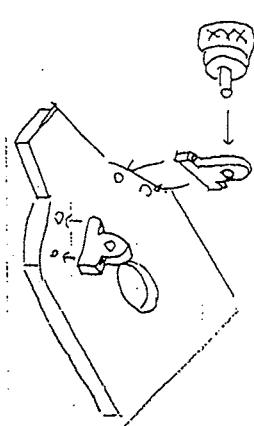
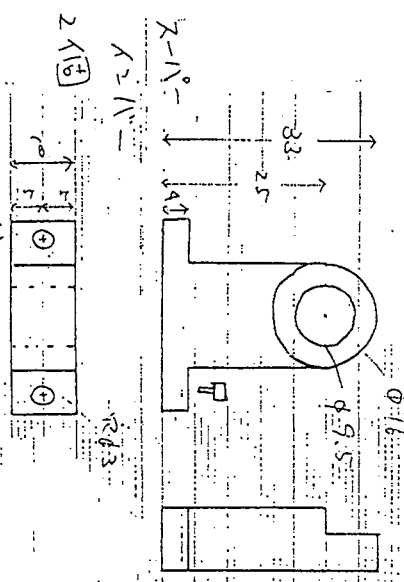
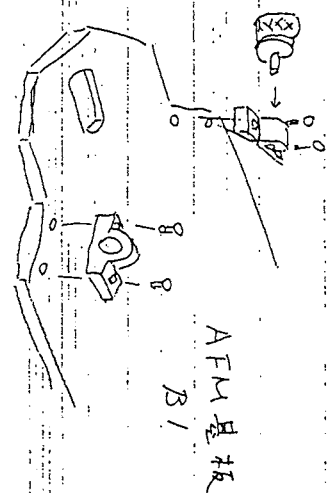
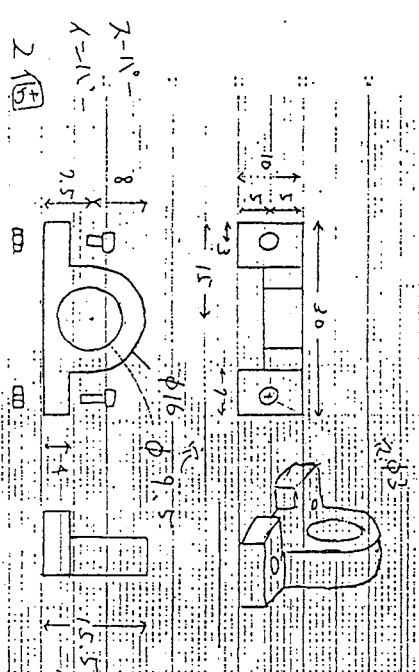
A.7 基盤B 4支持ネジ



AFN 1/4 台支持ネジ
 (B4)
 材料 ステンレス

A.8 マイクロメータ取り付け金具

2170X-9 取付金具



B4

AFM基板

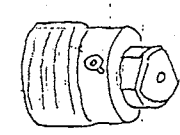
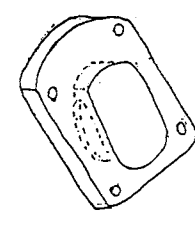
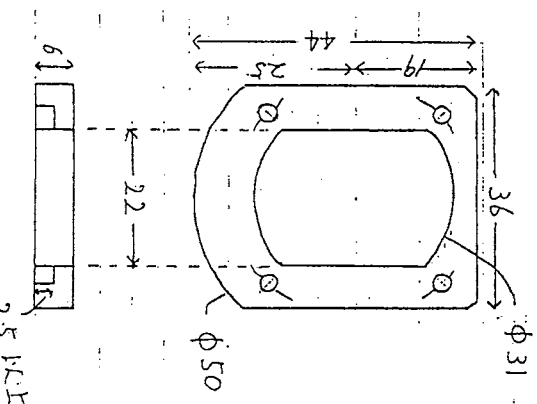
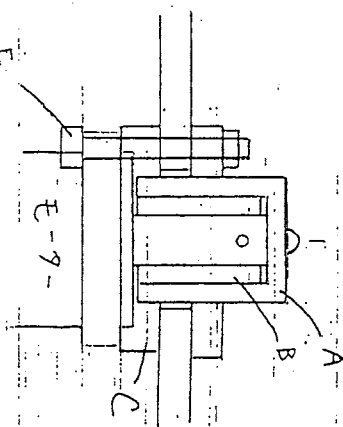
A.9 モーター取り付けネジ

モーター制御ネジ

A, B, C, D
X-11°-1=11°

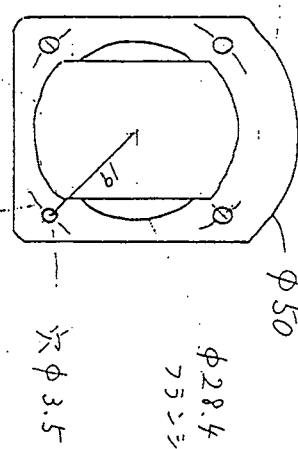
モーター軸

E
平版
M3.5



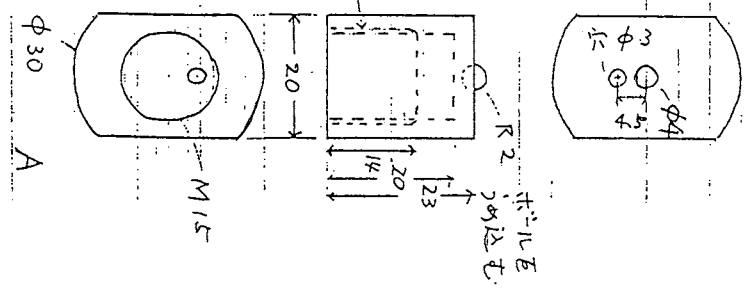
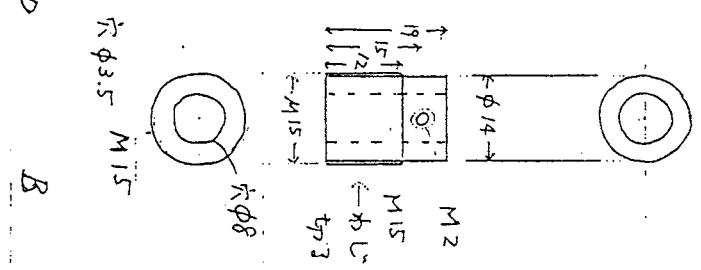
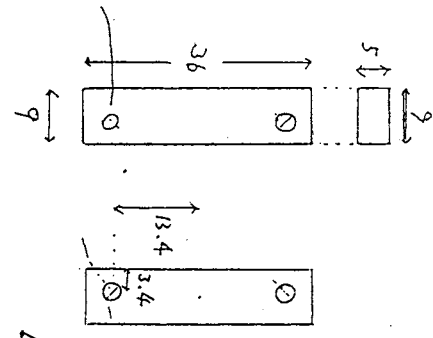
ネジ M2 (真鍮)

φ28.4
ラジエーター

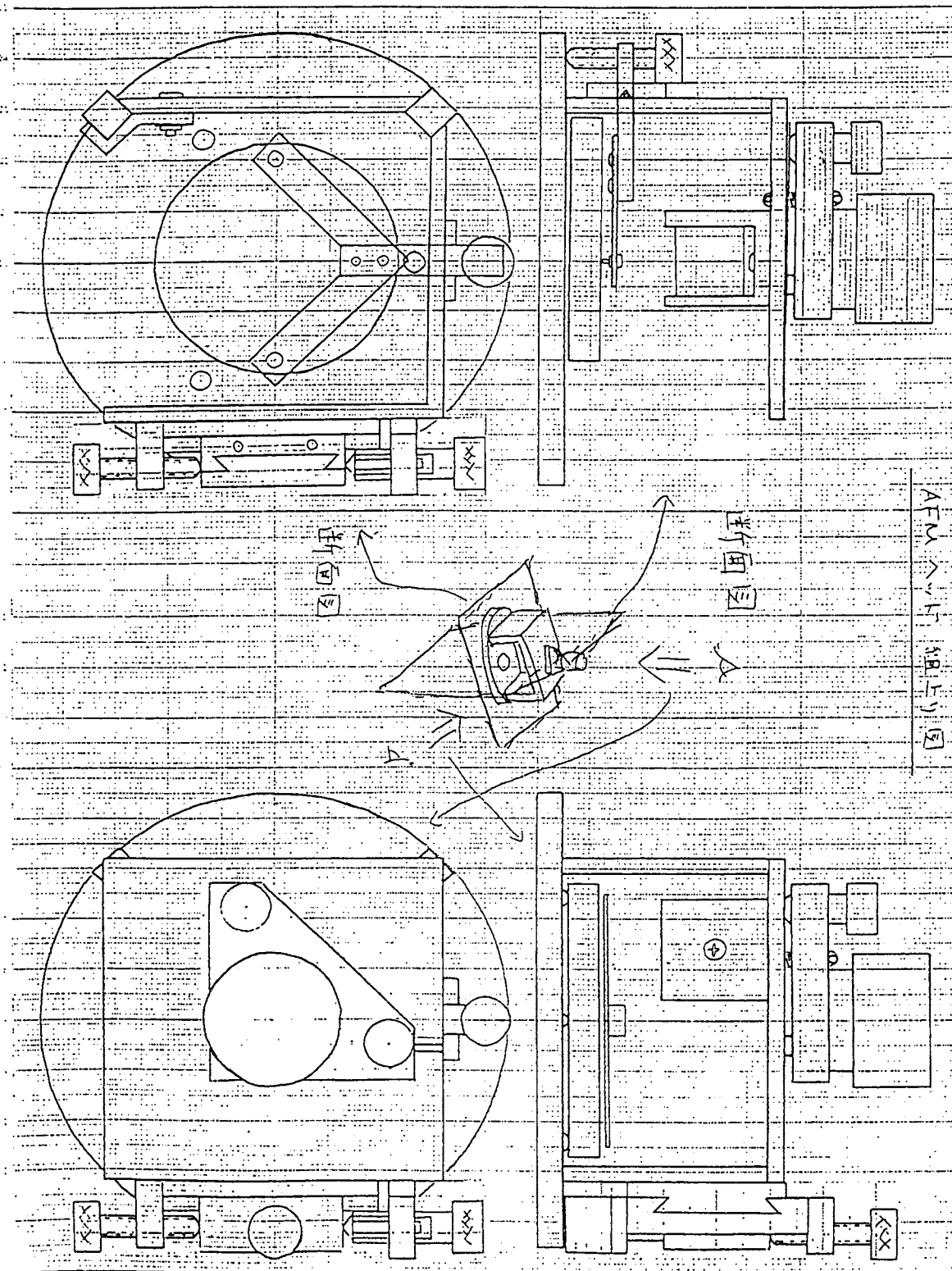


穴φ31
φ38±0.2
C X-11°-1=11°

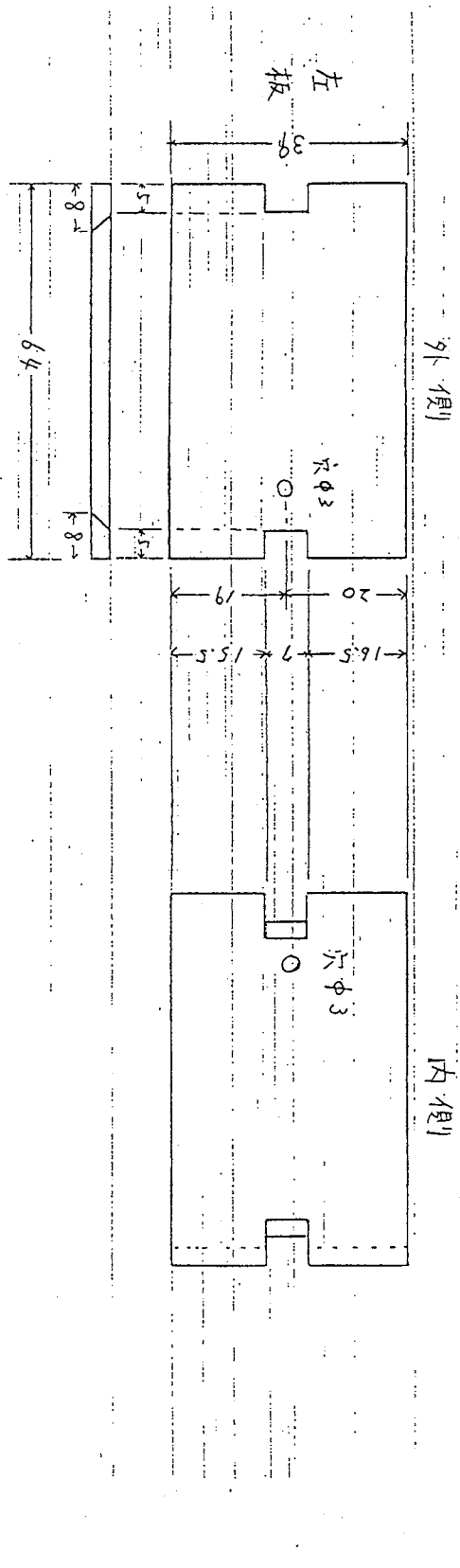
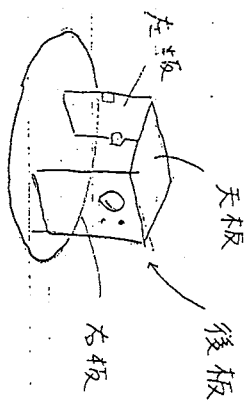
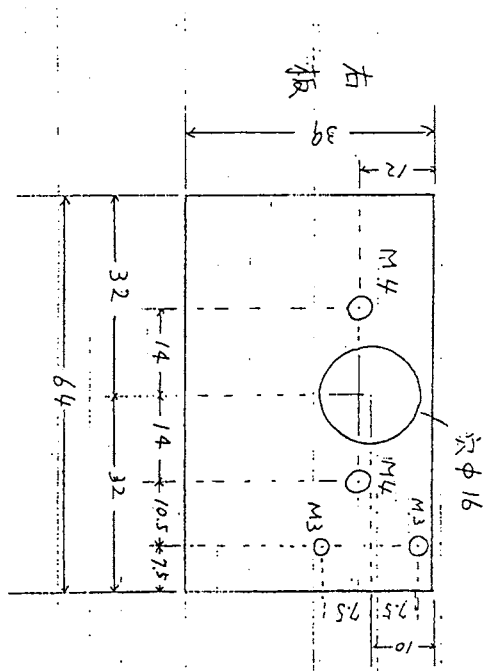
穴φ3.5
おリツシ
大きめ



A.10 AFMヘッド組上がり図

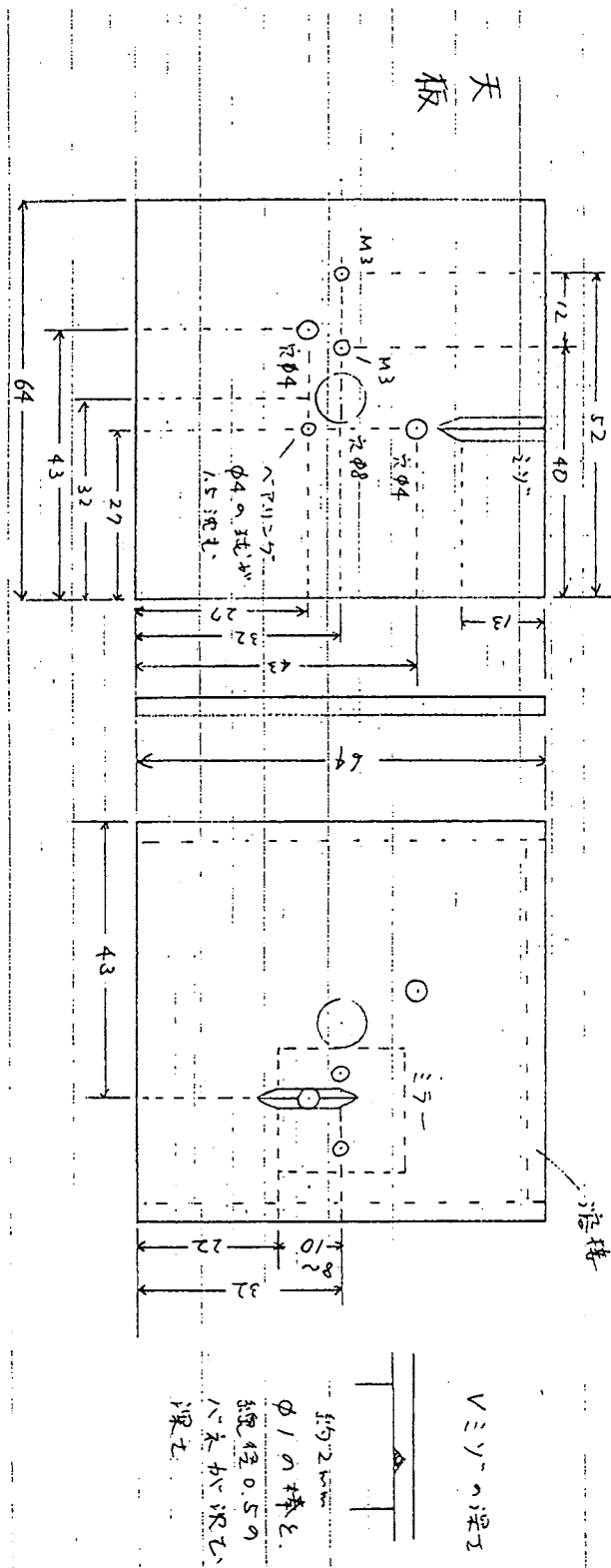
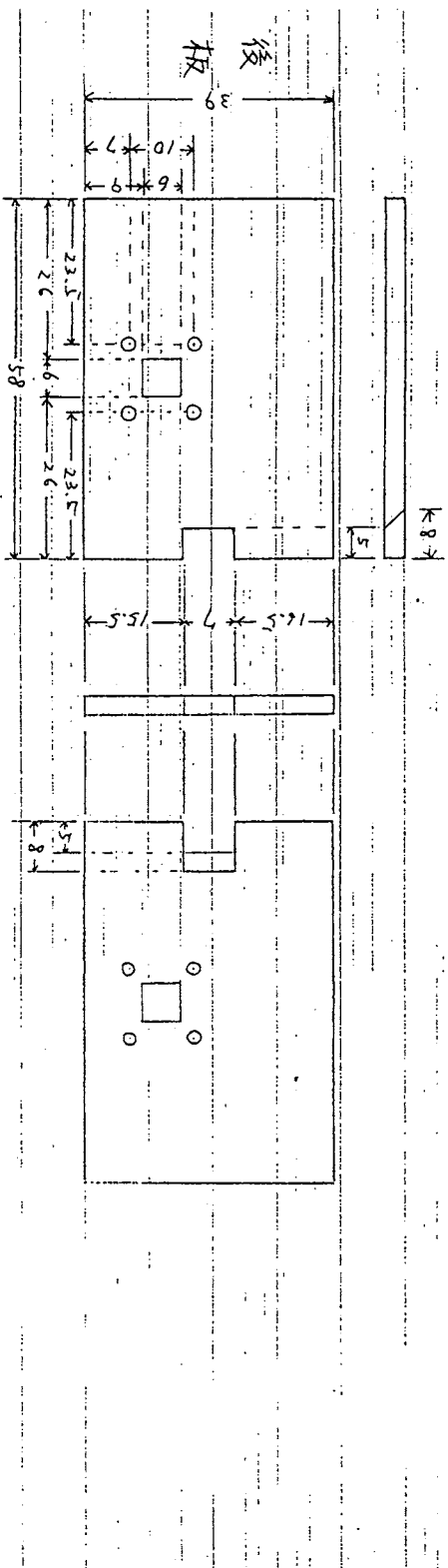


A.11 AFMヘッド側板



A.12 AFMヘッド後板と天板

AFMヘッド後板と天板

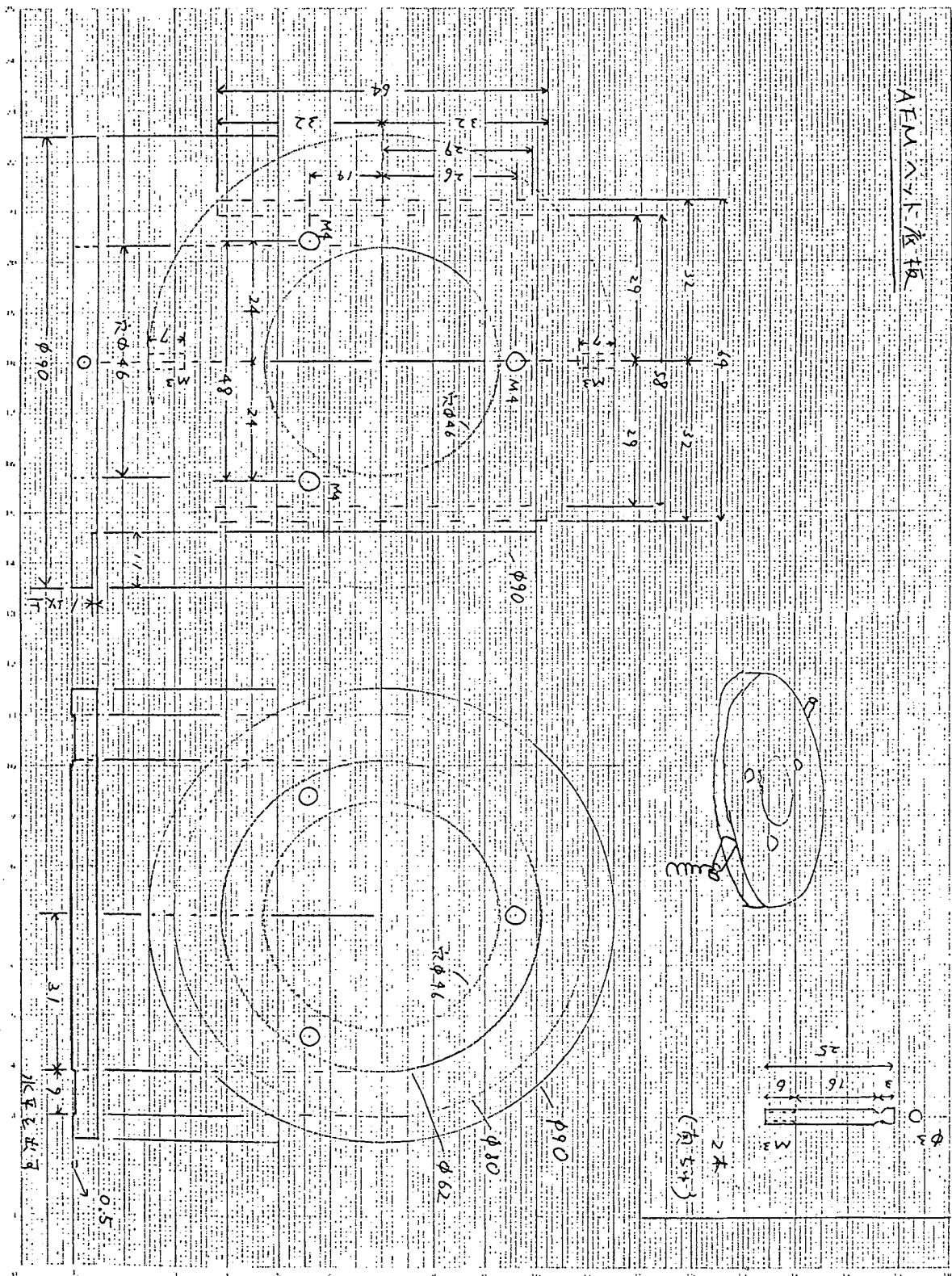


V字の深さ



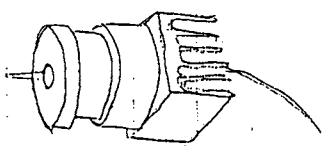
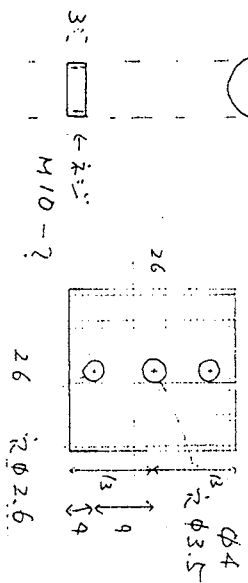
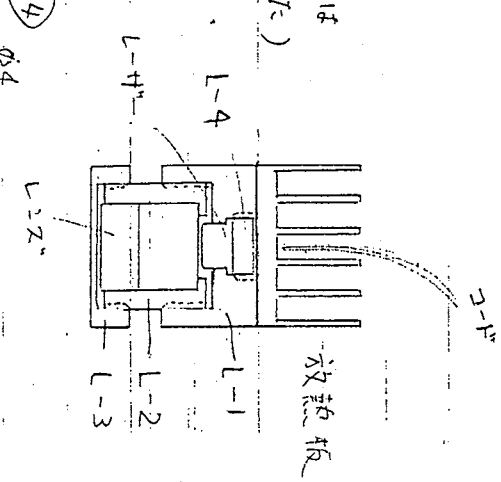
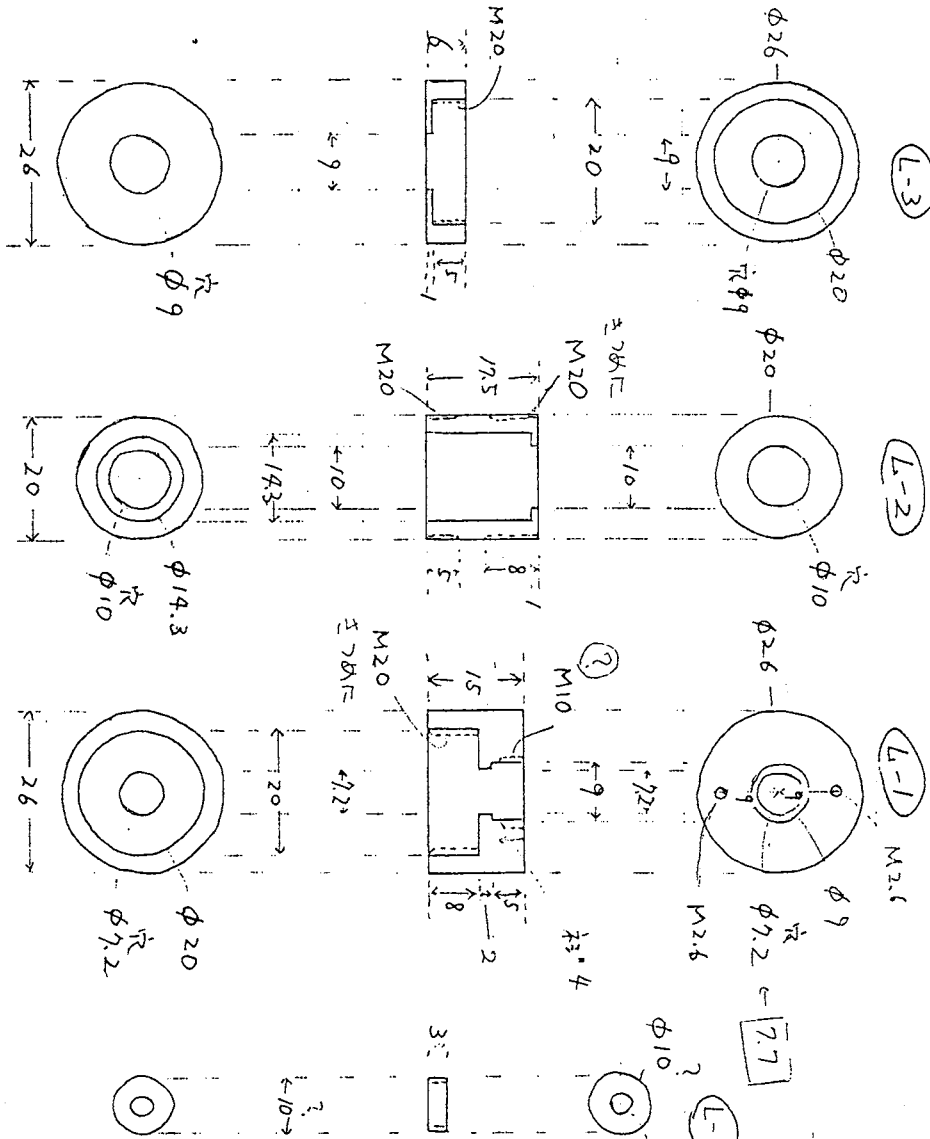
約2mm
φ1.0±0.05
線径0.5mm
ハネ加工なし
深さ

A.13 AFMヘッド基板



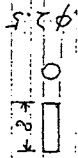
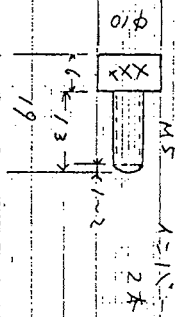
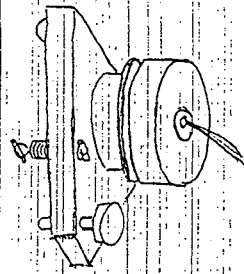
A.14 レーザーマウント

レーザーマウント (放熱板は実際には使わなかった)

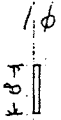


A.15 レーザー光軸調整器

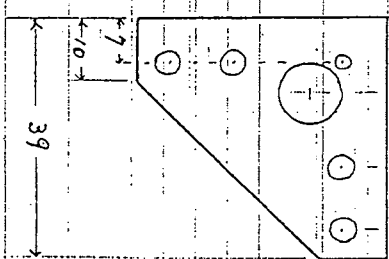
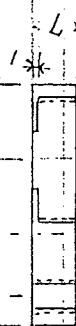
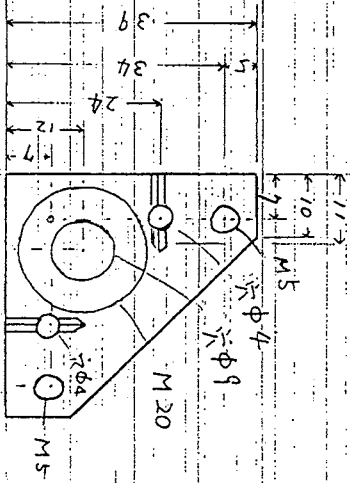
レーザー光軸調整器



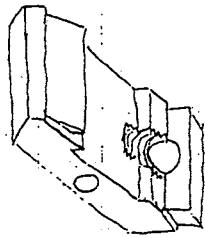
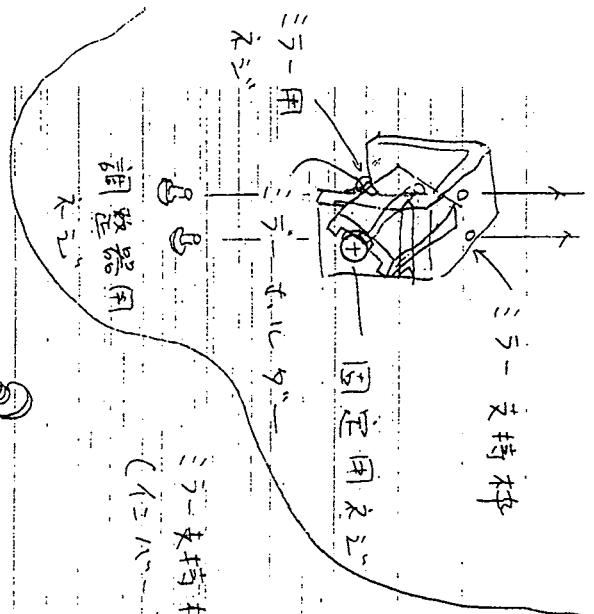
3本 (2本=LR)



1本



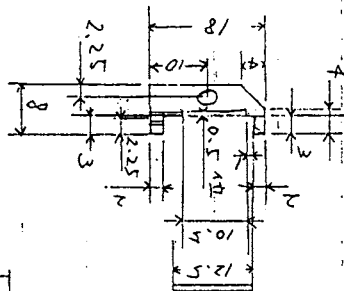
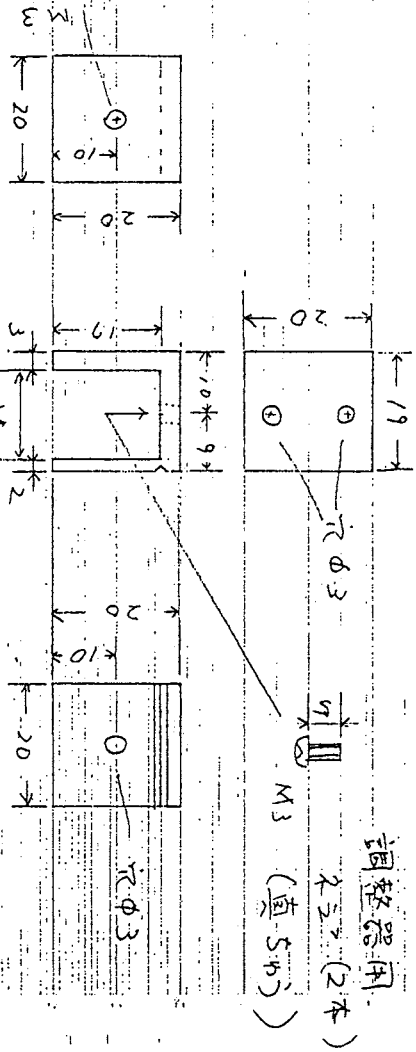
A.16 ミラー部



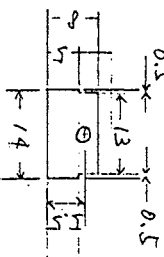
ホイル9²
(1=1²)

ミラー支持枠
(仁仁ハ²)

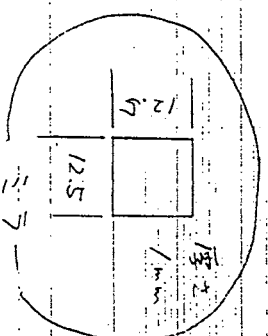
AEM ミラー調整器



固定用ネジ
(ス²ビス)



M2 深² 5⁴ 立
ミラー用ネジ
(真5⁴)



A.17 センサー位置調整部組上がり図

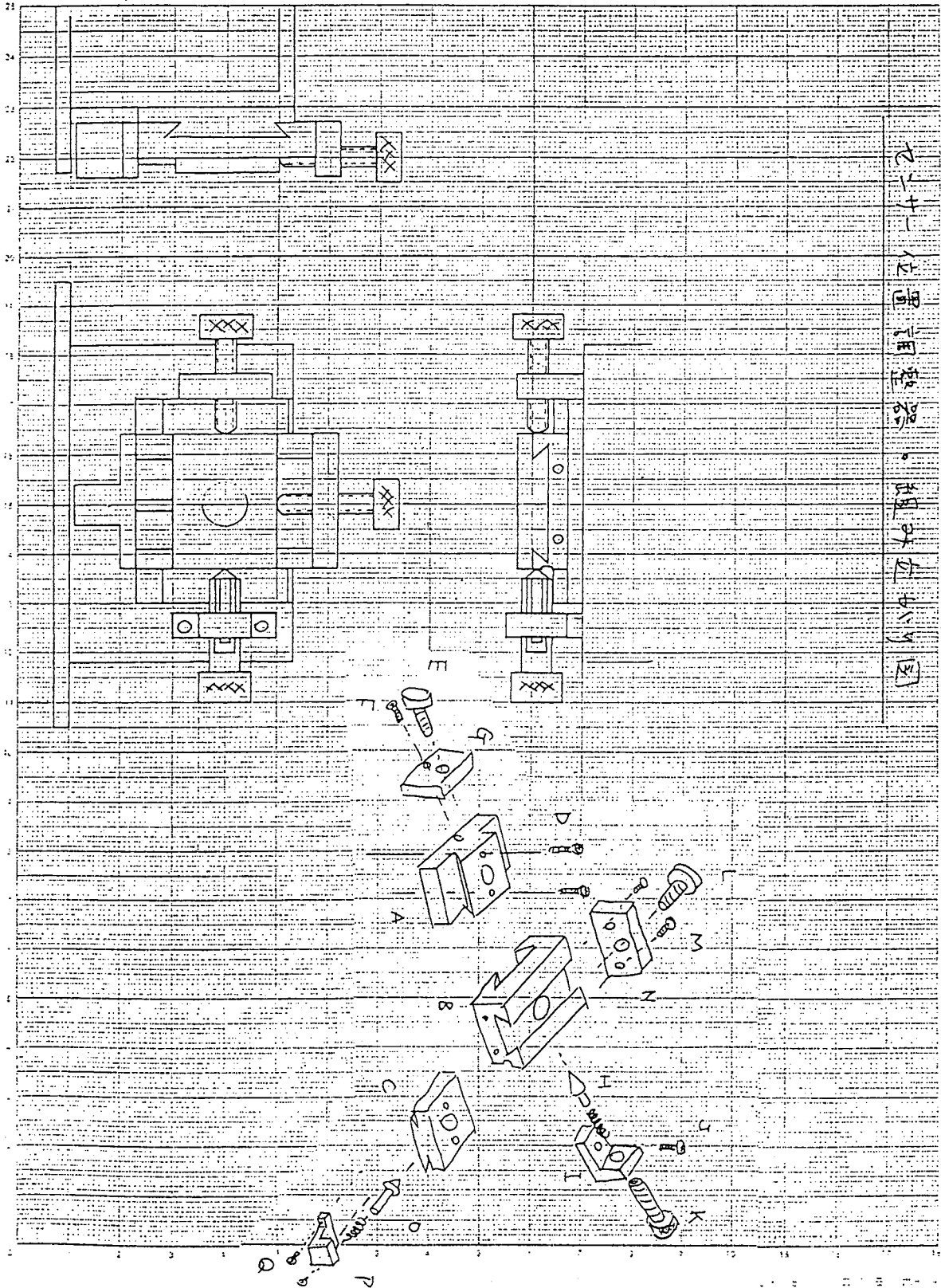
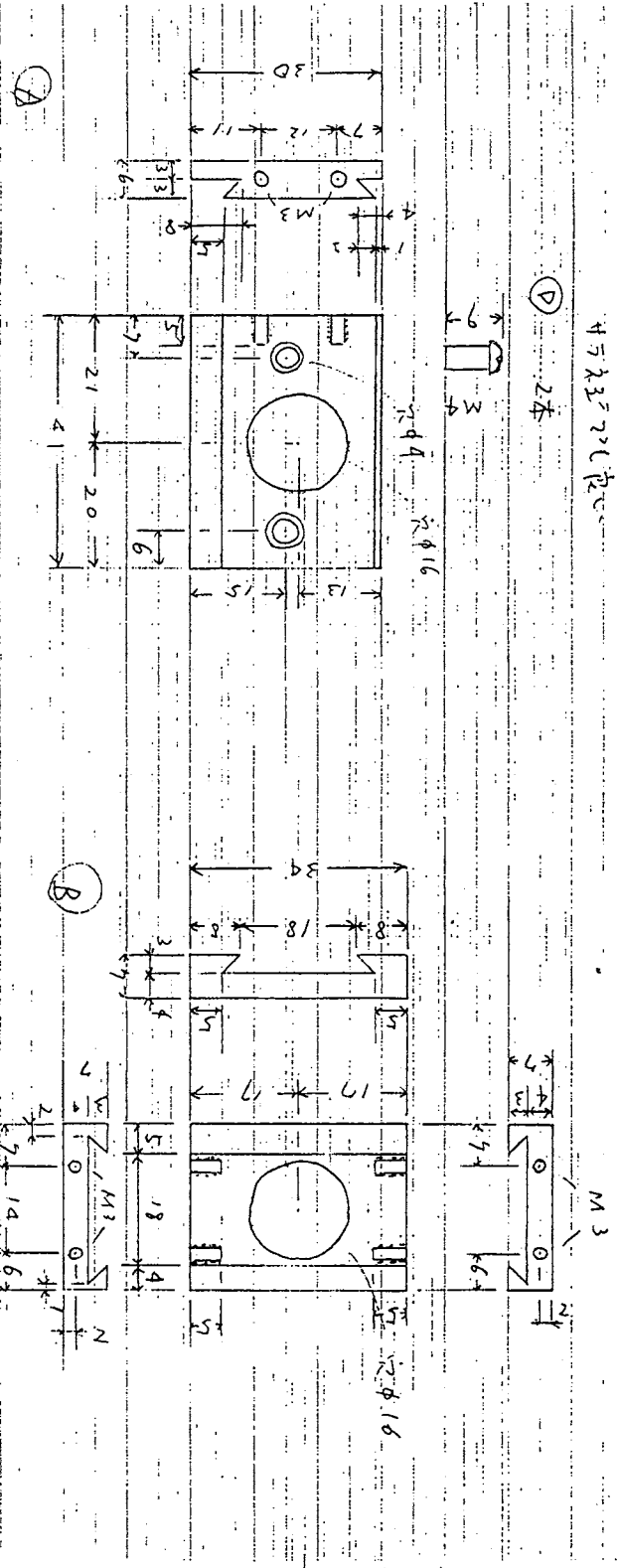


図 11-11 位置調整部組上がり図

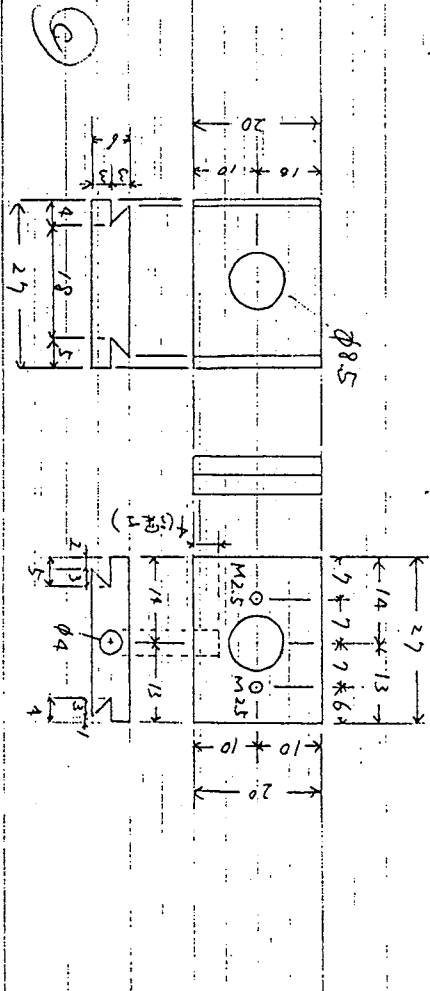
A.18 センサー位置調整部品1

4ヶ所3.5φ穴中心

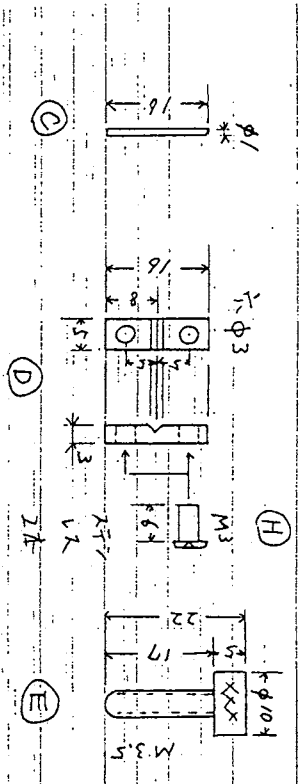
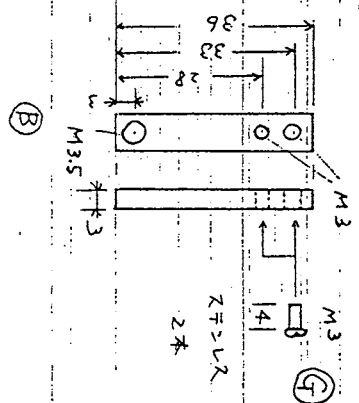
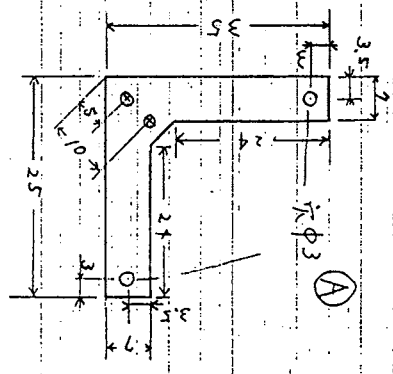
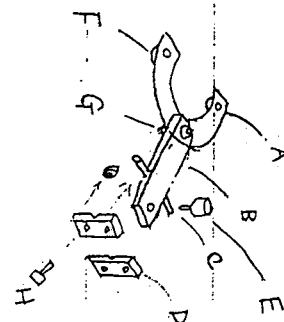
① 2本



センサー位置調整器

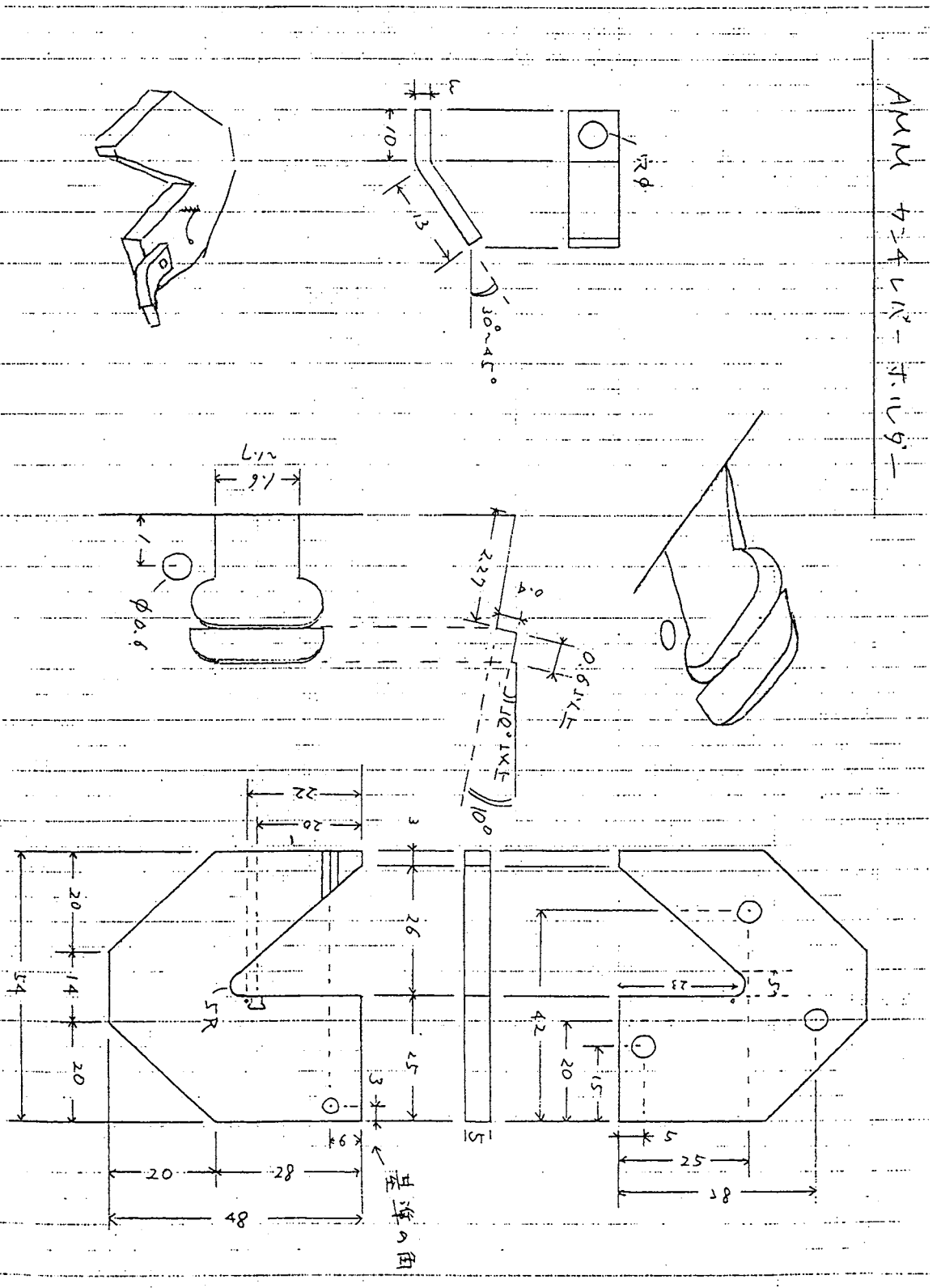


A.20 カンチレバーホルダー固定用アーム

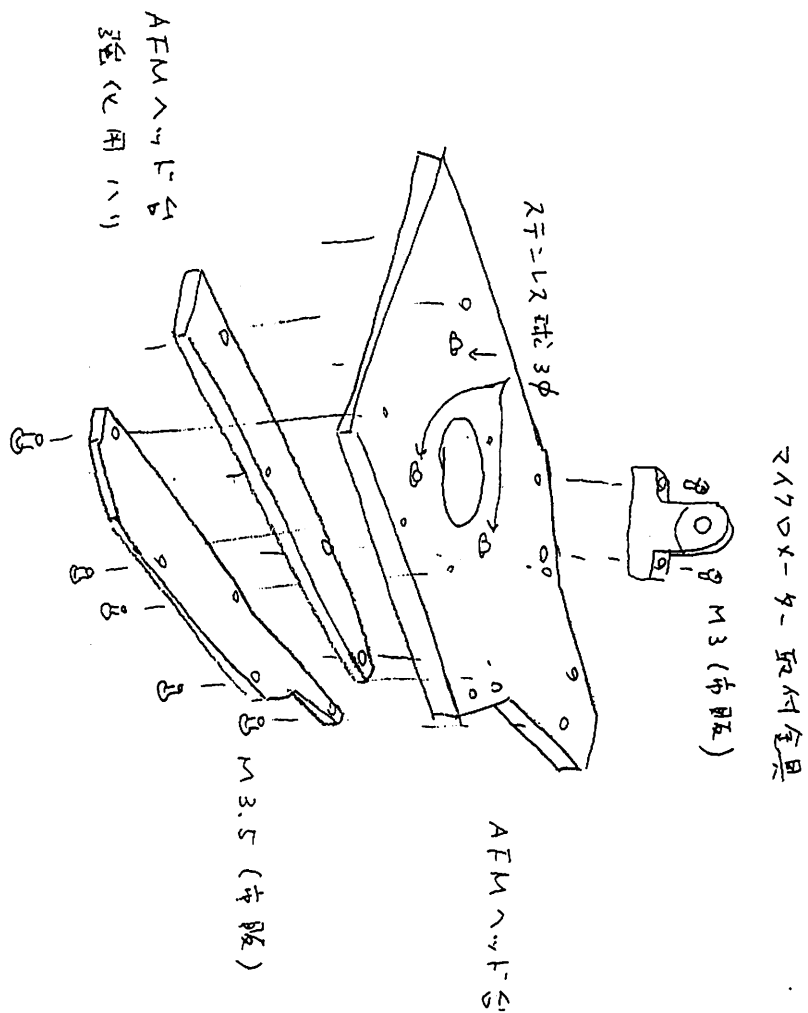


カントレバーホルダー
 74-11.711-1-1
 74-11.711-1-1

A.21 カンチレバーホルダー

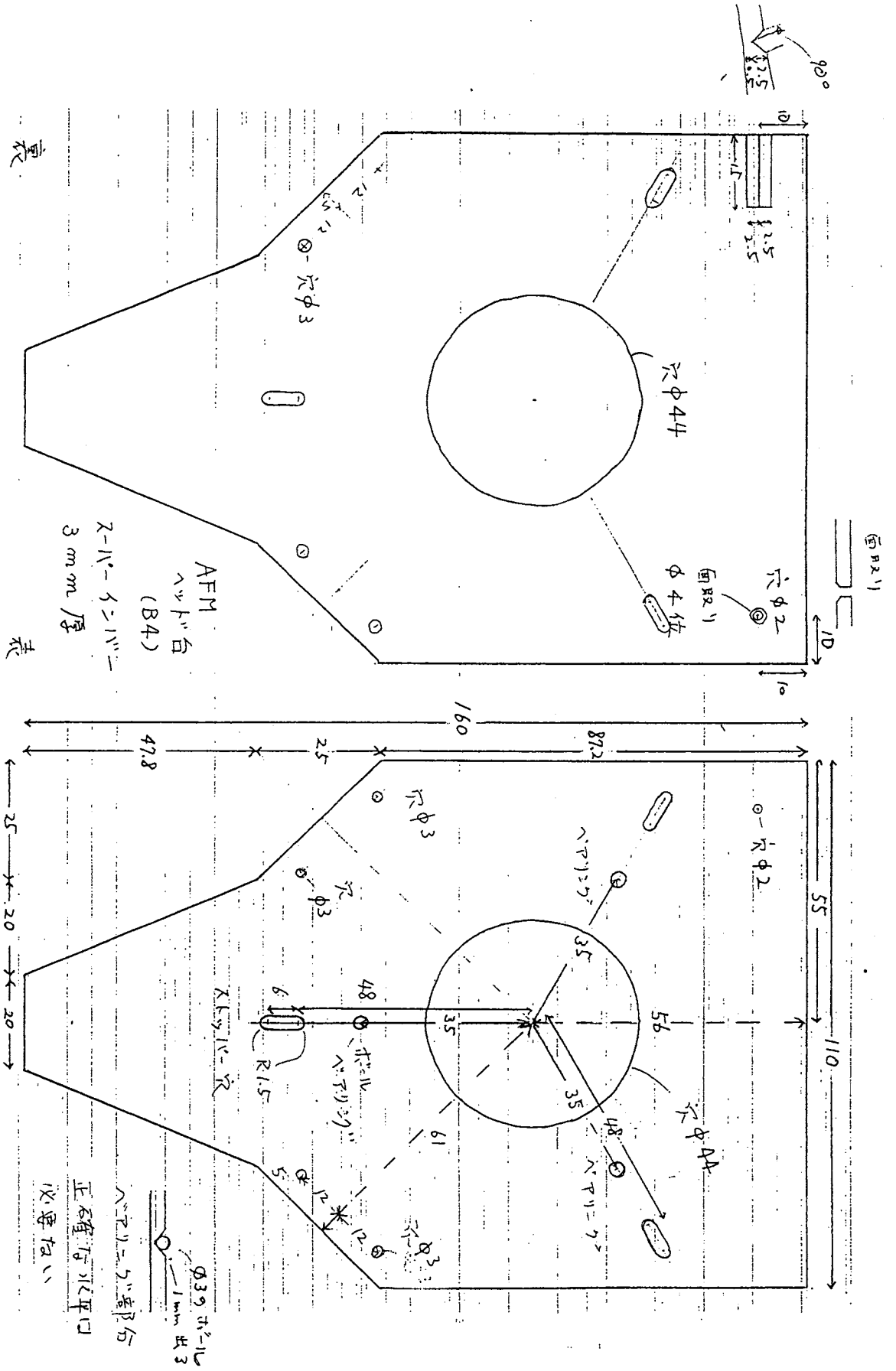


A.22 基板B 4組上がり図

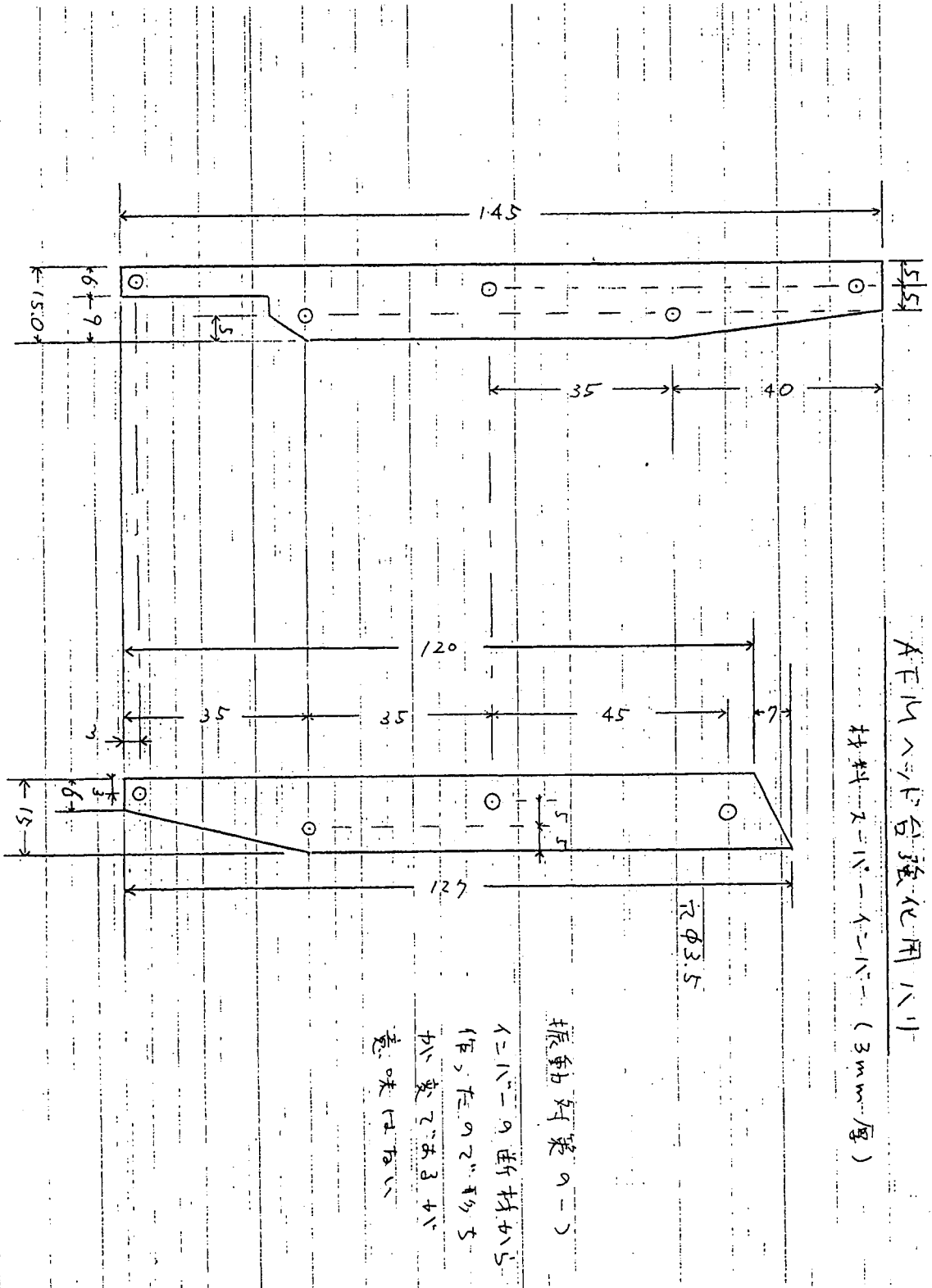


AFMユニット組上り図

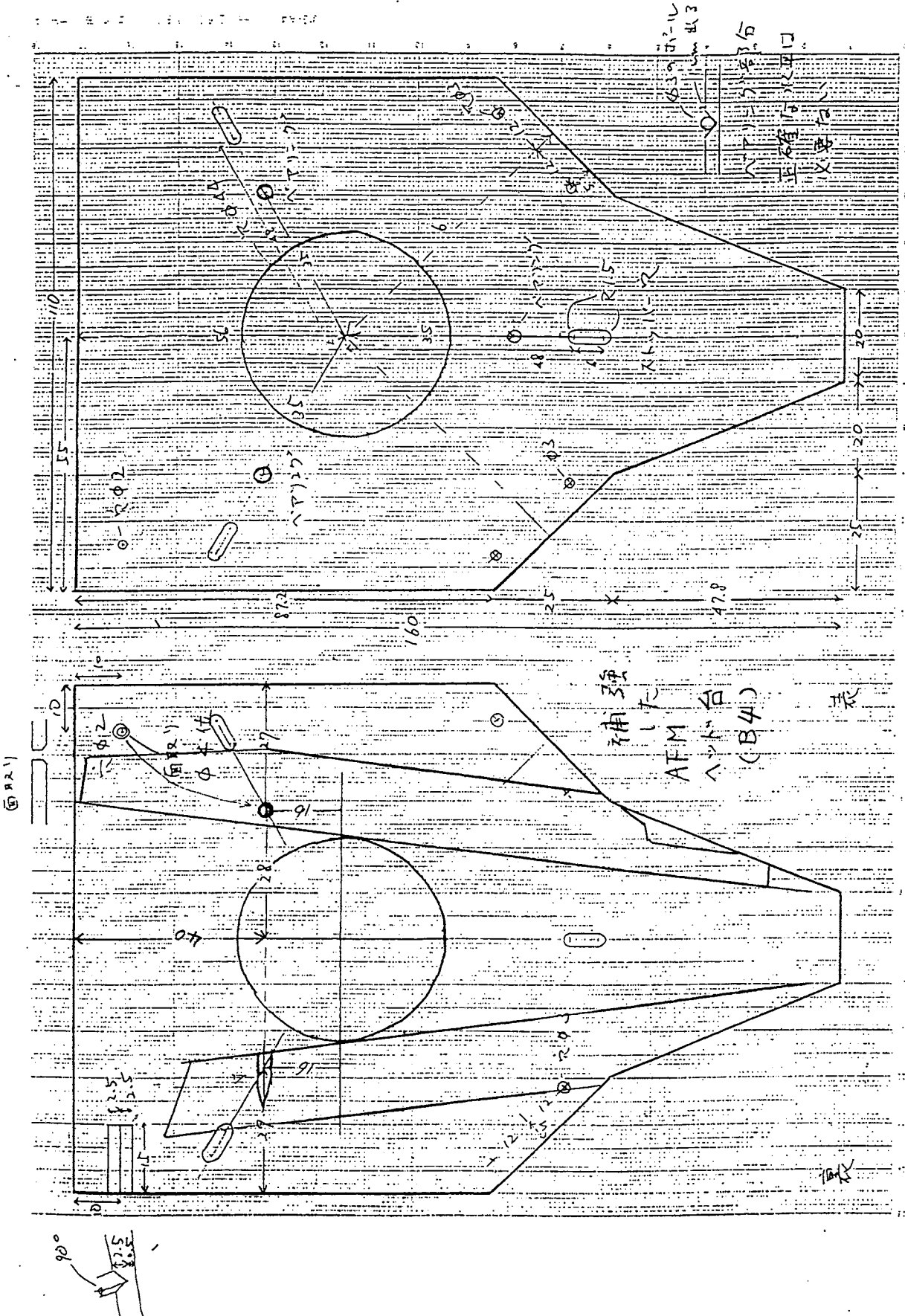
A.23 基盤B4



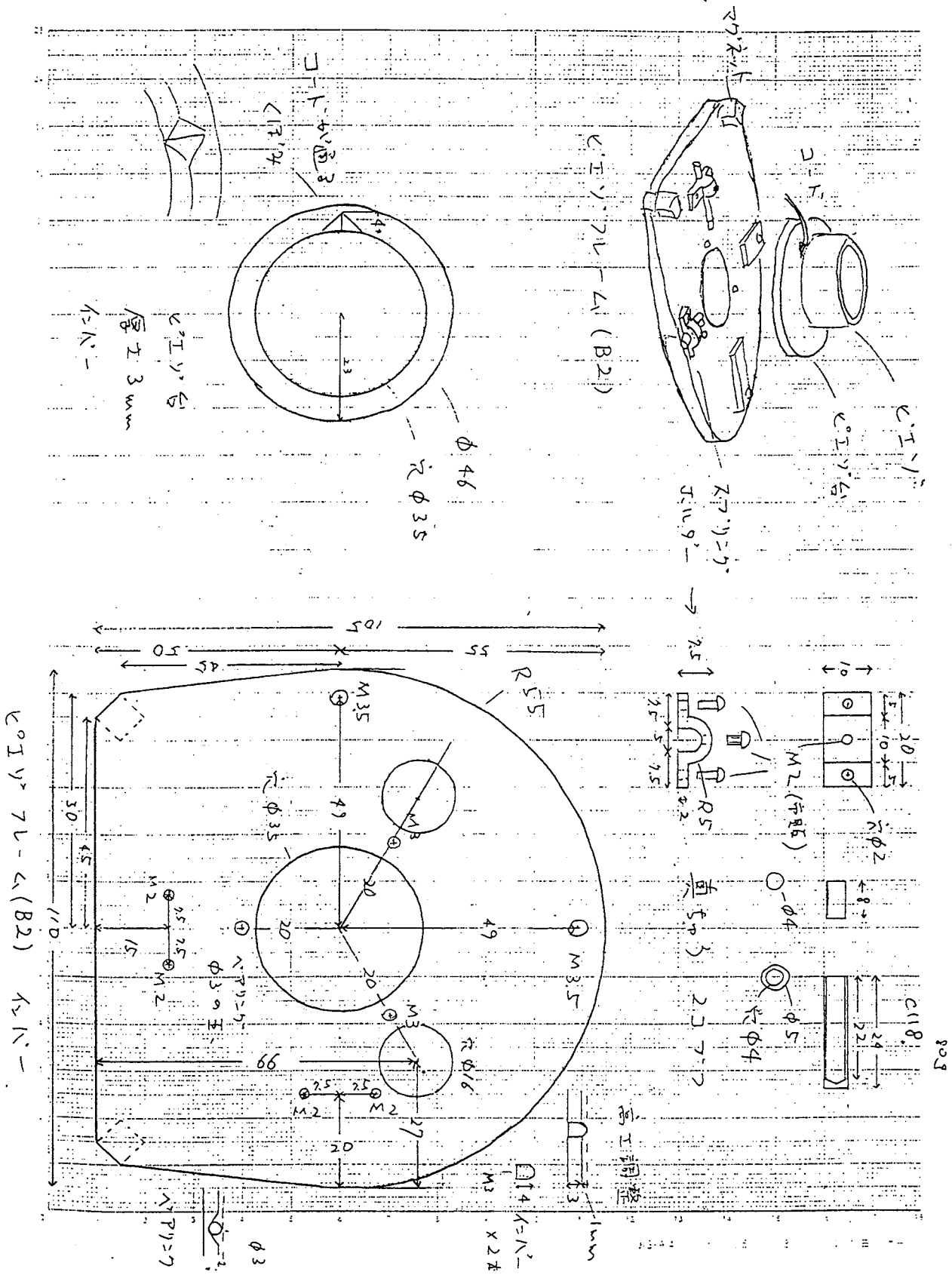
A.24 基盤B 4補強梁



A.25 補強した基盤B4



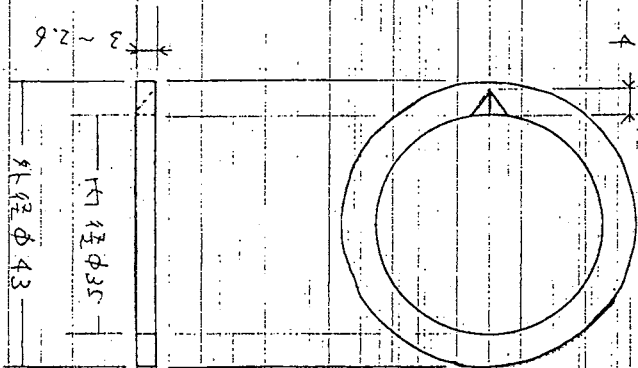
A.26 基板B2



A.27 円筒ピエゾ固定リングとバネシリンダー

個数 1 個

材料 ニッケル

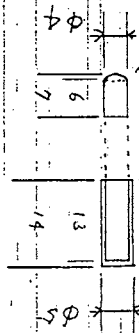


ピエゾ台

裏面をカンミニツクにて
2.5mm幅の溝を5mmに
おさす

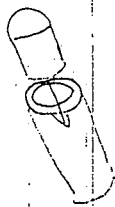
個数 2 個ずつ

材料
ステンレス



バネシリンダー

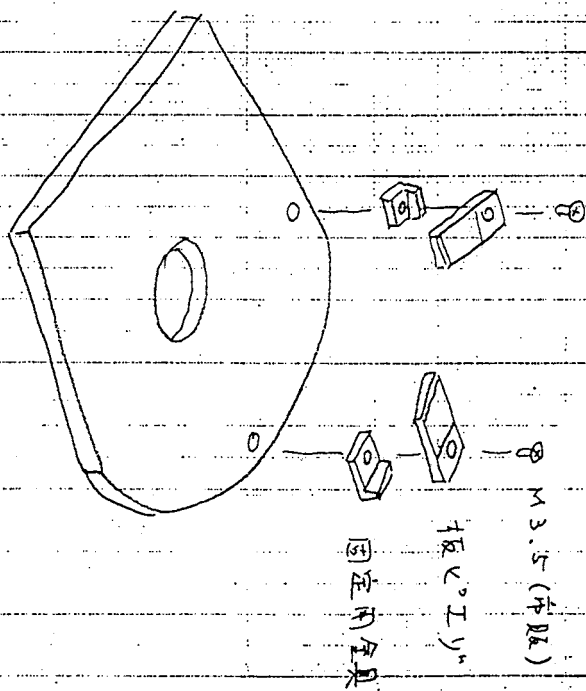
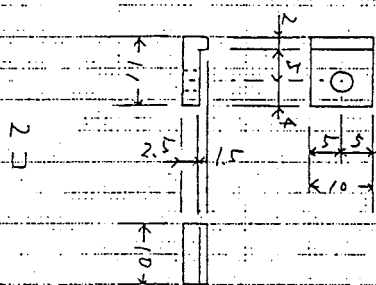
押し返しバネシリンダー



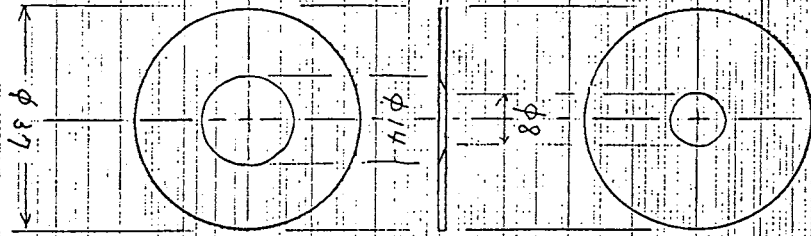
センターライン
スルースに軸く
よりに

A.28 板ピエゾ固定金具

板ピエゾ固定金具
材料 ステンレス



A.29 サンプルステージ



カーブは25°