



CALIFORNIA INSTITUTE OF TECHNOLOGY  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
 IGR, GLASGOW UNIVERSITY, GEO 600 GROUP

**E060059 - A - D**

DRWG NO. REV GID

SHEET SEE BOTTOM LEFT

ASSEMBLY NO.

**D040401**

**PROJECT DRAWING TREE**

TITLE: Assembly of the Quad Controls Prototype Suspension

| NUMBER      | DESCRIPTION |       |               |
|-------------|-------------|-------|---------------|
| APPROVALS:  |             |       |               |
| AUTHOR:     | C Torrie    | DATE: | 25th MAR 2006 |
| CHECKED:    | J. Romie    |       | 29th March 06 |
| APPROVED:   |             |       |               |
| DCC RELEASE |             |       |               |

| # | NUMBER  | DESCRIPTION  |  |  |
|---|---------|--|--|--|
| 1 | D040524 | UPPER STRUCTURE WITH NON SUSPENDED ITEMS             |  |  |
|   | D050329 | TOP BLADE WIRE CLAMP ASSEMBLY FOR DOUBLE CLAMP & PIN |  |  |
|   | D050328 | WIRE CLAMP BODY CPAD                                 |  |  |
|   | D040383 | TOP WIRE BREAK-OFF - MAIN BODY                       |  |  |
|   | D040514 | ETM UPPER STRUCTURE ASSEMBLY                         |  |  |
|   | D060093 | SUS ETM INTERFACE RING ASSEMBLY TD 1039 410          |  |  |
|   | D060072 | INTERFACE BLOCK                                      |  |  |
|   | D050187 | TABLECLOTH ASSEMBLY **                               |  |  |
|   | D050178 | DOG CLAMP ALT LARGE (3/18 1-6 SHCS)                  |  |  |
|   | D060052 | QUAD PUSHERS   |  |  |
|   | D060053 | QUAD MOVERS  |  |  |
|   | D040170 | ASSEMBLY COIL FORMER AND ASSOCIATED PARTS            |  |  |
|   | D030703 | COIL FORMER BRACKET                                  |  |  |
|   | D030122 | SHOULDER   |  |  |
|   | D030105 | COIL FORMER ASSEMBLY **                              |  |  |
|   | D030712 | COIL FORMER CLAMP **                                 |  |  |
|   | D040370 | TOP MASS ASSEMBLY **                                 |  |  |
|   | D040565 | TOP BLADE CARTRIDGE ASSEMBLY                         |  |  |
|   | D030272 | EDDY CURRENT DAMPER ASSEMBLY **                      |  |  |
|   | D050201 | INTERFACE J NUT                                      |  |  |
| 2 | D040044 | LOWER STR ANGLED TRANSVERSE SIDE STRAP               |  |  |
| 3 | D040045 | LOWER STR ANGLED TRANSVERSE SIDE STRAP               |  |  |
| 4 | D040516 | ETM LOWER STR ASSEMBLY RIG                           |  |  |
|   | D050040 | ETM LOWER STRUCTURE SINGLE CATCHER                   |  |  |
|   | D050090 | INNER FACEPLATE                                      |  |  |
|   | D050035 | FACEPLATE  |  |  |
|   | D050036 | MASS SUPPORT STRUT                                   |  |  |
|   | D050038 | LOWER STR FACEPLATE CONNECTOR                        |  |  |
|   | D050053 | Teflon Bearing Pad                                   |  |  |
|   | D050213 | PFA 440HP BEARING PAD FOR ASSEMBLY                   |  |  |
|   | D050195 | FACE STOP  |  |  |
|   | D050188 | LOWER STRUCTURE TOP E-STOPS                          |  |  |
|   | D050041 | LONG. ANGLED V STRAP                                 |  |  |
|   | D050042 | LOWER STR LONG ZED STRAPS                            |  |  |
|   | D050043 | ETM LOWER STR LONG. SIDE STRAP                       |  |  |
|   | D050240 | TIE FOR ANGLED TRANS SIDE STRAP                      |  |  |
|   | D050050 | LONGITUDINAL CROSS STRUT                             |  |  |
|   | D050051 | SIDE PLATE FOR SAFETY STOPS                          |  |  |
|   | D050047 | ETM LOWER STRUCTURE TOP FLANGE PLATE                 |  |  |
|   | D040146 | Electrostatic Drive Evaporation Mask (REF)           |  |  |
|   | D050203 | UI MASS TOP SAFETY STOPS VERTICAL                    |  |  |
|   | D050236 | UI MASS TOP SAFETY STOPS VERTICAL                    |  |  |
|   | D050237 | UI MASS STOP BETWEEN CHAIN                           |  |  |
|   | D050247 | SPACER FOR BETWEEN THE LOWER CHAINS                  |  |  |
|   | D040407 | SUSPENSION & STRUCTURE ASSEMBLY                      |  |  |
|   | D040038 | TEST MASS ASSEMBLY                                   |  |  |
|   | D040036 | MAIN BODY TEST MASS                                  |  |  |
|   | D040037 | INSERTS  |  |  |
|   | D040043 | TWO WIRE BREAK OFF ASSEMBLY                          |  |  |
|   | D040045 | WIRE BREAK OFF                                       |  |  |
|   | D040044 | WIRE BREAK OFF PLATE                                 |  |  |
|   | D040325 | MAIN SECTION BUNG                                    |  |  |
|   | D040052 | GLASS FACE PLATE (ALT)                               |  |  |
|   | D040132 | PENULTIMATE MASS ASSEMBLY                            |  |  |



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| NUMBER  | DESCRIPTION                               |  |  |
|---------|---|--|--|
| D040136 | MAIN BODY PEN MASS                        |  |  |
| D040037 | INSERTS                                   |  |  |
| D040135 | FACE PLATE                                |  |  |
| D040421 | TWO WIRE BREAK OFF ASSEMBLY PEN MASS      |  |  |
| D040420 | PEN MASS WIRE BREAK OFF & CLAMP           |  |  |
| D040044 | WIRE BREAK OFF PLATE                      |  |  |
| D040397 | ASSEMBLY MAGNET FLAG & HEX SPACER         |  |  |
| D020197 | FLAG (FOR MAGNET D020466)                 |  |  |
| D020466 | MAGNET (MODIFIED FROM OFF THE SHELF PART) |  |  |
| D040398 | HEX MAGNET SPACER                         |  |  |
| D050338 | ETM MAIN CHAIN MASS BUNG ASSEMBLY         |  |  |
| D050338 | MAIN CHAIN PEN MASS BUNG INSERT           |  |  |
| D040450 | T-PIECE ROLL ADJUSTER MASS                |  |  |
| D040350 | Main Upper-Intermediate Mass **           |  |  |
| D040161 | REACTION MASS ASSEMBLY                    |  |  |
| D040164 | MAIN BODY REACTION TEST MASS              |  |  |
| D040037 | INSERTS                                   |  |  |
| D040445 | WIRE BREAK OFF                            |  |  |
| D040422 | REACTION TEST MASS BUNG INSERT            |  |  |
| D040052 | GLASS FACE PLATE (ALT)                    |  |  |
| D040146 | Electrostatic Drive Evaporation Mask      |  |  |
| D040043 | WIRE CLAMP ASSEMBLY (ALT)                 |  |  |
| D040142 | PEN REACTION MASS ASSEMBLY                |  |  |
| D040143 | PEN REACTION MASS MAIN SECTION            |  |  |
| D040421 | TWO WIRE BREAK OFF ASSEMBLY PEN MASS      |  |  |
| D040420 | PEN MASS WIRE BREAK OFF & CLAMP           |  |  |
| D040044 | WIRE BREAK OFF PLATE                      |  |  |
| D040185 | REMOVALBE BACK FACE PLATE                 |  |  |
| D040145 | PEN REACTION MASS REMOVABLE FACE PLATE    |  |  |
| D040170 | ASSEMBLY COIL FORMER AND ASSOCIATED PARTS |  |  |
| D030703 | COIL FORMER BRACKET                       |  |  |
| D030122 | SHOULDER                                  |  |  |
| D030105 | COIL FORMER ASSEMBLY                      |  |  |
| D030712 | COIL FORMER CLAMP                         |  |  |
| D040171 | REMOVABLE BASE CYLINDER                   |  |  |
| D040186 | ADJUSTABLE CYLINDER FOR PITCH             |  |  |
| D040360 | Upper-Intermediate Reaction Mass **       |  |  |

\*\* Associated drawing tree arranged by another engineer / collaborator



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**SUMMARY OF OVERALL ASSEMBLY + KEY SUB-ASSEMBLIES**

TITLE: Assembly of the Quad Controls Prototype Suspension

| PART NUMBER   | DESCRIPTION  |
|---|--|
| <b>SUMMARY OF OVERALL ASSEMBLY + KEY SUB-ASSEMBLIES</b> |  |
| D040400 (REF)   | D040400 QUAD ASSEMBLY ETM C-PTYPE SUSPENSION (SUSPENDED CONFIG OF D040401) |
| D040401 (REF)   | QUAD ASSEMBLY ETM C-PTYPE SUSPENSION ALL CONFIGURATIONS                    |
| D040524   | UPPER STRUCTURE WITH NON SUSPENDED ITEMS                                   |
| D050329   | TOP BLADE WIRE CLAMP ASSEMBLY FOR DOUBLE CLAMP & PIN                       |
| D040514   | ETM UPPER STRUCTURE ASSEMBLY   |
| D060093   | SUS ETM INTERFACE RING ASSEMBLY TD 1039 410                                |
| D060072   | INTERFACE BLOCK  |
| D050187   | TABLECLOTH ASSEMBLY **   |
| D040170   | ASSEMBLY COIL FORMER AND ASSOCIATED PARTS                                  |
| D040370   | TOP MASS ASSEMBLY **   |
| D040565   | TOP BLADE CARTRIDGE ASSEMBLY **  |
| D030272   | EDDY CURRENT DAMPER ASSEMBLY **  |
| D040516   | ETM LOWER STR ASSEMBLY RIG   |
| D050040   | ETM LOWER STRUCTURE SINGLE CATCHER   |
| D040038   | TEST MASS ASSEMBLY   |
| D040043   | TWO WIRE BREAK OFF ASSEMBLY  |
| D040132   | PENULTIMATE MASS ASSEMBLY  |
| D040421   | TWO WIRE BREAK OFF ASSEMBLY PEN MASS                                       |
| D040397   | ASSEMBLY MAGNET FLAG & HEX SPACER  |
| D050338   | ETM MAIN CHAIN MASS BUNG ASSEMBLY  |
| D040350   | Main Upper-Intermediate Mass **  |
| D040161   | REACTION MASS ASSEMBLY   |
| D040043   | WIRE CLAMP ASSEMBLY (ALT)  |
| D040142   | PEN REACTION MASS ASSEMBLY   |
| D040421   | TWO WIRE BREAK OFF ASSEMBLY PEN MASS                                       |
| D040170   | ASSEMBLY COIL FORMER AND ASSOCIATED PARTS                                  |
| D040360   | Upper-Intermediate Reaction Mass **  |

\*\* Associated drawing tree arranged by another engineer / collaborator