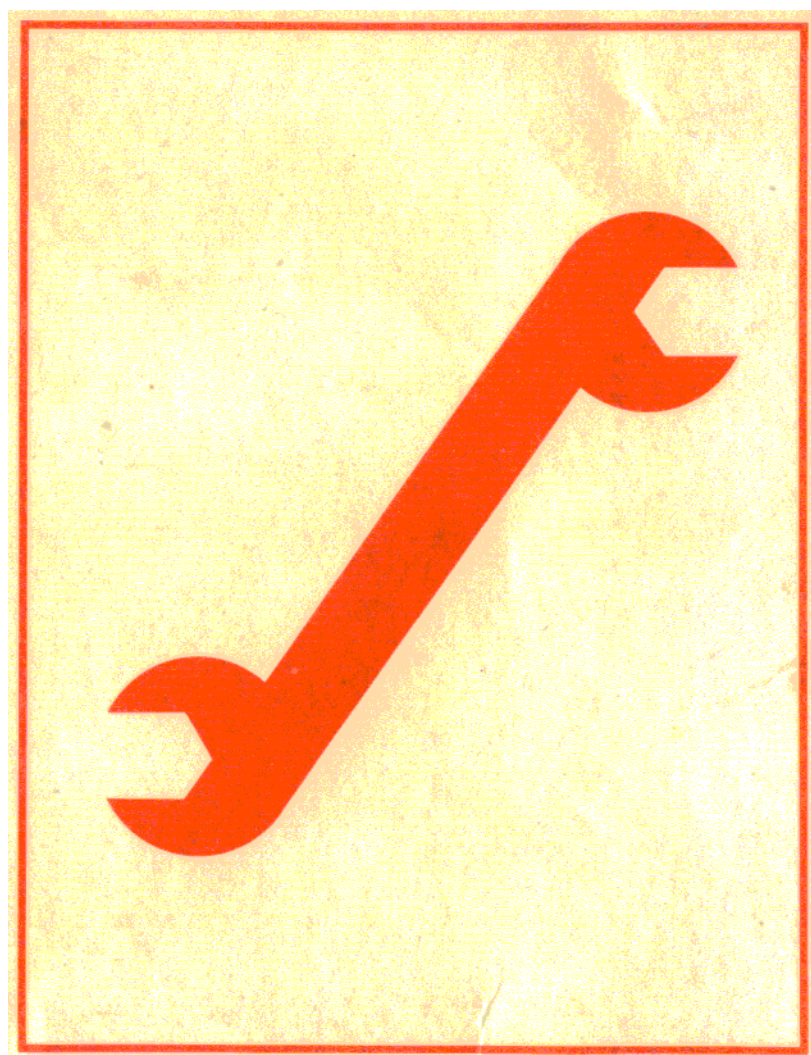




| Tightening Torques                      |  | Nm   |    | mkp  |    |
|-----------------------------------------|--|------|----|------|----|
|                                         |  | from | to | from | to |
| <b>General Electrical System</b>        |  |      |    |      |    |
| <b>61 13 ... Plug Connections</b>       |  |      |    |      |    |
| Door plug connection to body            |  | 5    |    | 0,5  |    |
| Fuse box Screws for safty fuse          |  | 5    |    | 0,5  |    |
| Ground or positive connection points    |  | 5    |    | 0,5  |    |
| <b>61 31 ... Switches</b>               |  |      |    |      |    |
| Temperature switch                      |  | 14   |    | 1,4  |    |
| Oil pressure switch                     |  | 14   |    | 1,4  |    |
| Reversing lamp switch                   |  | 40   |    | 4    |    |
| Transmission switch on instrument panel |  | 20   |    | 2    |    |
| <b>61 61 ... Windshield Wipers</b>      |  | 4,5  |    | 0,45 |    |
| Motor crank to wiper motor              |  | 27   |    | 2,7  |    |



Service-Information BMW Automobile



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**All Service Informations are saved in german language, please find them in the german manual.**

| change to                                                                           |                     | ECE injection (A)                                                                   |                 | 80 - 83                                               | 75 - 83 | 80 - 83   | 75 - 80 | 75 - 79 | 77 - 82 |
|-------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------|---------|-----------|---------|---------|---------|
|  | ECE carburettor (A) |  | US Models       | ECE carburettor - Models with Mechanical transmission |         |           |         |         |         |
|  | ECE injection       |  | Japanese Models | 315                                                   | 316     | 316 (1,8) | 318     | 320/4   | 320/6   |
| Technical Data                                                                      |                     | General Electrical System                                                           |                 |                                                       |         |           |         |         |         |
| 61 20...Battery                                                                     |                     |                                                                                     |                 | Year                                                  |         |           |         |         |         |
| Nominal voltage                                                                     |                     |                                                                                     |                 | Version                                               |         |           |         |         |         |
| Capacity                                                                            |                     |                                                                                     |                 | Model                                                 |         |           |         |         |         |
|                                                                                     |                     |                                                                                     |                 | Unit                                                  |         |           |         |         |         |
|                                                                                     |                     |                                                                                     |                 | V                                                     |         |           |         |         |         |
|                                                                                     |                     |                                                                                     |                 | 44                                                    | 36      | 44        | 36      |         | 44      |
|                                                                                     |                     |                                                                                     |                 | -                                                     | 44      |           | -       |         |         |
| 61 31...Switches                                                                    |                     |                                                                                     |                 |                                                       |         |           |         |         |         |
| Oil pressure switch                                                                 |                     | Switching in pressure                                                               |                 | 0,2 ÷ 0,5                                             |         |           |         |         |         |
| Temperature switch 96°C                                                             |                     | Switching-in point from 1980 models                                                 |                 | °C                                                    |         |           |         |         |         |
|                                                                                     |                     | Switching-out point from 1980 models                                                |                 | °C                                                    |         |           |         |         |         |
| Temperature switch 91°C                                                             |                     | Switching-in point                                                                  |                 | °C                                                    |         |           |         |         |         |
|                                                                                     |                     | Switching-out point                                                                 |                 | °C                                                    |         |           |         |         |         |
|                                                                                     |                     | Switching-in point from 1980 models                                                 |                 | °C                                                    |         |           |         |         |         |
|                                                                                     |                     | Switching-out point from 1980 models                                                |                 | °C                                                    |         |           |         |         |         |
| Brake pad wear sensor                                                               |                     |                                                                                     |                 |                                                       |         |           |         |         |         |
| Warning position for pad thickness remainder from 1980 models                       |                     |                                                                                     |                 |                                                       |         |           |         |         |         |
|                                                                                     |                     | mind. mm                                                                            |                 | 1,5                                                   |         |           |         |         |         |
|                                                                                     |                     | max. mm                                                                             |                 | 3,5                                                   |         |           |         |         |         |
| 61 66...Windshield Washer Pump                                                      |                     |                                                                                     |                 |                                                       |         |           |         |         |         |
| Delivery pressure                                                                   |                     | at least bar                                                                        |                 | 1,5                                                   |         |           |         |         |         |

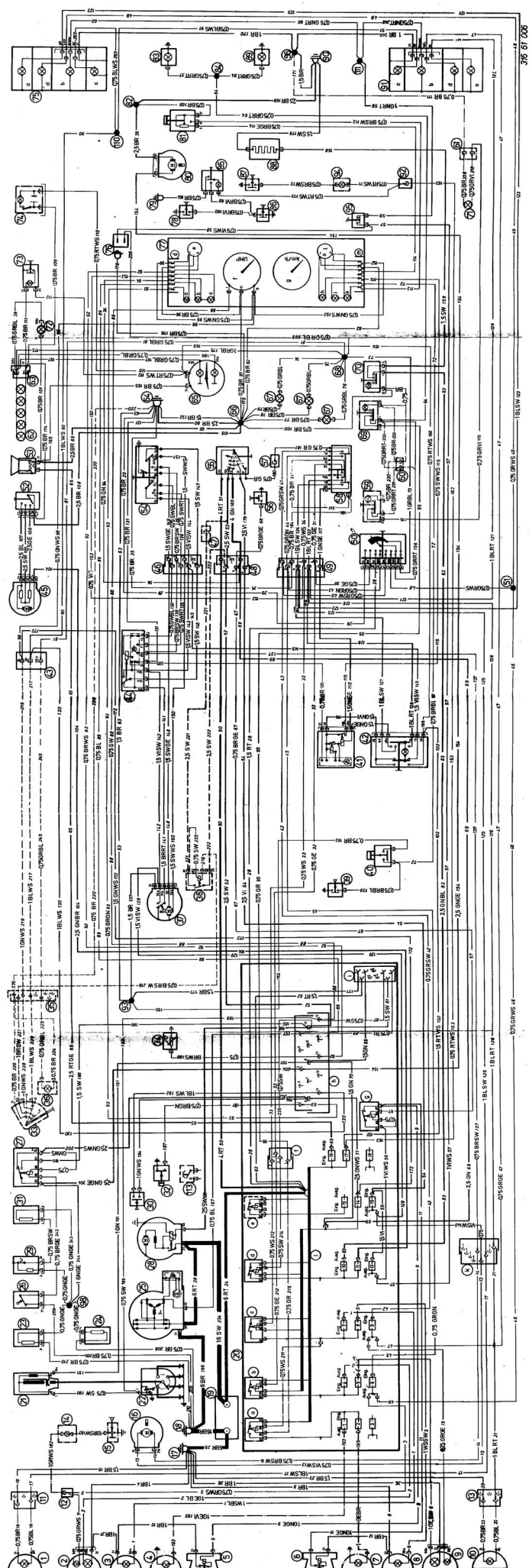
|                                                                                                                          |                   |                                         |         |                                                      |         |         |         |
|--------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|---------|------------------------------------------------------|---------|---------|---------|
| <div> <div>change to</div> <div> <div> <div></div> <div></div> </div> <div> <div></div> <div></div> </div> </div> </div> | ECE injection (A) |                                         | Year    | 80 - 83                                              | 75 - 80 | 75 - 79 | 77 - 82 |
|                                                                                                                          | ECE carburettor   |                                         | Version | ECE carburettor - Models with Automatic transmission |         |         |         |
|                                                                                                                          | ECE injection     |                                         | Model   | 316 A (1,8)                                          | 318 A   | 320/4 A | 320/6 A |
| Technical Data                                                                                                           |                   | General Electrical System               |         |                                                      |         |         |         |
| 61 20...Battery                                                                                                          |                   |                                         |         |                                                      |         |         |         |
| Nominal voltage                                                                                                          |                   | V                                       |         | 12                                                   |         |         |         |
| Capacity                                                                                                                 |                   |                                         |         | 44                                                   | 36      | 44      |         |
|                                                                                                                          |                   | from 1980 models                        |         | -                                                    | 44      | -       |         |
| 61 31...Switches                                                                                                         |                   |                                         |         |                                                      |         |         |         |
| Oil pressure switch                                                                                                      |                   | Switching in pressure                   |         | 0,2 ÷ 0,5                                            |         |         |         |
| Temperature switch 96°C                                                                                                  |                   | Switching-in point from 1980 models °C  |         | 94 ÷ 98                                              |         |         |         |
|                                                                                                                          |                   | Switching-out point from 1980 models °C |         | 89 ÷ 93                                              |         |         |         |
| Temperature switch 91°C                                                                                                  |                   | Switching-in point                      |         | no data                                              |         |         | 89 ÷ 93 |
|                                                                                                                          |                   | Switching-out point                     |         | no data                                              |         |         | 89 ÷ 93 |
|                                                                                                                          |                   | Switching-in point from 1980 models °C  |         | 89 ÷ 93                                              |         |         |         |
|                                                                                                                          |                   | Switching-out point from 1980 models °C |         | 82 ÷ 86                                              |         |         |         |
| Brake pad wear sensor                                                                                                    |                   |                                         |         |                                                      |         |         |         |
| Warning position for pad thickness remainder from 1980 models                                                            |                   | mind. mm                                |         | 1,5                                                  | -       |         | 1,5     |
|                                                                                                                          |                   | max. mm                                 |         | 3,5                                                  | -       |         | 3,5     |
| 61 66...Windshield Washer Pump                                                                                           |                   |                                         |         | 1,5                                                  |         |         |         |
| Delivery pressure                                                                                                        |                   | at least bar                            |         |                                                      |         |         |         |

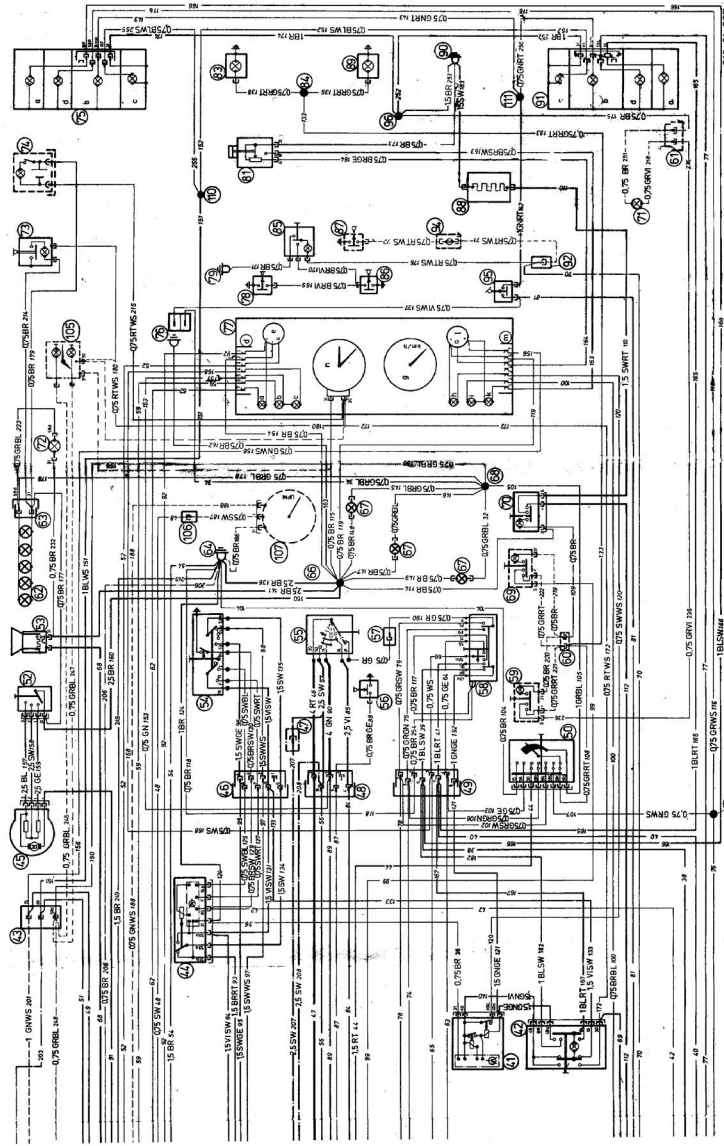
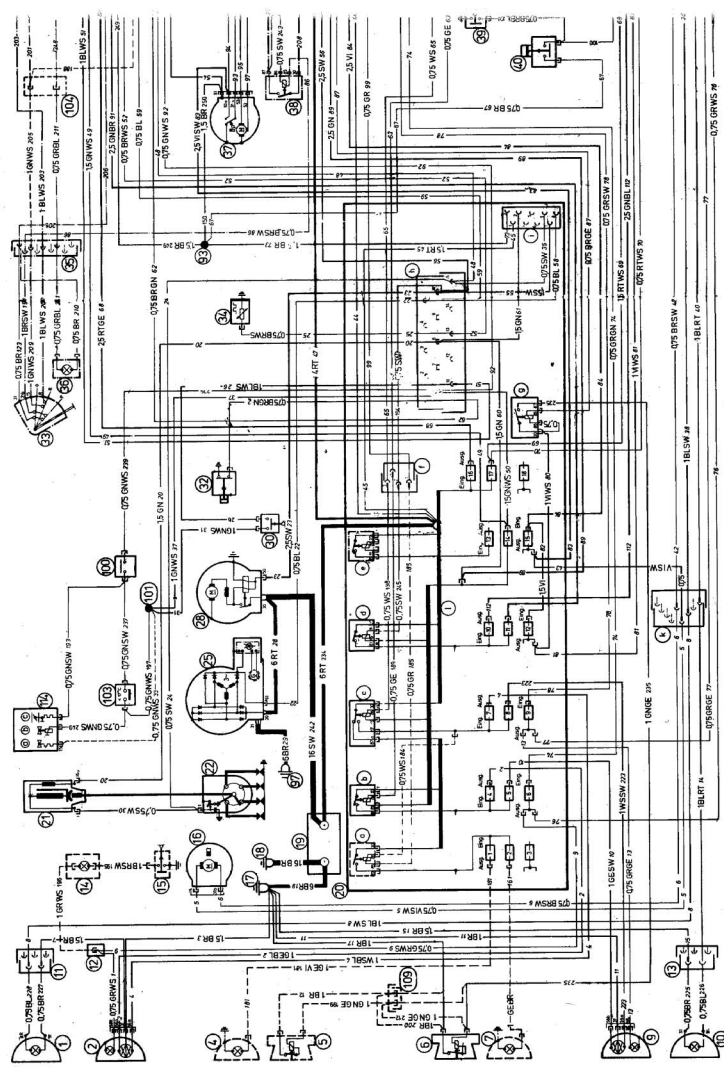
| change to                                                                           |                     | ECE injection (A)                                                                   |                 | Year         |  | 79 - 83                                             | 79 - 80 | 75 - 78 | 75 - 78  | 77 - 82 | 77 - 82 |
|-------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|-----------------|--------------|--|-----------------------------------------------------|---------|---------|----------|---------|---------|
|  | ECE carburettor     |  | US Models       | Version      |  | ECE injection - Models with Mechanical transmission |         |         |          |         |         |
|  | ECE carburettor (A) |  | Japanese Models | Model        |  | 318 i                                               | 318 i   | 320 i   | 320i / 4 | 323 i   | 323 i   |
| Technical Data                                                                      |                     | General Electrical System                                                           |                 | Unit         |  |                                                     |         |         |          |         |         |
| 61 20...Battery                                                                     |                     |                                                                                     |                 | V            |  |                                                     |         |         |          |         |         |
| Nominal voltage                                                                     |                     |                                                                                     |                 |              |  | 12                                                  |         |         |          |         |         |
| Capacity                                                                            |                     |                                                                                     |                 |              |  | 44                                                  |         |         |          |         |         |
| 61 31...Switches                                                                    |                     |                                                                                     |                 |              |  |                                                     |         |         |          |         |         |
| Oil pressure switch                                                                 |                     | Switching in pressure                                                               |                 | bar          |  | 0,2 ÷ 0,5                                           |         |         |          |         |         |
| Temperature switch 96°C                                                             |                     | Switching-in point from 1980 models                                                 |                 | °C           |  | 94 ÷ 98                                             |         |         |          |         |         |
|                                                                                     |                     | Switching-out point from 1980 models                                                |                 | °C           |  | 89 ÷ 93                                             |         |         |          |         |         |
| Temperature switch 91°C                                                             |                     | Switching-in point                                                                  |                 | °C           |  | no data                                             |         |         |          |         |         |
|                                                                                     |                     | Switching-out point                                                                 |                 | °C           |  | no data                                             |         |         |          |         |         |
|                                                                                     |                     | Switching-in point from 1980 models                                                 |                 | °C           |  | 89 ÷ 93                                             |         |         |          |         |         |
|                                                                                     |                     | Switching-out point from 1980 models                                                |                 | °C           |  | 82 ÷ 86                                             |         |         |          |         |         |
| Brake pad wear sensor                                                               |                     |                                                                                     |                 |              |  |                                                     |         |         |          |         |         |
| Warning position for pad thickness remainder from 1980 models                       |                     |                                                                                     |                 | mind. mm     |  | 1,5                                                 |         |         |          |         |         |
|                                                                                     |                     |                                                                                     |                 | max. mm      |  | 3,5                                                 |         |         |          |         |         |
| 61 66...Windshield Washer Pump                                                      |                     |                                                                                     |                 |              |  |                                                     |         |         |          |         |         |
| Delivery pressure                                                                   |                     |                                                                                     |                 | at least bar |  | 1,5                                                 |         |         |          |         |         |

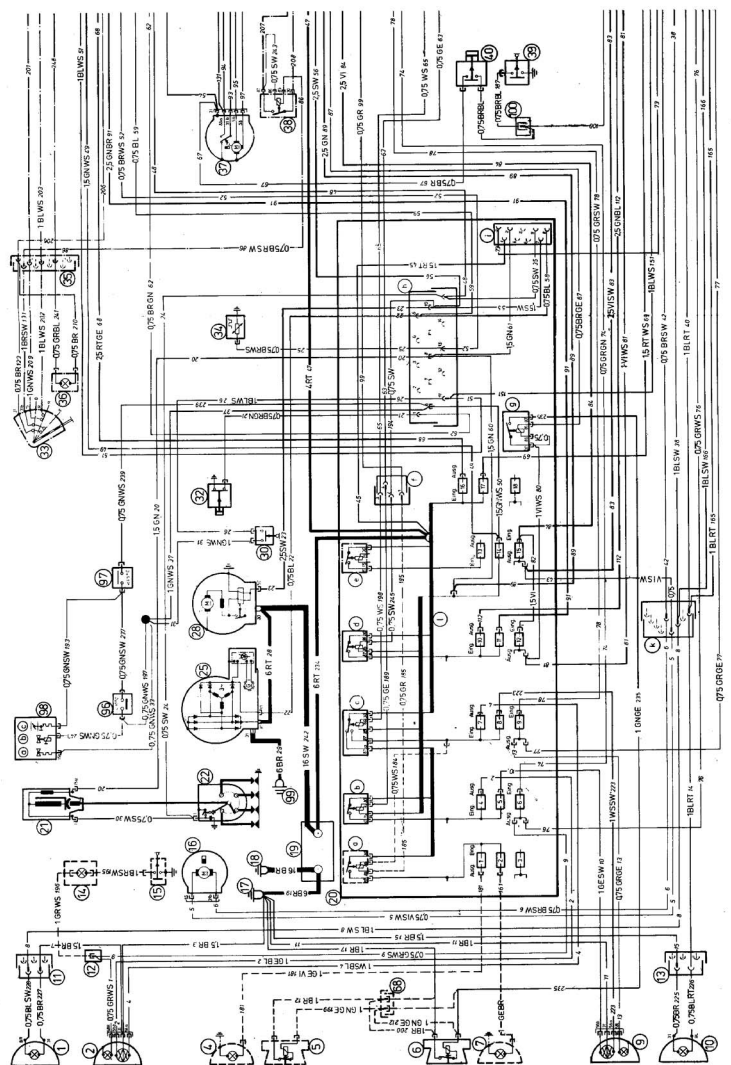
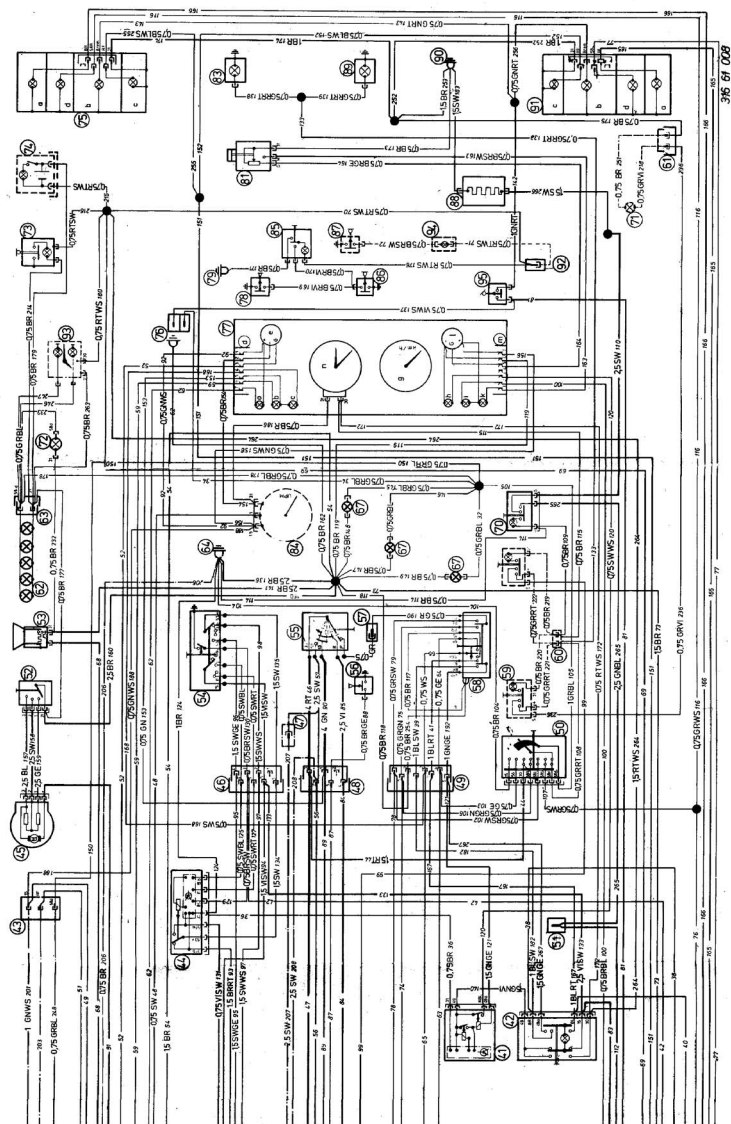
| change to                                                                                               |                 |  ECE injection | Year                                 | 79 - 83                                            | 79 - 80   | 75 - 78   | 75 - 78    | 77 - 82 | 77 - 82   |
|---------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------|-----------|-----------|------------|---------|-----------|
|  ECE carburettor     | US Models       |                | Version                              | ECE injection - Models with Automatic transmission |           |           |            |         |           |
|  ECE carburettor (A) | Japanese Models |                | Model                                | 318 i A                                            | 318 i A S | 320 i A S | 320i / 4 A | 323 i A | 323 i A S |
| Technical Data                                                                                          |                 |                                                                                                   | General Electrical System            |                                                    |           |           |            |         |           |
| 61 20...Battery                                                                                         |                 |                                                                                                   |                                      |                                                    |           |           |            |         |           |
| Nominal voltage                                                                                         |                 |                                                                                                   | V                                    | 12                                                 |           |           |            |         |           |
| Capacity                                                                                                |                 |                                                                                                   |                                      | 44                                                 |           | 55        |            |         |           |
| 61 31...Switches                                                                                        |                 |                                                                                                   |                                      |                                                    |           |           |            |         |           |
| Oil pressure switch                                                                                     |                 |                                                                                                   | Switching in pressure                | bar                                                |           |           |            |         |           |
| Temperature switch 96°C                                                                                 |                 |                                                                                                   | Switching-in point from 1980 models  | °C                                                 |           |           |            |         |           |
|                                                                                                         |                 |                                                                                                   | Switching-out point from 1980 models | °C                                                 |           |           |            |         |           |
| Temperature switch 91°C                                                                                 |                 |                                                                                                   | Switching-in point                   | no data                                            |           | 89 ÷ 93   |            |         |           |
|                                                                                                         |                 |                                                                                                   | Switching-out point                  | no data                                            |           | 82 ÷ 86   |            |         |           |
|                                                                                                         |                 |                                                                                                   | Switching-out point from 1980 models | 89 ÷ 93                                            |           |           |            |         |           |
|                                                                                                         |                 |                                                                                                   | Switching-out point from 1980 models | 82 ÷ 86                                            |           |           |            |         |           |
| Brake pad wear sensor                                                                                   |                 |                                                                                                   |                                      |                                                    |           |           |            |         |           |
| Warning position for pad thickness remainder from 1980 models                                           |                 |                                                                                                   |                                      |                                                    |           |           |            |         |           |
|                                                                                                         |                 |                                                                                                   | mind. mm                             | 1,5                                                |           | -         |            | 1,5     |           |
|                                                                                                         |                 |                                                                                                   | max. mm                              | 3,5                                                |           | -         |            | 3,5     |           |
| 61 66...Windshield Washer Pump                                                                          |                 |                                                                                                   |                                      | 1,5                                                |           |           |            |         |           |
| Delivery pressure                                                                                       |                 |                                                                                                   | at least bar                         |                                                    |           |           |            |         |           |

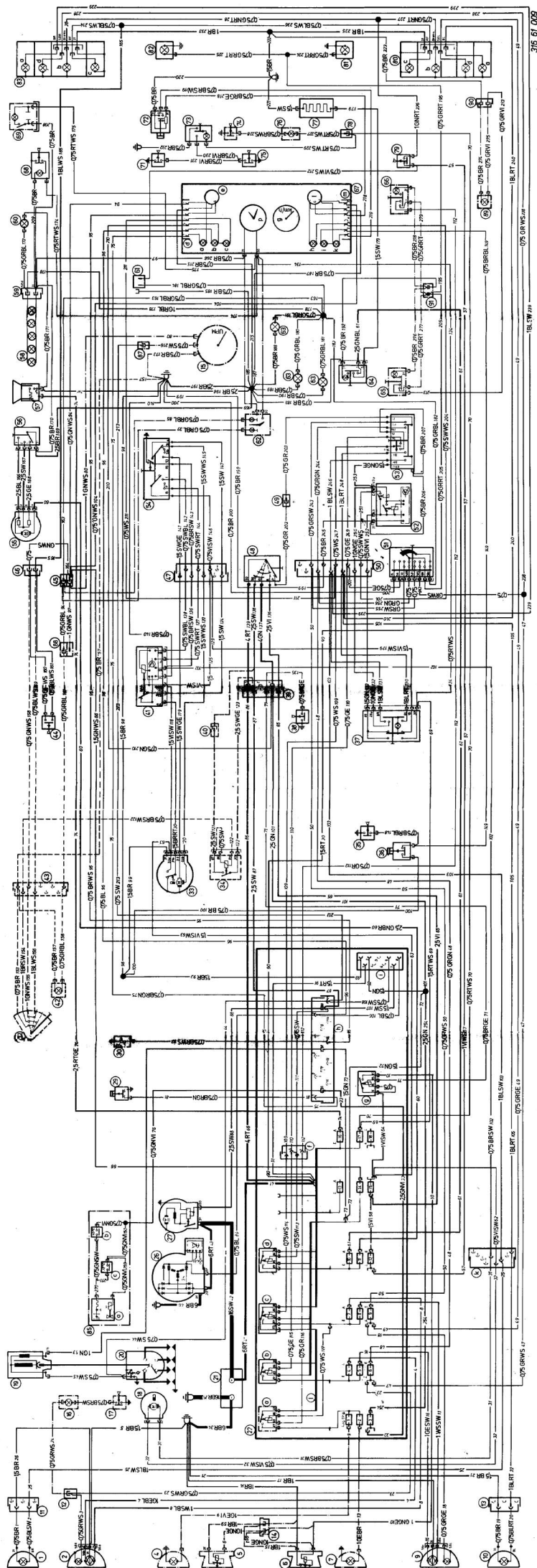
| change to                                                                           |                     | ECE injection                                                                       |                   | Year                                 |  | 79 - 82     |  | 79 - 82 |               | 76 - 79   |  | 76 - 79 |  |
|-------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|-------------------|--------------------------------------|--|-------------|--|---------|---------------|-----------|--|---------|--|
|  | ECE carburettor     |  | ECE injection (A) | Version                              |  | US Models   |  |         |               |           |  |         |  |
|  | ECE carburettor (A) |  | Japanese Models   | Model                                |  | 320 i (1.8) |  |         | 320 i A (1.8) |           |  | 320 i   |  |
| Technical Data                                                                      |                     |                                                                                     |                   | General Electrical System            |  |             |  | Unit    |               |           |  |         |  |
| 61 20...Battery                                                                     |                     |                                                                                     |                   |                                      |  |             |  | V       |               | 12        |  |         |  |
| Nominal voltage                                                                     |                     |                                                                                     |                   |                                      |  |             |  |         |               | 44        |  |         |  |
| Capacity                                                                            |                     |                                                                                     |                   |                                      |  |             |  |         |               |           |  |         |  |
| 61 31...Switches                                                                    |                     |                                                                                     |                   |                                      |  |             |  |         |               |           |  |         |  |
| Oil pressure switch                                                                 |                     |                                                                                     |                   | Switching in pressure                |  |             |  | bar     |               | 0,2 ÷ 0,5 |  |         |  |
| Temperature switch 96°C                                                             |                     |                                                                                     |                   | Switching-in point from 1980 models  |  |             |  | °C      |               | 94 ÷ 98   |  |         |  |
|                                                                                     |                     |                                                                                     |                   | Switching-out point from 1980 models |  |             |  | °C      |               | 89 ÷ 93   |  |         |  |
| Temperature switch 91°C                                                             |                     |                                                                                     |                   | Switching-in point                   |  |             |  | °C      |               | no data   |  |         |  |
|                                                                                     |                     |                                                                                     |                   | Switching-out point                  |  |             |  | °C      |               | no data   |  |         |  |
|                                                                                     |                     |                                                                                     |                   | Switching-in point from 1980 models  |  |             |  | °C      |               | 89 ÷ 93   |  |         |  |
|                                                                                     |                     |                                                                                     |                   | Switching-out point from 1980 models |  |             |  | °C      |               | 82 ÷ 86   |  |         |  |
| Brake pad wear sensor                                                               |                     |                                                                                     |                   |                                      |  |             |  |         |               |           |  |         |  |
| Warning position for pad thickness remainder from 1980 models                       |                     |                                                                                     |                   |                                      |  |             |  |         |               |           |  |         |  |
|                                                                                     |                     |                                                                                     |                   | mind. mm                             |  |             |  |         |               | 1,5       |  |         |  |
|                                                                                     |                     |                                                                                     |                   | max. mm                              |  |             |  |         |               | 3,5       |  |         |  |
| 61 66...Windshield Washer Pump                                                      |                     |                                                                                     |                   |                                      |  |             |  |         |               |           |  |         |  |
| Delivery pressure                                                                   |                     |                                                                                     |                   | at least bar                         |  |             |  |         |               | 1,5       |  |         |  |

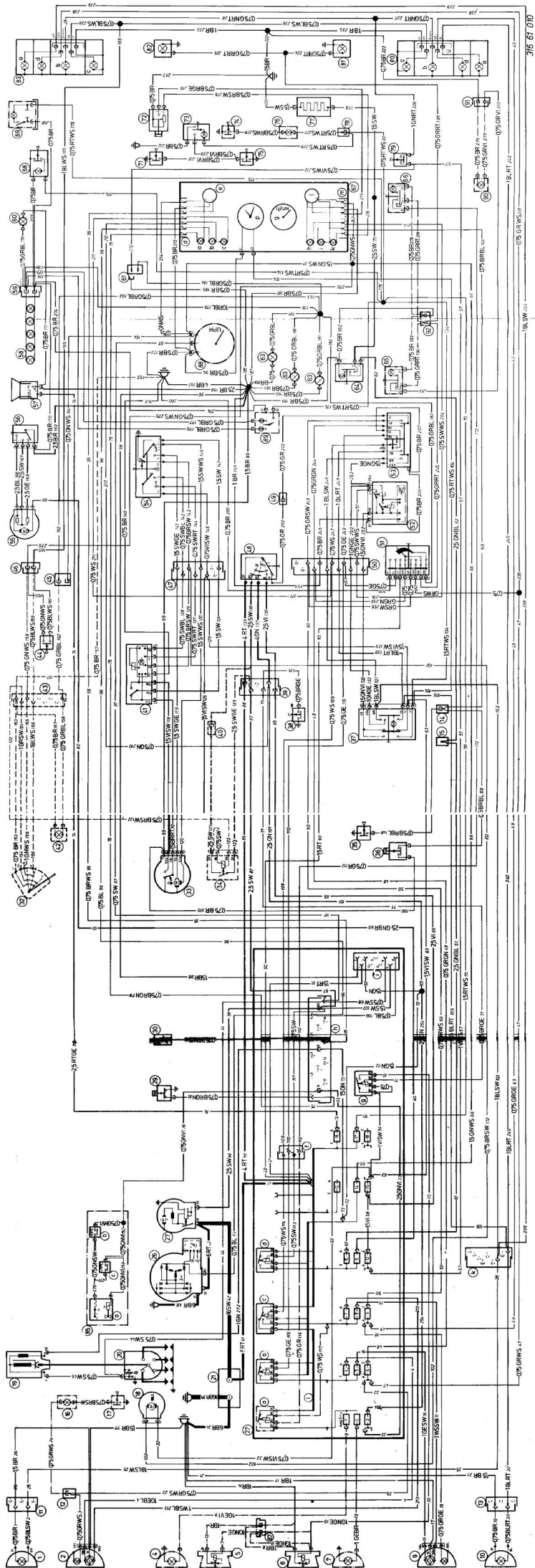
|                                                                                     |                     |                                                                                     |  |                           |  |           |  |
|-------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|--|---------------------------|--|-----------|--|
| change to                                                                           |                     |  |  | ECE Injection             |  | Year      |  |
|  | ECE carburettor     |  |  | ECE Injection (A)         |  | Version   |  |
|  | ECE carburettor (A) |  |  | US Models                 |  | Model     |  |
| Technical Data                                                                      |                     |                                                                                     |  | General Electrical System |  |           |  |
| 61 20...Battery                                                                     |                     |                                                                                     |  | Unit                      |  |           |  |
| Nominal voltage                                                                     |                     |                                                                                     |  | V                         |  |           |  |
| Capacity                                                                            |                     |                                                                                     |  | 12                        |  |           |  |
|                                                                                     |                     |                                                                                     |  | 44                        |  |           |  |
| 61 31...Switches                                                                    |                     |                                                                                     |  |                           |  |           |  |
| Oil pressure switch                                                                 |                     | Switching in pressure                                                               |  | bar                       |  |           |  |
| Temperature switch 96°C                                                             |                     | Switching-in point from 1980 models                                                 |  | °C                        |  | 0,2 ÷ 0,5 |  |
|                                                                                     |                     | Switching-out point from 1980 models                                                |  | °C                        |  | 94 ÷ 98   |  |
| Temperature switch 91°C                                                             |                     | Switching-in point                                                                  |  | °C                        |  | 89 ÷ 93   |  |
|                                                                                     |                     | Switching-out point                                                                 |  | °C                        |  | no data   |  |
|                                                                                     |                     | Switching-in point from 1980 models                                                 |  | °C                        |  | no data   |  |
|                                                                                     |                     | Switching-out point from 1980 models                                                |  | °C                        |  | 89 ÷ 93   |  |
|                                                                                     |                     |                                                                                     |  |                           |  | 82 ÷ 86   |  |
| Brake pad wear sensor                                                               |                     |                                                                                     |  |                           |  |           |  |
| Warning position for pad thickness remainder from 1980 models                       |                     |                                                                                     |  |                           |  |           |  |
|                                                                                     |                     |                                                                                     |  | mind. mm                  |  | 1,5       |  |
|                                                                                     |                     |                                                                                     |  | max. mm                   |  | 3,5       |  |
| 61 66...Windshield Washer Pump                                                      |                     |                                                                                     |  |                           |  |           |  |
| Delivery pressure                                                                   |                     | at least bar                                                                        |  | 1,5                       |  |           |  |

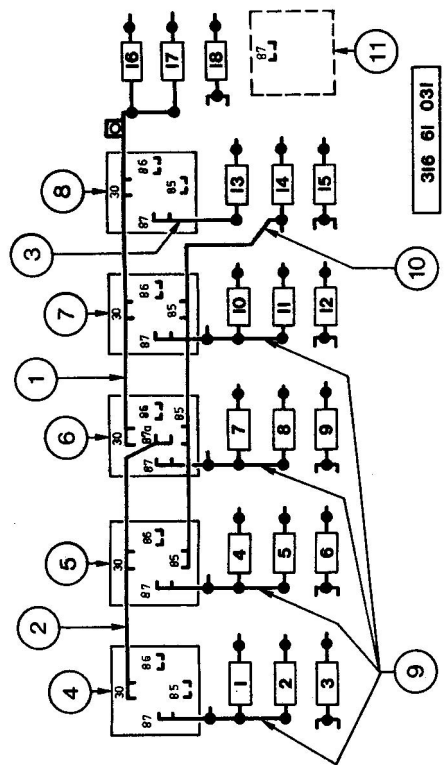


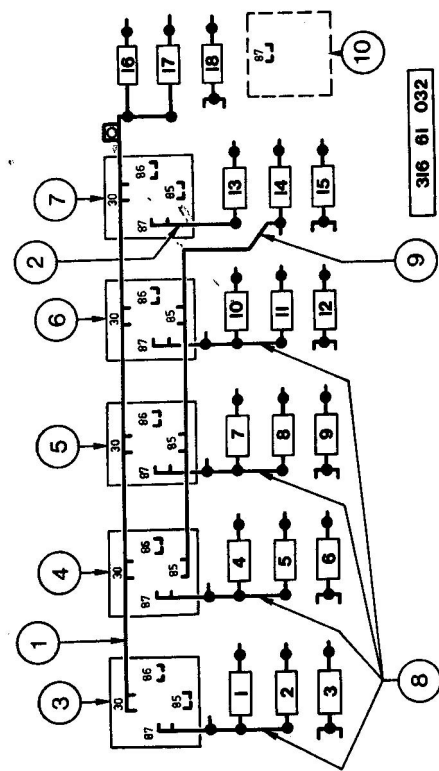




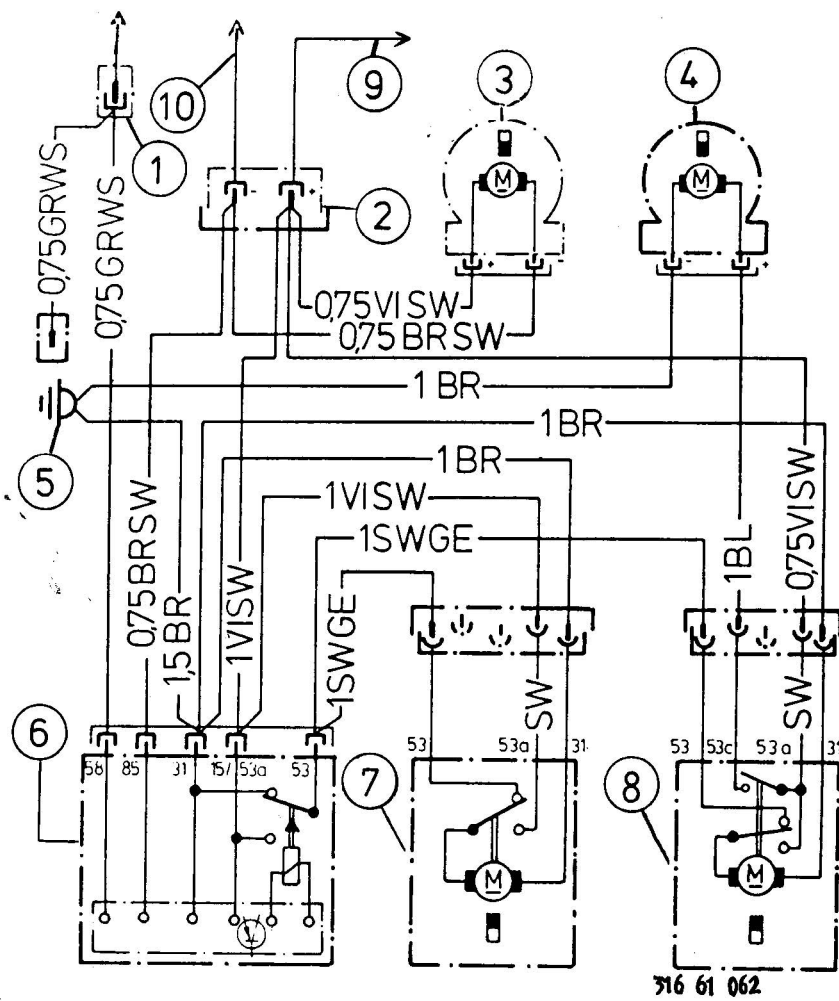


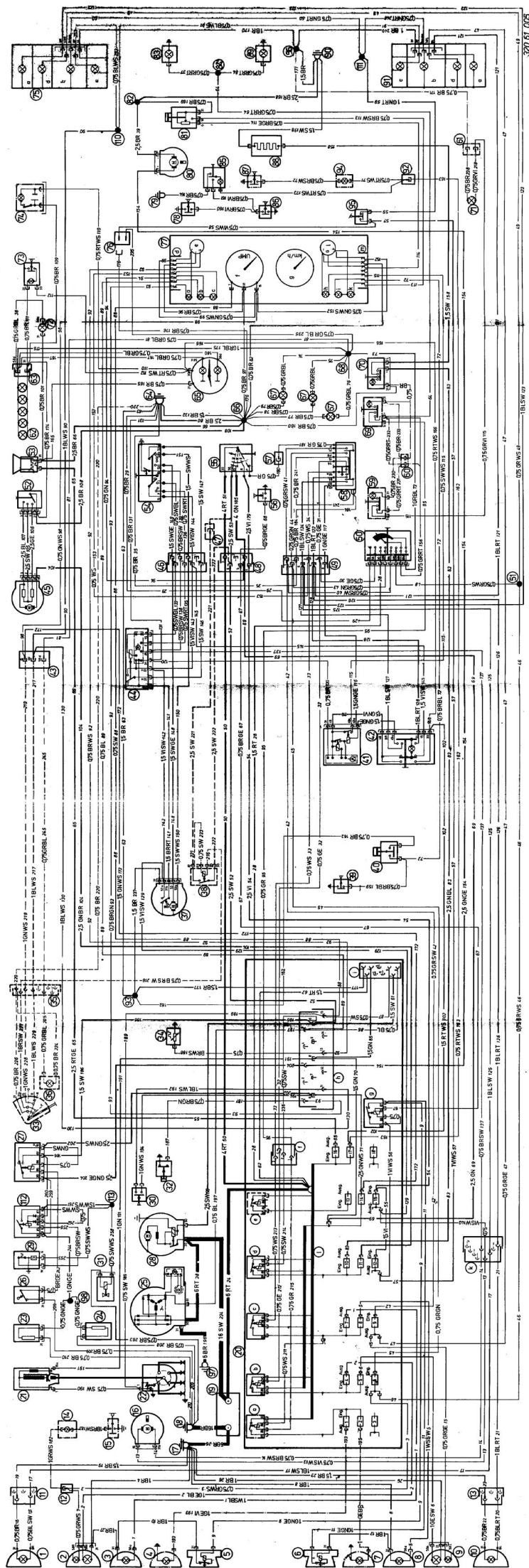


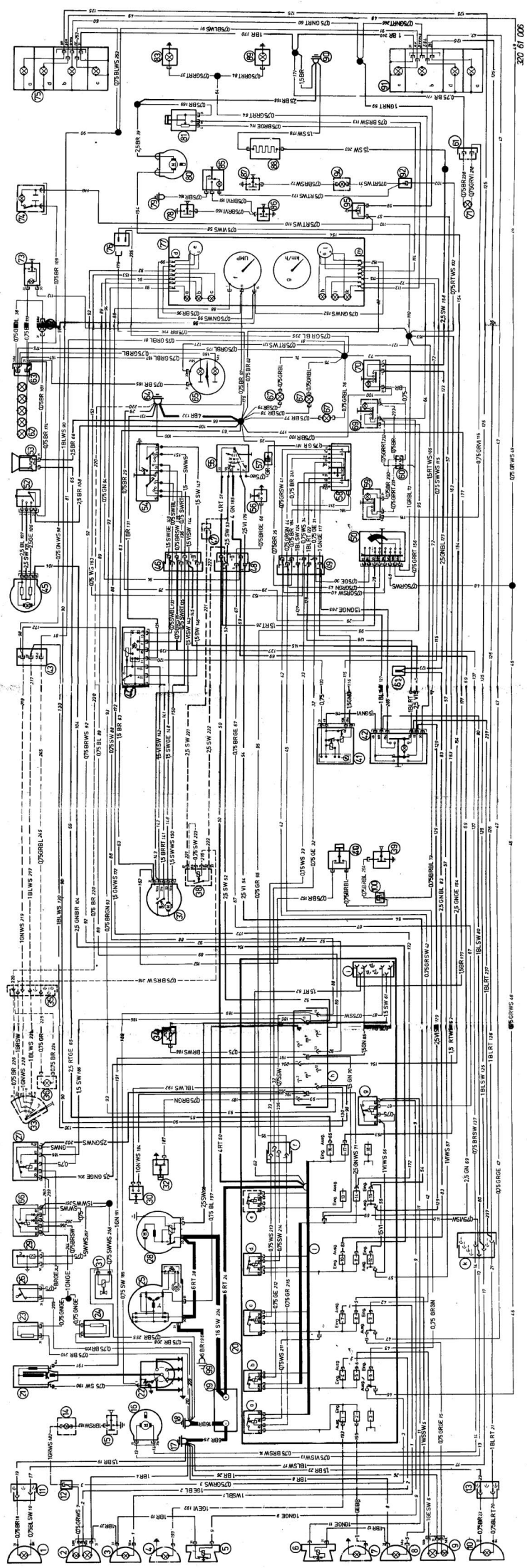




Schaltplan für Scheinwerfer-Reinigungsanlage BMW 316 – 320 i







300 10 025

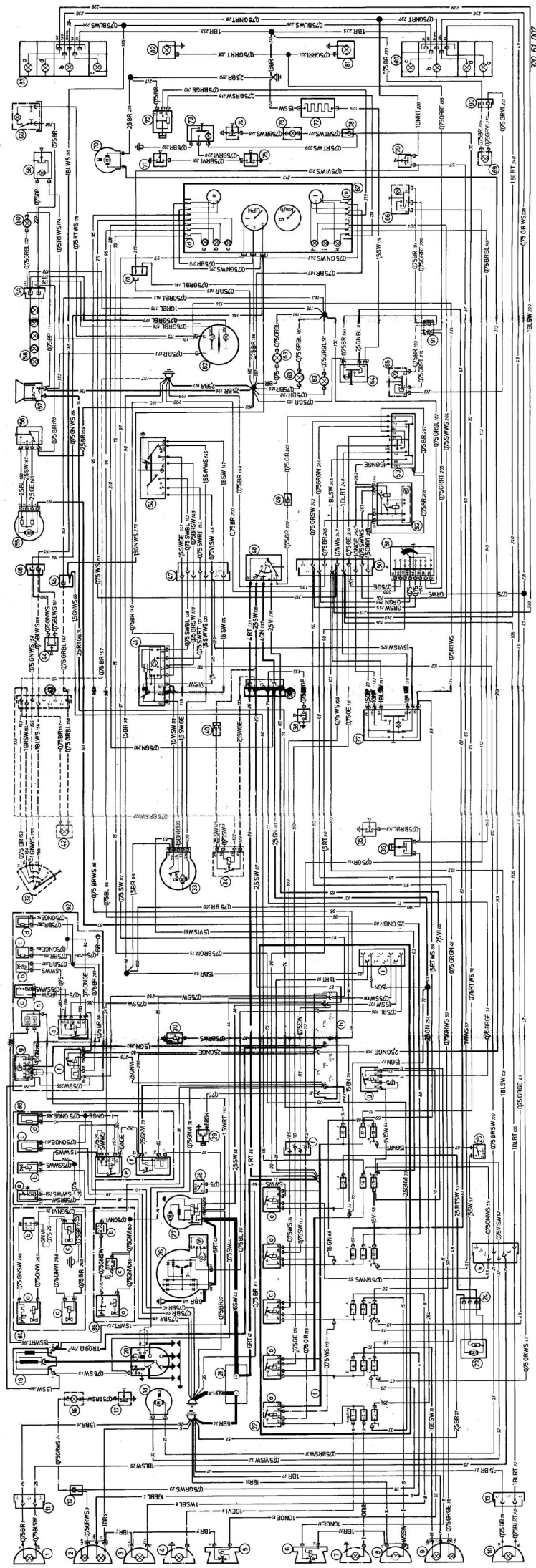
075 SW 50

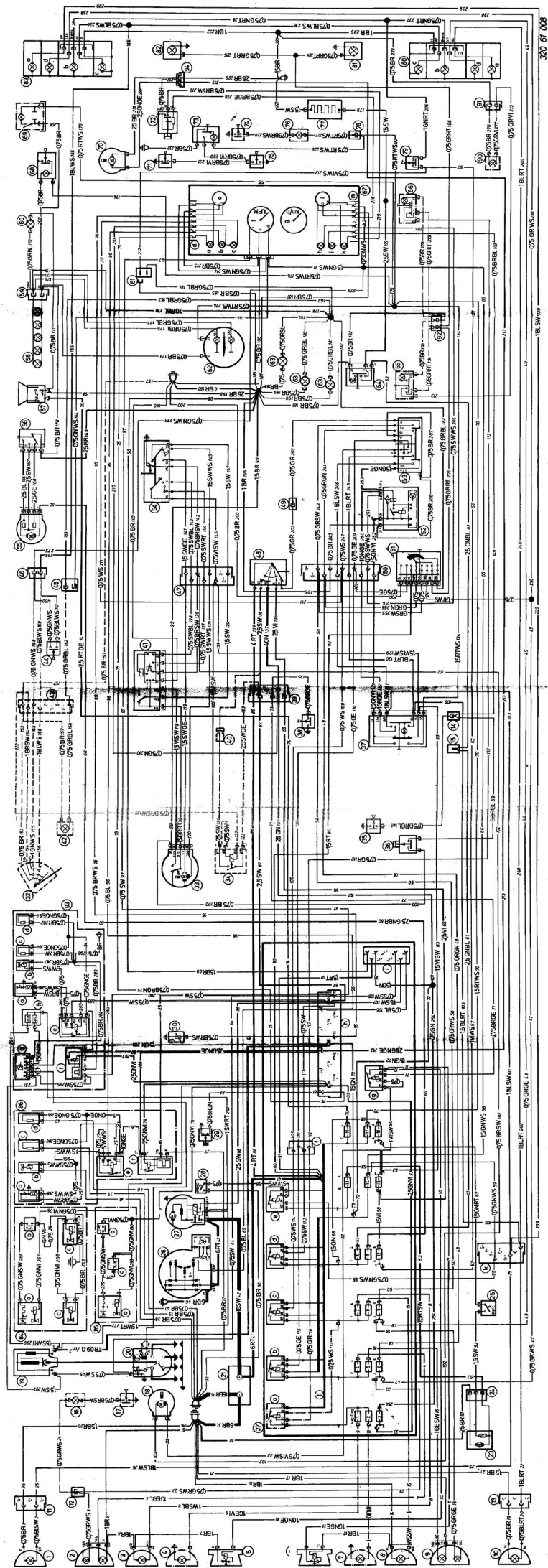
075 SW 44

075 SW 17

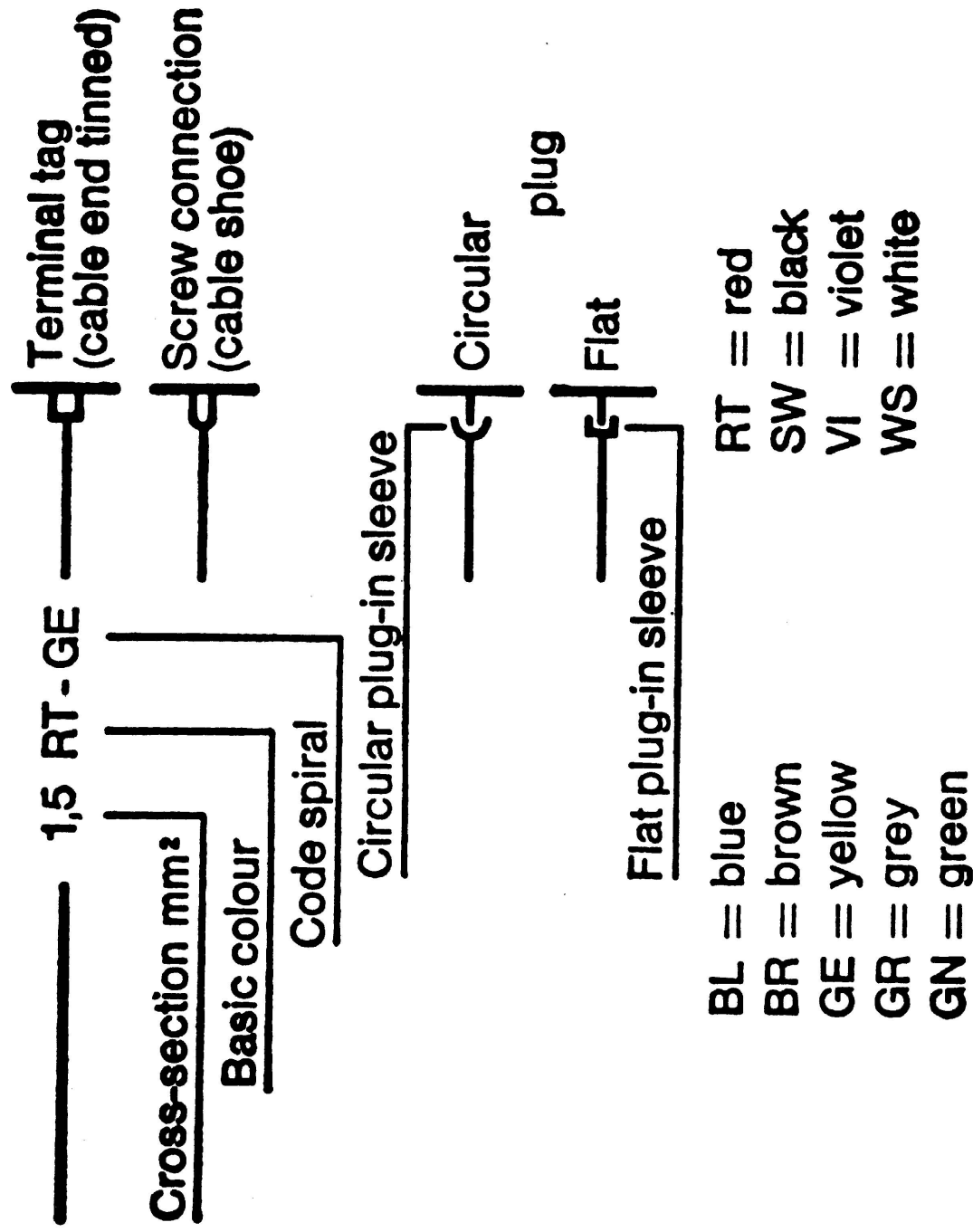
075 SW 17

075 SW 17





## Cable coding



Number following colour code = cable number