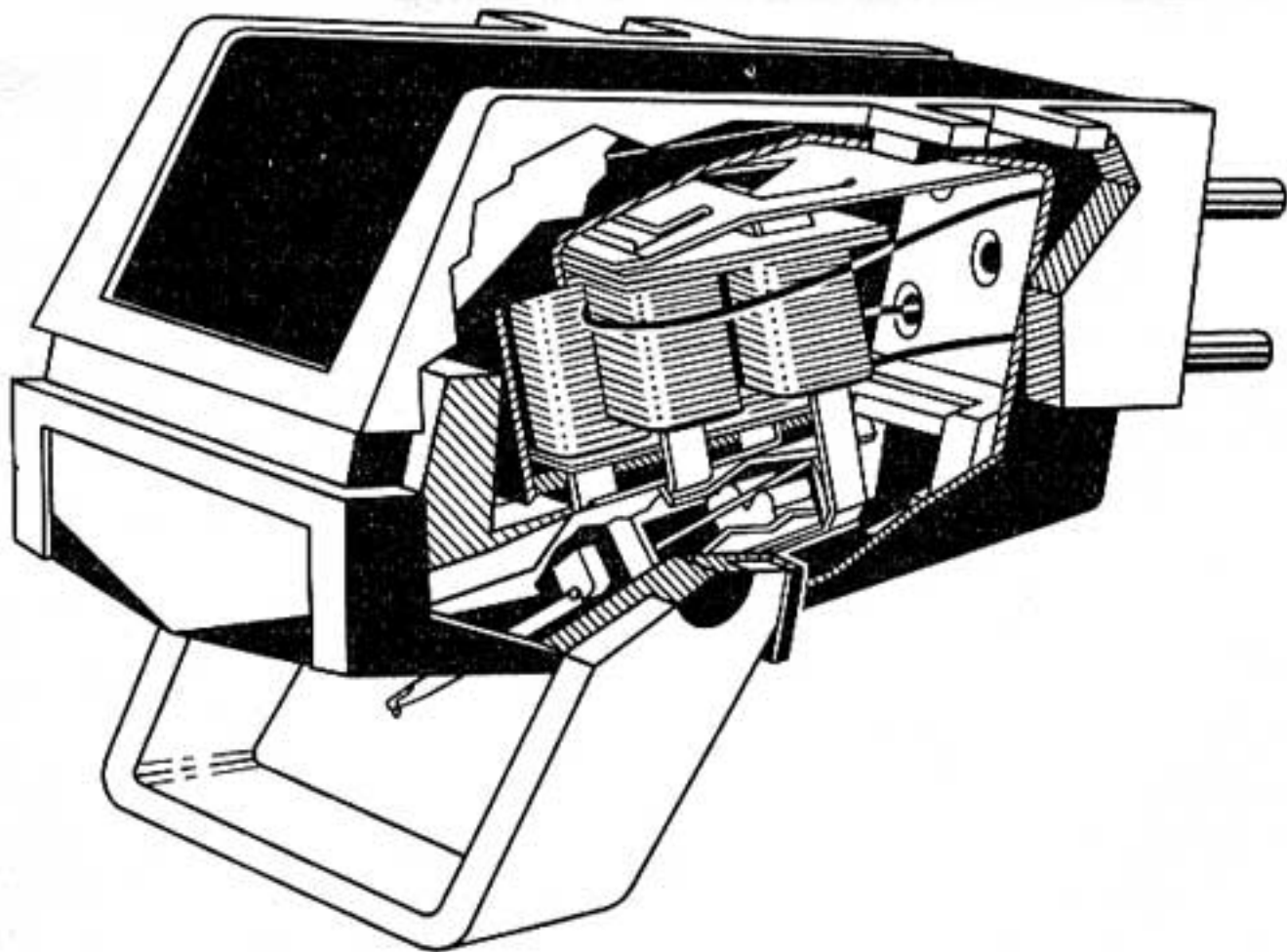


PHILIPS

SUPER M





SUPER **M**

INTRODUCTION

The heart of this SUPER M High Fidelity pick-up cartridge is the tiny magnet of high-energy SUPER M magnet steel. The properties of this perfectly stable material permit an optimal flux density of the magnet of 8500 gauss, a remarkably high

value resulting in a high sensitivity of 1.2 mV/cm/sec. Consequently a very favourable signal-to-noise ratio can be obtained with this cartridge.

The most advanced metallurgical techniques and the most modern elastomers enabled this cartridge to be made with extremely small and light components machined to micro-inch precision. The almost negligible mass of the moving parts and their perfectly controlled mechanical properties and low dynamic mass, which are first conditions for good tracking at low stylus forces, achieve a response

curve that extends from subsonic to ultrasonic with perfect regularity. Equally important is that the non-linear distortion has been brought down to the theoretical minimum. The SUPER M range comprises three models GP 400, GP 401 and GP 412 all based on the same construction principle.

The GP 400 cartridge has a spherical diamond stylus with a radius of $15\text{ }\mu\text{m}$ and the cartridges GP 412 and GP 401 are fitted with a bi-radial $7 \times 18\text{ }\mu\text{m}$ diamond stylus. The shape of this stylus substantially reduces tracking distortion to a very low

level, even of strong signals which have been recorded in the frequency range of maximum aural sensitivity. It also ensures contact at that part of the record groove wall where imperfections are least likely to be present.

The GP 412, by virtue of its low tracking force of 0.75 - 1.5 gf, its high compliance and further perfections is undoubtedly the top performer of the three and as such distinguishes itself as one of the most remarkable achievements in cartridge design so far available.

For every SUPER M High-Fidelity pick-up

cartridge, the response curve (equalised according to the IEC/RIAA/NARTB standards) is measured by means of a precision pen recorder on laboratory standard records to an accuracy of better than ± 0.3 dB. Only when the actual curve is within the permitted close tolerances does the cartridge pass the final inspection.

TECHNICAL DATA

Net weight	.	.	.	.	.	.	.	.	.
Mounting distance	.	.	.	.	.	.	.	.	.
Stylus (diamond)	.	.	.	.	.	.	.	.	.
Dynamic mass	.	.	.	.	.	.	.	.	.
Sensitivity (nom.)	.	.	.	.	.	.	.	.	.
(5 cm/sec)	.	.	.	.	.	.	.	.	.
Output asymmetry	.	.	.	.	.	.	.	.	.
Channel separation at 1000 Hz	.	.	.	.	.	.	.	.	.
Compliance lateral	.	.	.	.	.	.	.	.	.
vertical	.	.	.	.	.	.	.	.	.
Stylus force	.	.	.	.	.	.	.	.	.
FIM distortion (at recommended stylus force)	.	.	.	.	.	.	.	.	.
Frequency response	.	.	.	.	.	.	.	.	.
Resistance per channel	.	.	.	.	.	.	.	.	.
Inductance per channel	.	.	.	.	.	.	.	.	.
Recommended cable capacitance	.	.	.	.	.	.	.	.	.
Recommended load impedance	.	.	.	.	.	.	.	.	.

GP 400

7
Retma ½''
15
< 0.8
1.2
6
< 2
> 24
20
16
1.5 ... 3
1.0 (2 gf)
see diagram
1100
750
< 250
47

GP 401

7
Retma ½''
7 x 18
< 0.8
1.2
6
< 2
> 24
20
16
1.5 ... 3
0.8 (2 gf)
see diagram
1100
750
< 250
47

GP 412

7 g
Retma ½''
7 x 18 μm
< 0.6 mg
1.2 mV/cm/s
6 mV
< 1 dB
> 25 dB
 30×10^{-6} cm/dyne
 20×10^{-6} cm/dyne
0.75 ... 1.5 gf
0.7 % (1.2 gf)
see diagram
1100 Ohm
750 mH
< 250 pF
47 kOhm

APPLICATION

The recommended stylus forces for optimum results are listed under "Technical Data". Forces greater than the indicated "maximum" should not be used. SUPER M cartridges should only be installed in tone arms especially designed for low tracking forces and having low friction bearings.

Cleaning the stylus can be done with a small soft haired brush.

Although the stylus is subject to very little wear it is recommended to have it checked by your dealer at regular intervals.

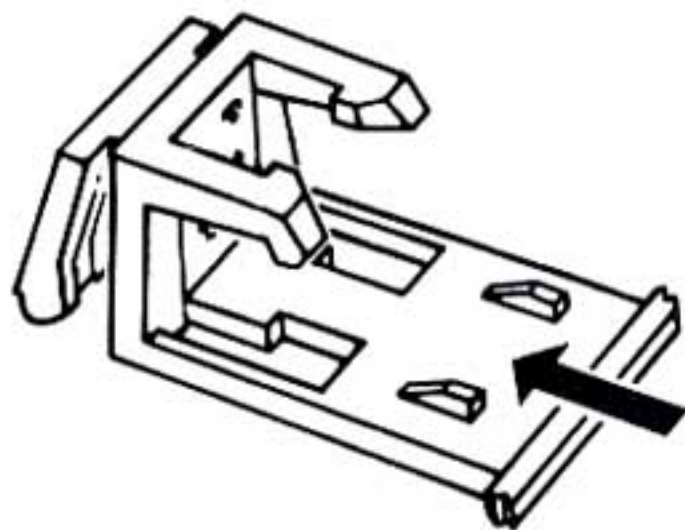
MOUNTING

First consult the directions for use supplied with the gramophone or tone arm. The SUPER M cartridges have standard $\frac{1}{2}$ " (12,7 mm) mounting centres. The hardware for mounting purposes can be found under the velvet insert in the box.

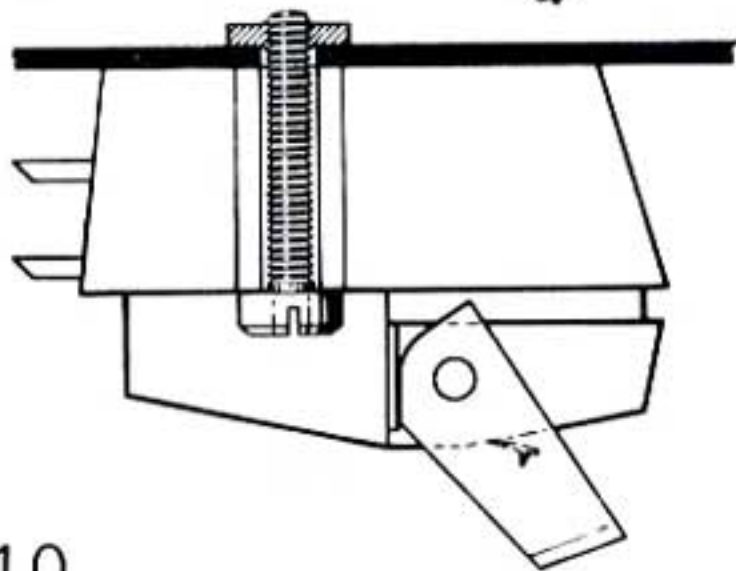
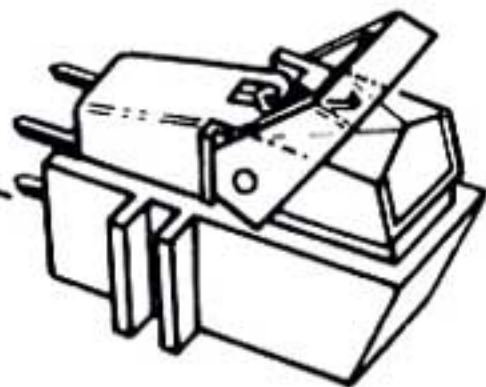
A) Philips Hifi record players with the new plug-in system.

All you have to do is to push the cartridge into the plug-in plate (fig. 1).

Slide plate + cartridge into headshell.



1



2

B) Other record players and tone arms

Mount the cartridge with two screws in the headshell or on the tone arm (fig. 2). (The round head screws are for headshells with special American 3 UNC x 1/2" threads.) (Observe the paragraphs about overhang and height adjustment in the operation instructions of the gramophone.)

CONNECTIONS

Caution: Do not make solder connections to cartridge terminals. All solder connec-

tions should be made to the terminal jacks provided. Do not solder to the jacks when they are on the cartridge terminals.

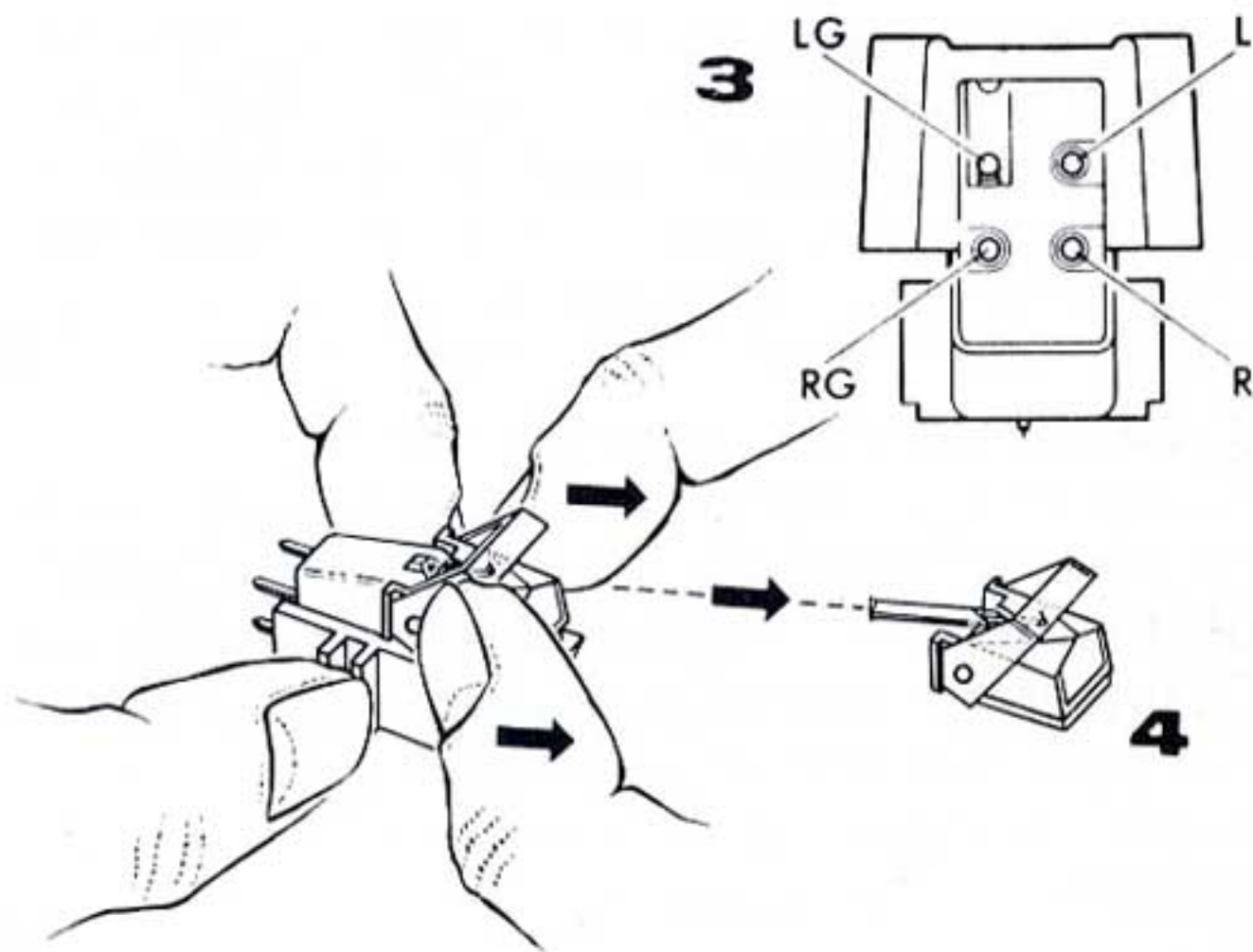
A) Philips Hifi record players with the new plug-in system.

The electrical connections are made automatically when the plate is slid into the headshell.

B) Other record players and tone arms (fig. 3).

4 Lead stereo connection:

Connect the signal lead of the righthand



channel to terminal R and the righthand shield or ground lead to terminal RG. Connect the signal lead of the lefthand channel to terminal L and the lefthand shield or ground lead to terminal LG.

3 Lead stereo connection:

Connect the signal lead of the righthand channel to terminal R and the signal lead of the lefthand channel to terminal L. Connect the shield or ground lead to both terminal RG and terminal LG.

Note: Colourcode according to IEC-EIA standards is as follows:

red : righthand channel signal (R)
white: lefthand channel signal (L)
green: righthand return (RG)
blue : lefthand return (LG)

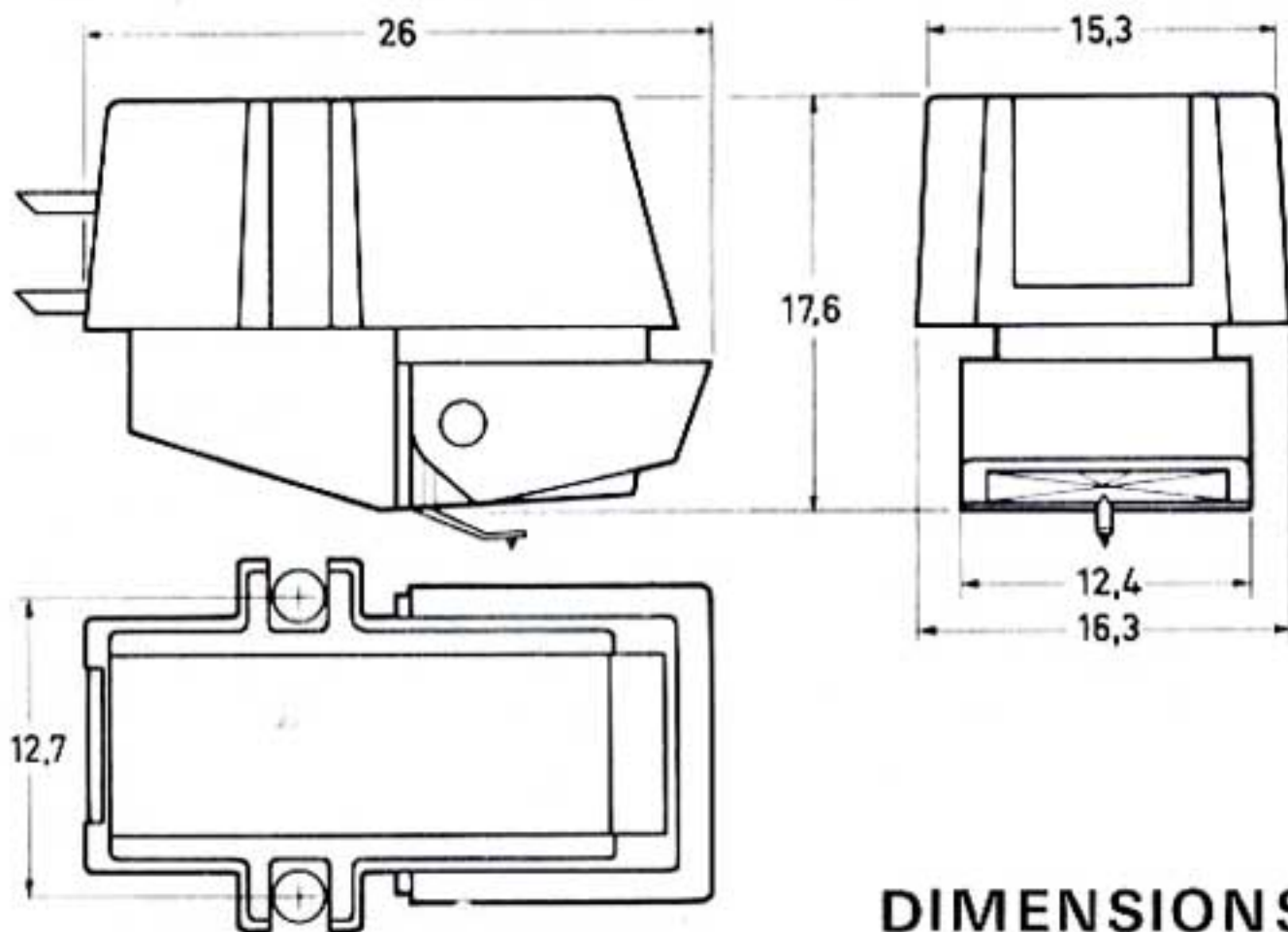
REPLACEMENT OF STYLUS-UNIT (fig. 4)

The codenumbers of the stylus units of
SUPER M cartridges are as follows

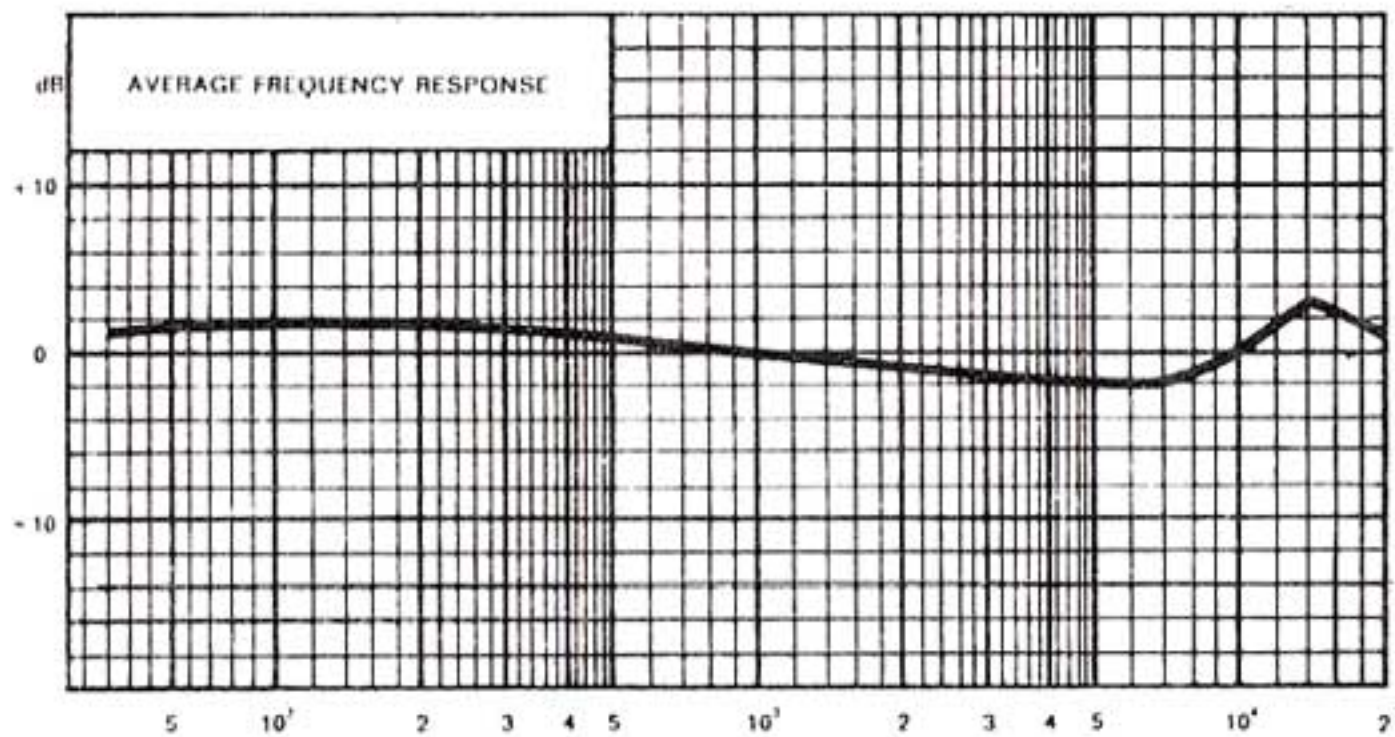
GP 400: 4822 251 30041

GP 401: 4822 251 30039

GP 412: 4822 251 30021



DIMENSIONS





3122 105 44783

CGH 1/172