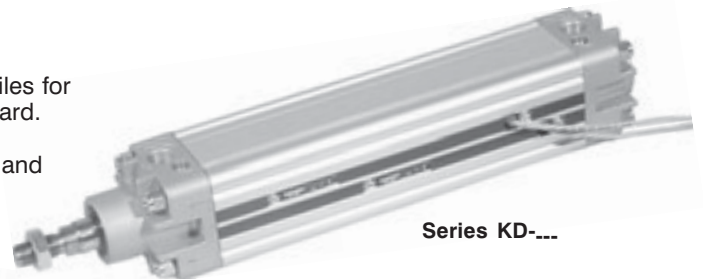
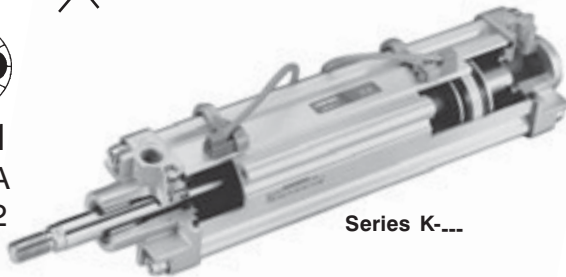


ISO/VDMA CYLINDERS \varnothing 32 ÷ 200 mm Series K, KD

Working pressure: 1,5 ÷ 10 bar
 Ambient temperature: -20 ÷ 80°C.
 Fluid: filtered air, with or without lubrication.
 Barrel: internal/external anodised aluminium and piston rod in chromium-plated steel standard
 Bores: Series KD 32 ÷ 125 aluminium barrel with profiles for flush-mounted sensors, magnetic version standard.
 Series K 32 ÷ 200 aluminium barrel;
 \varnothing 160 ÷ 200 mm with round aluminium barrel and steel tie-rods. magnetic version upon request.



6431
VDMA
24562



Flush-mounted magnetic sensors DF-... series for KD series.
 Wire protection strap magnetic sensor for KD series part no. DHF-002100.
 Magnetic sensor DH-... Series for K series (see page 2.27)

Upon request

- Magnetic rings in plastoferrite
- Locking unit \varnothing 32 ÷ 125 mm to be coupled **only** with chromium-plated steel rod (section High-Tech page 2.28)
- Slide unit \varnothing 32 ÷ 100 mm (section High-Tech page 2.26)
- Cylinders with rigid bushing, in tandem, multiple position and opposed version.

Construction details

Clean line barrel produced from extruded aluminium alloy with ribbed "anti-twist" design. Internal and external surfaces anodised to 15 micron.

Die-cast end-caps in aluminium alloy mounted on the barrel holes with self-tapping steel screws.

Pneumatic adjustable cushions provide efficient piston deceleration.

Synthetic rubber shock absorbers avoid mechanical stress and reduce machinery noise (lower than 50 dB).

Die-cast aluminum alloy piston and guide shoe in acetalic resin with a permanent plastoferrite magnetic ring (upon request for the magnetic version).

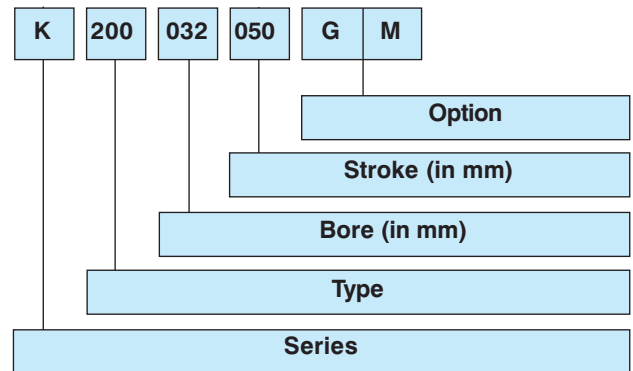
The piston and cushion seals are made of a wear-resistant nitrile rubber compound suitable for applications with or without lubrication. The double lip seal design automatically self-compensates against wear.

Hardened stainless steel rod (K/KD100 Series) or chromium-plated (K/KD200 Series) with 2 micron Ra.; supplied with nut.

UNIVER original self-lubricating and self-aligning piston rod bush. For special applications, rigid bushings are supplied upon request.

Cylinders \varnothing 125-160-200 with rigid piston rod bushing standard supplied.

Codification key



SERIES

KD = \varnothing 32 ÷ 125 mm magnetic version standard.

K = \varnothing 32 ÷ 200 mm magnetic version upon request.

TYPE

1 0 0	D.A. Stainless steel rod
1 0 1	D.A. Stainless steel through rod
1 6 0	S.A. Stainless steel retracted rod, max. stroke 50 mm
1 7 0	S.A. Stainless steel extended rod, max. stroke 50 mm
2 0 0	D.A. Chromium-plated rod
2 0 1	D.A. Chromium-plated through rod
2 6 0	S.A. Chromium-plated retracted rod, max stroke 50 mm
2 7 0	S.A. Chromium-plated extended rod, max stroke 50 mm

BORE

\varnothing 032 - 040 - 050 - 063 - 080 - 0100 - 0125 - 0160 - 0200

STROKE

Standard strokes in mm: 0025 - 0050 - 0075 - 0080 - 0100
 0125 - 0150 - 0160 - 0175 - 0200 - 0250 - 0300 - 0320 - 0350
 0400 - 0450 - 0500 - 0600 - 0700 - 0800 - 0900 - 1000

OPTION

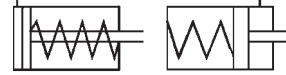
F = For use with locking unit with "reduced dimensions"

G = For use with locking unit with ISO dimensions

M = Magnetic version

Cyl. Ø	Resultant forces in N at different working pressures (bar). 1 bar = 0,1 MPa							Cushion	
	Working surface area (mm ²)	Working pressure (bar)					length (mm)	Max kinetic energy absorption (J)	
		2	4	6	8	10			
32	thrust traction	804 691	161 138	322 276	482 414	643 553	804 691	18	1,8
40	thrust traction	1256 1056	251 211	502 422	754 633	1005 844	1256 1055	24	2,5
50	thrust traction	1962 1649	393 330	785 660	1178 990	1570 1320	1963 1650	24	4,5
63	thrust traction	3116 2802	623 560	1246 1120	1869 1680	2493 2240	3116 2800	30	8
80	thrust traction	5024 4533	1005 907	2010 1814	3014 2722	4019 3629	5024 4536	30	12
100	thrust traction	7850 7359	1570 1472	3140 2944	4710 4416	6280 5888	7850 7360	35	21
125	thrust traction	12266 11462	2453 2294	4906 4588	7359 6882	9812 9176	12266 11470	35	36
160	thrust traction	20096 18840	4019 3770	8038 7540	12058 11310	16077 15080	20096 18850	45	52
200	thrust traction	31400 30144	6280 6029	12560 12058	18840 18086	25120 24115	31400 30144	45	95

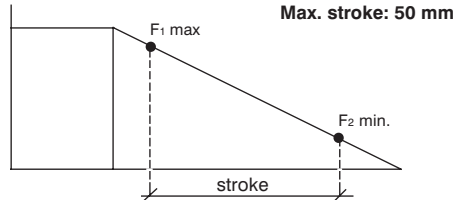
Single-acting cylinders



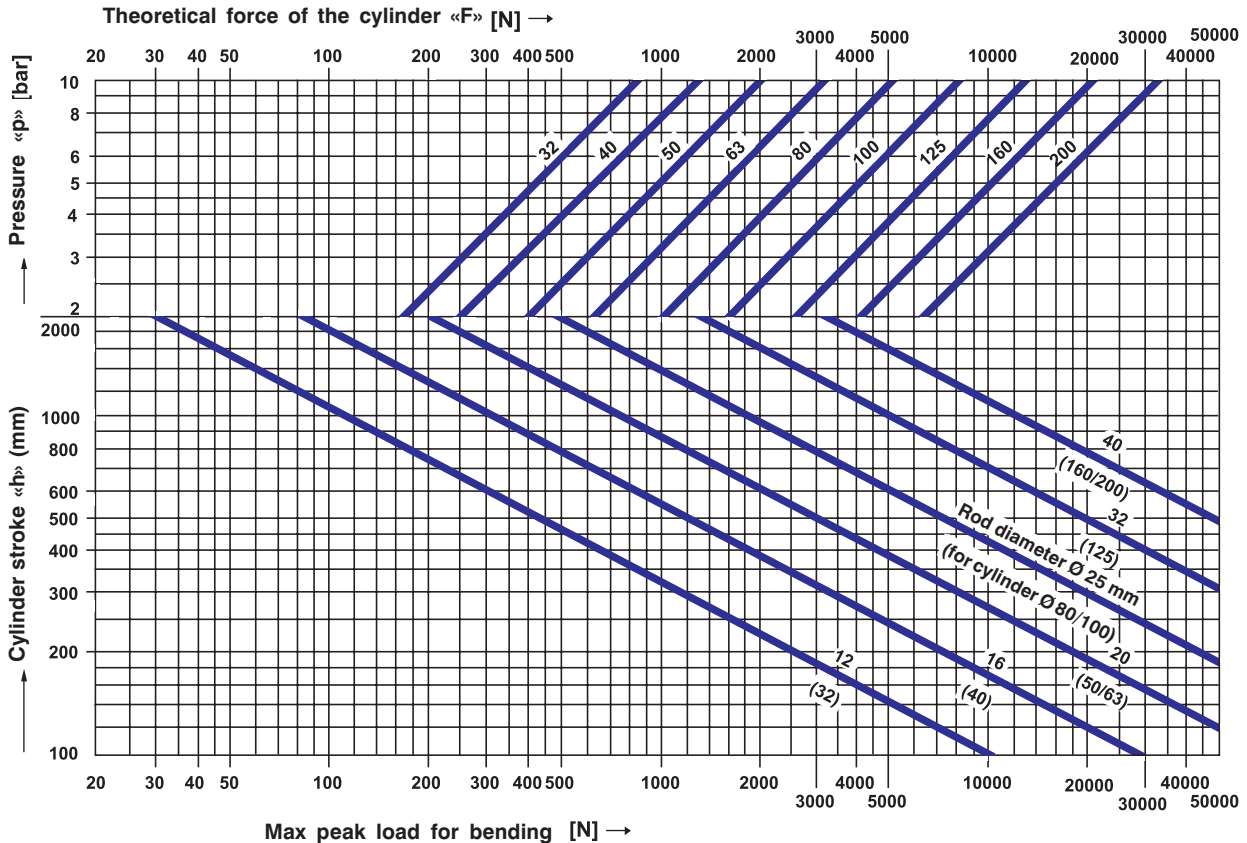
Theoretical forces (N) for return stroke

Cyl. Ø	F ₁ (N) Max spring force at 0 stroke	F ₂ (N) Minimum spring force at stroke 50
32	52	28
40	70	42,5
50	98	48
63	98	48
80	140	80
100	140	80
125	235	175

For through rod cylinders the theoretical force is equal in both directions and its value is the one given "in traction" as per table. The values given are theoretical and in practice must take account of weight and friction of the moving element and may be reduced by (±-10%)



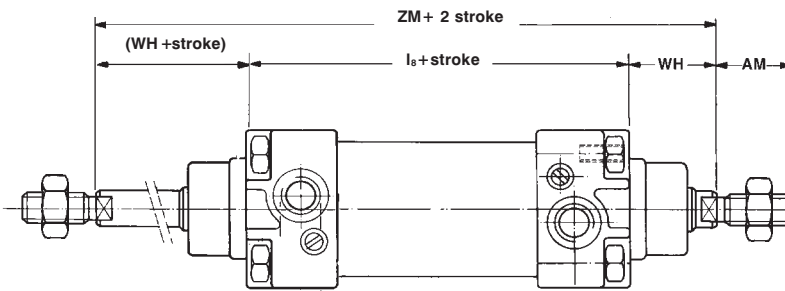
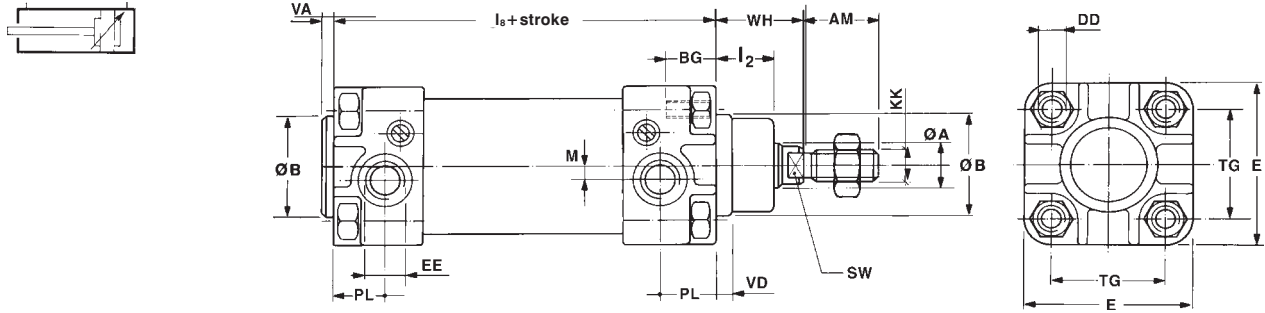
Graph showing theoretical forces/pressures and acceptable strokes depending on maximum peak load



Technical modifications keep in reserve !

(2006/06)

Cylinder with pneumatic cushioning Ø 32 ÷ 200



Stroke tolerances

Cyl. Ø	Stroke (mm)	Tolerances on strokes (mm)
32	up to 500	+2 0
40	from 501 to 1.250	+3,2 0
50		+2,5 0
63	up to 500	+4 0
80	from 501 to 1.250	+4 0
100		+4 0
125	up to 500	+4 0
160	from 501 to 1.250	+5 0
200		+5 0

Cyl. Ø	A	AM (Note 1)	B e11	BG	DD	E	EE (Note 2)	I ₂	I ₀		KK (Note 1)	M	PL	SW	TG		VD	VA	WH	ZM
									Nom.	Toll.					Nom.	Toll.				
32	12	22	30	14	M6	48	G 1/8	16	94	±0,4	M10 x 1,25	4,5	15	10	32,5	±0,5	5	3	26	146
40	16	24	35	14	M6	54	G 1/4	20	105	±0,7	M12 x 1,25	5	18	13	38	±0,5	6	4	30	165
50	20	32	40	16	M8	67	G 1/4	26	106	±0,7	M16 x 1,5	6	18	17	46,5	±0,6	6	4	37	180
63	20	32	45	16	M8	78	G 3/8	26	121	±0,8	M16 x 1,5	8	21,5	17	56,5	±0,7	6	4	37	195
80	25	40	45	16	M10	97	G 3/8	32	128	±0,8	M20 x 1,5	7,5	21,5	22	72	±0,7	8	5	46	220
100	25	40	55	16	M10	115	G 1/2	35	138	±1	M20 x 1,5	9	21,5	22	89	±0,7	8	6	51	240
125	32	54	60	20	M12	140	G 1/2	45	160	±1	M27 x 2	11	24,5	27	110	±1,1	10	7	65	290
160*	40	72	65	25	M16	180	G 3/4	50	180	±1,1	M36 x 2	14	29	36	140	±1,1	10	6	80	340
200*	40	72	75	25	M16	220	G 3/4	60	180	±1,1	M36 x 2	14	29	36	175	±1,1	12	6	95	370

NOTE 1: "KK" and "AM" dimensions correspond to ISO 4359 "long" type
 ■ Dimensions to specifications, upon request
 * Ø 160 and Ø 200 cyl., execution with aluminum tube and steel tie-rods

NOTE 2: "EE" dimensions are in inches and are chosen according to ISO 228/1 standard

K series cylinder mass

Cyl. Ø	Cyl. stroke 0 (kg)	Rate incr. stroke=0 (g)	Moving element stroke=0 (kg)	Rate incr. stroke=0 (g)	Cylinder stroke 0 (kg)	Rate incr. stroke=0 (g)	Moving element stroke=0 (kg)	Rate incr. stroke=0 (g)
32	0,51	2,35	0,13	0,9	0,64	3,24	0,20	1,8
40	0,77	3,24	0,24	1,6	0,92	4,80	0,37	3,2
50	1,21	4,75	0,43	2,5	1,51	7,22	0,64	5,0
63	1,74	5,78	0,47	2,5	2,03	8,25	0,75	5,0
80	2,74	8,64	0,95	3,9	3,26	12,50	1,37	7,8
100	3,78	10,4	1,18	3,9	4,38	14,30	1,60	7,8
125	6,59	14,8	2,18	6,3	7,80	21,10	3,20	12,6
160	14,60	16,9	4,02	9,9	16,85	26,80	5,94	19,8
200	16,50	18,5	4,78	9,9	19,90	28,40	6,80	19,8

KD series cylinder mass

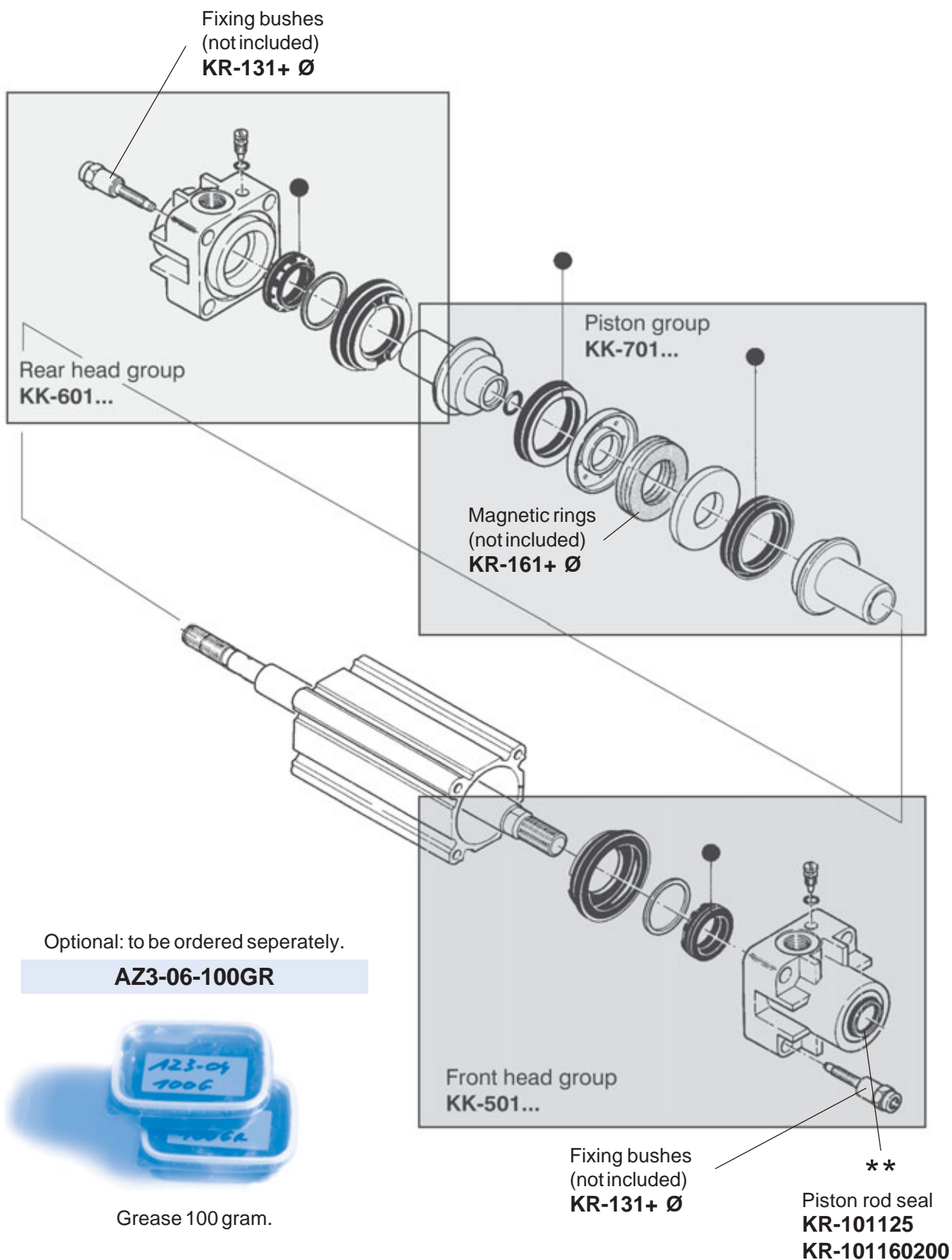
Cyl. Ø	Cyl. stroke 0 (kg)	Rate incr. stroke=0 (g)	Moving element stroke=0 (kg)	Rate incr. stroke=0 (g)	Cylinder stroke 0 (kg)	Rate incr. stroke=0 (g)	Moving element stroke=0 (kg)	Rate incr. stroke=0 (g)
32	0,53	2,8	0,13	0,9	0,66	3,7	0,20	1,8
40	0,80	4,0	0,24	1,6	0,95	5,5	0,37	3,2
50	1,27	6,0	0,43	2,5	1,57	8,5	0,64	4,9
63	1,76	6,2	0,47	2,5	2,05	8,7	0,75	4,9
80	2,86	10,8	0,95	3,9	3,38	14,7	1,37	7,7
100	3,95	13,4	1,18	3,9	4,55	17,3	1,60	7,7
125	6,87	18,6	2,18	6,3	8,08	24,9	3,20	12,6

Technical modifications keep in reserve !

(2007/01)

Spare parts kit

- Seal kit **KG-01... + Ø** (with double lipseal, from 32 ÷ 100, included parts are marked with a ●)
- Seal kit **KG-01... + Ø** (with double lipseal, from 125 ÷ 200, included parts are marked with a ● and **)
- Seal kit **KG-01... + Ø/D** (identical as above but with extra single flat seal for N-version cylinder)



* Heads are supplied assembled and tested.

Technical modifications keep in reserve !

(2008/01)