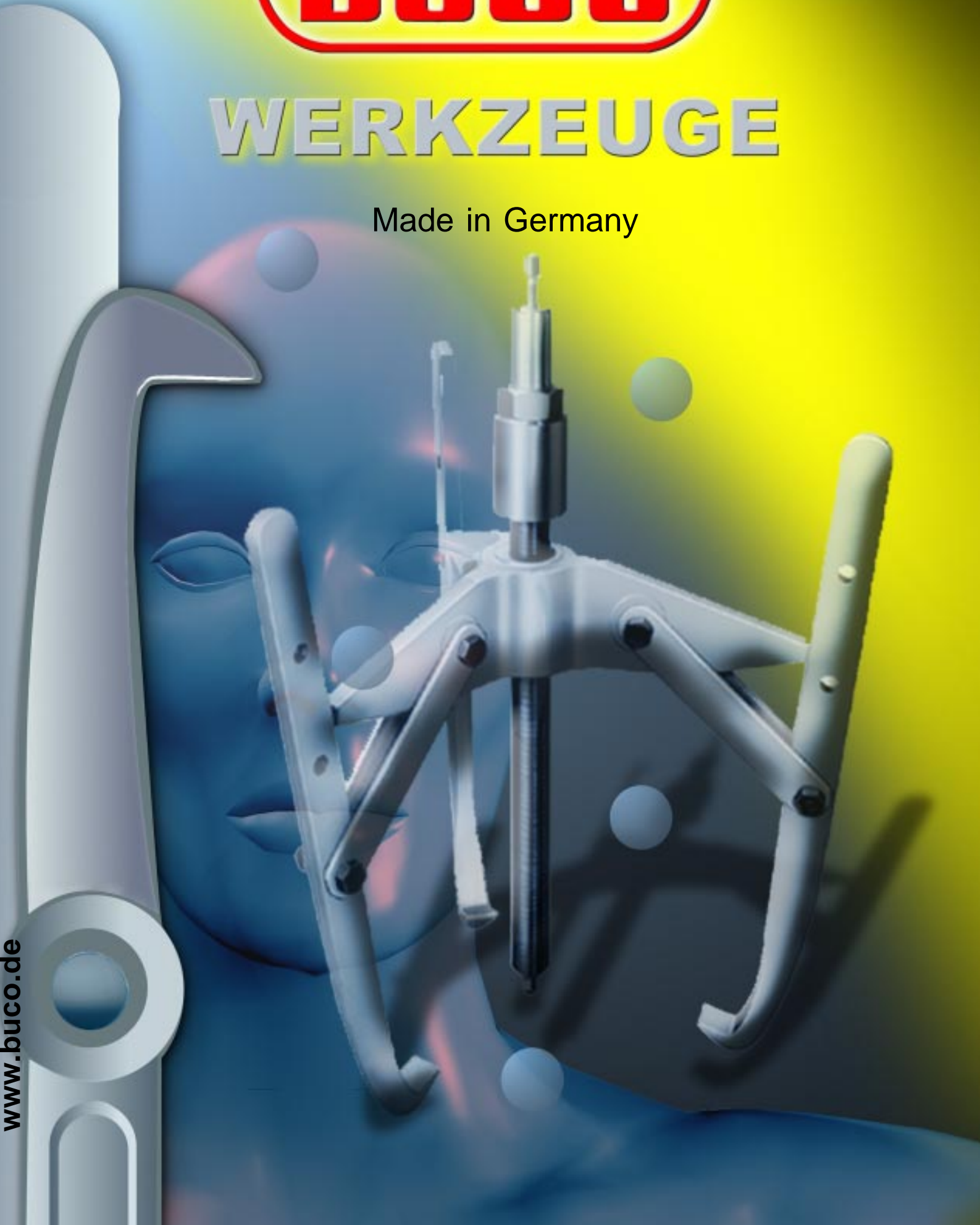


BUCO

WERKZEUGE

Made in Germany





- Pullers
- Puller Units
- Hydraulic Puller Sets
- Track Alignment Gauges
- Towing Rods

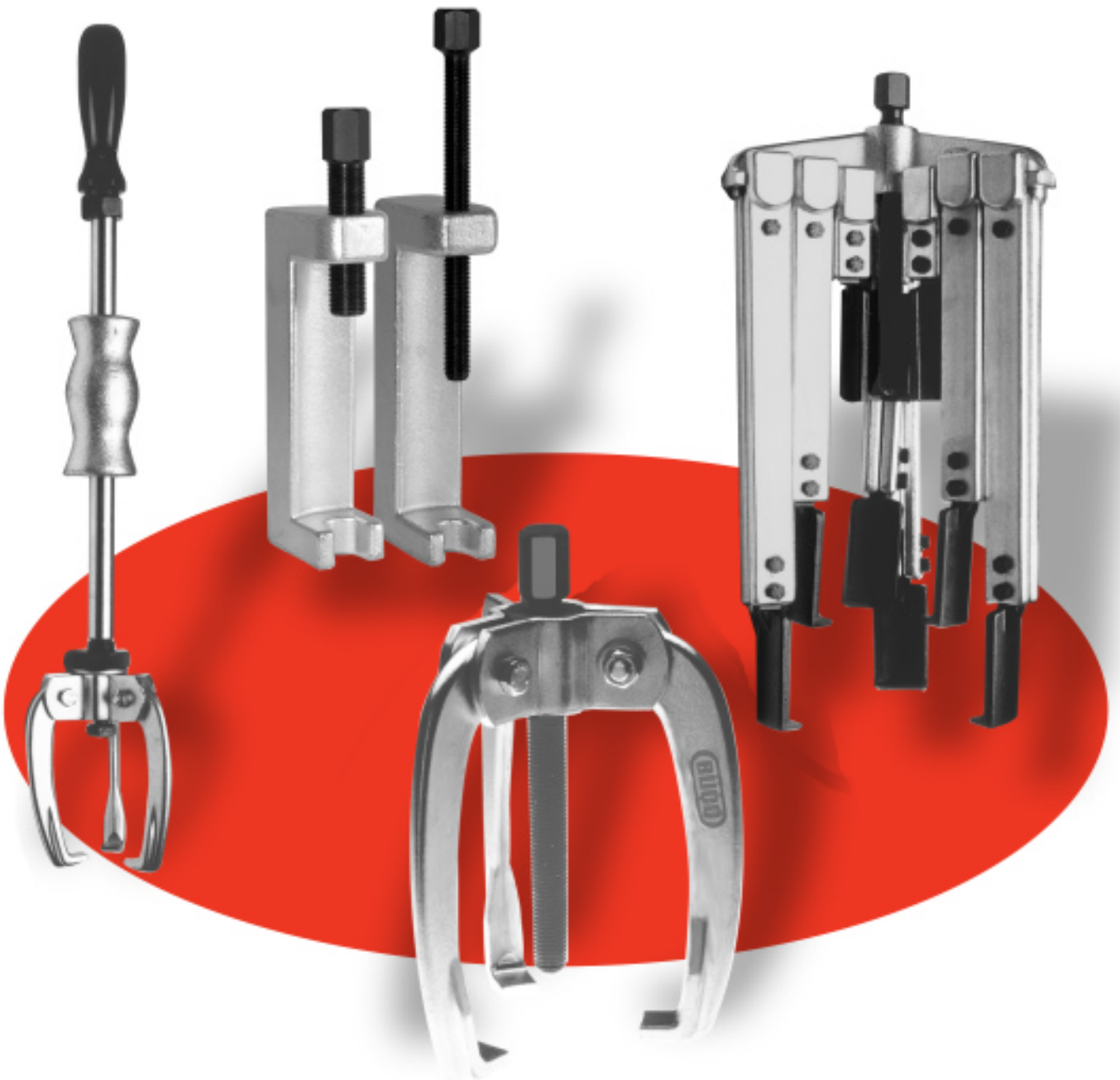
Use Areas:

- Automotive Maintenance
- Electrical Industries
- Mecanical Engineering
- Industry
- Motorbike Garage
- Automobile Manufacture
- Mining
- Railways

The experience we have been accumulating since decades is your guarantee for constant high quality and durability of our products - **Made in Germany.**

Please notice the safety advice on the pages No. 52 and No. 70 of this catalogue before using puller tools.

News

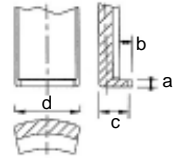





Universal Puller Set

K16/17



The equipment of this light, handy plastic case serves different kinds of removal work in workshops, etc. The strong pulling legs with their relatively thin claws are particularly well suited for narrow spaces.



Art-No.	contents	 mm	 mm	claw mm a	 kg
K16/17	1 beam 2-arm	80			1,9
	1 beam 3-arm	80			
	3 pulling legs		100	3,6	
	1 spindle				




Universal Puller Sets

S16



With pulling legs for narrow spaces in different lengths

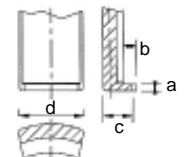
2-arm

Art-No.	 mm	 mm	pulling legs No.	claw mm a	 kg
S 16/0A	130	100	16/A1	2	3,3
		200	16/A1-200	2	
		250	16/A1-250	2	
S 16/2AS	200	150	16/B1	5	5,3
		300	16/B1-300	5	




S17



Particularly well suited to be hung up on workshop walls. All required clamping depths available at any time.






3-arm

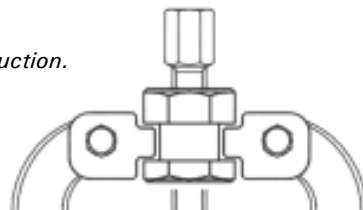
Art-No.	 mm	 mm	pulling legs No.	claw mm a	 kg
S 17/0A	130	100	17/A1	2	4,7
		200	17/A1-200	2	
		250	17/A1-250	2	
S 17/2AS	200	150	17/B1	5	7,1
		300	17/B1-300	5	




Pullers

Handy little Pullers with self-centering function and automatically adjusting pulling legs. The higher the increasing pressure of the spindle, the firmer the clasp pressure of the pulling legs.

	Art-No.	 mm	 mm	 kg
2-arm	92/1	10 - 60	45	0,25
	92/2	10 - 70	65	0,27
	92/3	10 - 100	80	0,56
3-arm	93/1	10 - 60	45	0,30
	93/2	10 - 70	65	0,34
	93/3	10 - 100	80	0,69

Schematic view of the puller - construction.



	Art-No.	 mm	 mm	 kg
2-arm	94/1	10 - 100	80	0,6
	94/2	10 - 120	120	1,1
	94/3	20 - 160	160	1,9
	94/4	20 - 220	200	3,2
3-arm	95/1	10 - 100	80	0,8
	95/2	10 - 120	120	1,4
	95/3	20 - 160	160	2,3
	95/4	20 - 220	200	4,0

Strong pullers to remove firmly sitting ball bearings, gear wheels, belt pulleys, etc. Self-centering and automatically adjusting pulling legs. Rising spindle pressure automatically increases the clasp pressure of the pulling legs.

92



93



94



95






97/S






Three-Arm-Puller with Slide Hammer

This combination of slide hammer and puller with clamping nut facilitates fast and precise work. The clamping nut centers the pulling legs evenly and exerts additional pressure.

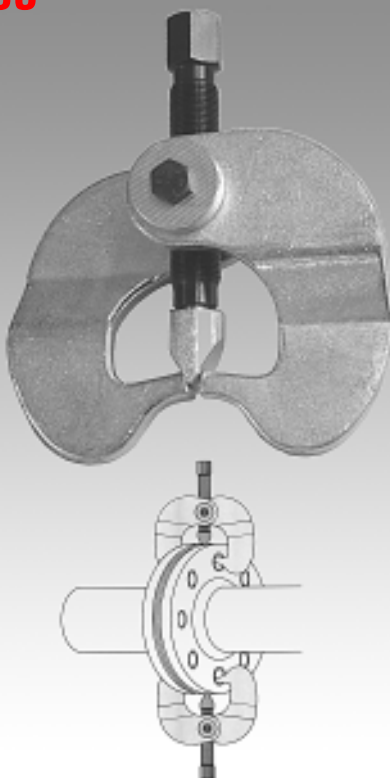
complete

Art-No.	 mm	 mm	including slide hammer No.	 kg
97/S1	10 - 60	45	54/2	1,60
97/S2	15 - 70	65	54/2	1,65
97/S3	20 - 100	85	54/2	1,95

pullers without slide hammer

Art-No.	 mm	 mm		 kg
97/1	10 - 60	45	puller with	0,36
97/2	15 - 70	65	clamping	0,40
97/3	20 - 100	85	screw only	0,68


99




Flange Spreaders

These flange spreaders allow for fast and safe detachment of the DIN flange on pipings, e.g. when defective seals need to be replaced.

complete

Art-No.	nominal width Ø mm	for flanges with bolts		 kg
99/S1	80 - 250	M16 - M24	1 pair	5,4

parts

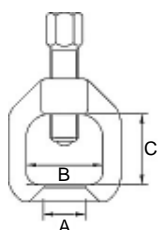
Art-No.		 kg
99/1	1 piece of flange spreader	2,7
99/1H	2 pieces of claws	1,7
99/1B	1 piece of spindle with wedge - M24 x 1,5	0,54

Attention:

Only to be used in pairs (see figure)! Remove two opposing screws, hook in the flange spreader, tighten the spindle, remove the remaining screws, and turn spindles alternately until the gap is large enough to implement the maintenance work. By alternately turning back the spindles the two flanges are joined again.

Ball Joint Pullers

Particularly well suited for narrow spaces



Art-No.	opening A mm	height C mm	for motor vehicles	kg
181/1	23	55	almost all cars	0,76
181/1B	24	45	BMW series 3	0,39
181/2	28	55	Audi, VW	0,75
181/3	34	63	transporters	0,89



Ball Joint Puller Set

in light case

Art- No.	contents	kg
K181	puller No. 181/1 puller No. 181/2 puller No. 181/3	2,7

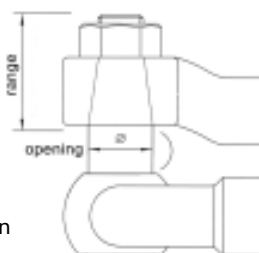


Ball Joint Pullers

For all kinds of automobiles - small passenger cars to heavy trucks. The pullers No. 185/1P and No. 185/2P are particularly well suited for aluminum chassis like those used by AUDI, BMW, and Porsche.

Art-No.	opening A mm	range C mm	for passenger-car	kg
185/1	20	50	from	1,3
185/1P	24	50 max	passenger-cars to	1,3
185/2	20	80 max		1,6
185/2P	24	60 - 80	transporters	1,6
185/4	27-36	90 max	medium trucks	3,0
185/5	35-45	115 max	heavy trucks	6,0

schematic view of a ball joint



In types 185/4 and 185/5 the spindle is faced by an adjustable anvil. Spindle and anvil may also be changed.



HY 185



HS 185/4

HY 185/5

Hydraulic Ball Joint Pullers

These pullers have been designed for work on light to heavy trucks and busses. Disassembly is dramatically facilitated by the hydraulic spindle and/or the hydraulic block in-between.

Art-No.	opening A mm	range C max. mm	capacity max. ton	kind of hydraulic	kg
HS 185/4	27 - 36	90	10	spindle	5,1
HY 185/4	27 - 36	90	10	cylinder block	5,0
HS 185/5	35 - 45	115	10	spindle	7,5
HY 185/5	35 - 45	115	10	cylinder block	7,1
HY 185/5-2	35 - 45	115	20	cylinder block	7,7
HP/1	Hydraulic Hand Pump for No. HY 185/4, HY 185/5, HY 185/5-2 connection thread: 3/8" - 18 NPT				6,9
HZB/10	Hydraulic Cylinder Block, single for No. 185/4, 185/5, HY 185/4, HY 185/5 10 to, stroke: 11mm, height: 45 mm, connecting thread: 3/8" - 18 NPT				1,6
HZB/20	Hydraulic Cylinder Block, single for No. 185/5, HY 185/5-2 20 to, stroke: 11mm, height: 51mm, connection thread: 3/8" - 18 NPT				2,2

K 189



Belt Pulley Puller Set


in light case

Art-No.	mm	mm	kg
K 189	195	88	2,3
contents			
1 beam - working range 132mm			
1 beam - working range 132-195mm			
1 pair of pulling legs - length 68mm			
1 pair of extensions - length 88mm			
1 spindle with exchangeable pressure pad			
1 pressure pad 12mm			
1 pressure pad 37mm			
2 pairs of screws for the attachment of pulling legs and/or belt pulleys with boltholes			

To pull all kinds of common belt pulleys, e.g. V-belt pulley at motor cars etc.

Screw Pusher Set

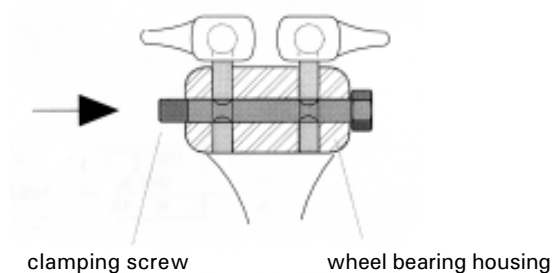
For loosening and extraction of firmly sitting clamping screws, which fix the link pins in the wheel bearing housing of four-steering wheel front axles; e.g. of VOLKSWAGEN Passat + Synchro, AUDI A4, A6, A8 including Quattro, SKODA Superb.

Art-No.	opening A mm	range B mm	application	 kg
188/1	SW 16	110	loosener	1,0
188/2	Ø 12	90	pusher	0,6

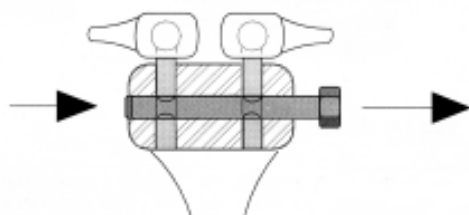
How it works: There is a pair of ball joints on the right and left side of the front axle. With their cylindrical, notched link pin they stick in the wheel bearing housing. The link pins don't have a conical form as usual, but are cylindrical. The areas which come into contact with the clamping screw show indentations which serve fixing.

Clamping screw and link pin become wedged by the driving movements. Because of that the clamping screw cannot be dismantled by hand. It has to be loosened by a robust loosener - No. 188/1 - first. After that it can easily be pressed out of the wheel bearing housing with the pusher No. 188/2.

1. Loosen



2. Extract



General View

10, HY10	13, HY13	10/K	10/ST 16/ST	HS	15	16, HY16	
Pages 6	7	9	10 11	10	11	12	
16/ 17/	16/0	16/ 17/	17	17, HY17	17/0		
Pages 12 15	13,14	13,14 16, 17	15	15	16, 17		
19, HY19	20	21	K20 - K22	22, HY22	23, HY23		
Pages 18	19	19	19, 21	20	20		
24 - HY27	28	29	30 - HY31	36, 37	38, 38SP		
Pages 21	22	22	23	23	24		
44/48	44/K	50, 50/N	50/K - 52/K	53	53/K	54	55
Pages 25	27	27	28	29	29	30	31
56	57	58	60	B10, HY B10	K60 - K61	62	
Pages 32	32	32	33	34	36	35	

General View

K62	80	220	221	225, P225	HY 360	904, 905
37	38	44	44	45	45-47	48 Pages

Automotive-Program 62-69					
40	71	74	75	83	85
25	37	37	38	38	39 Pages

100	135, 140, HY140	183	185	187	150 - 151
39	39, 40	42	42	42	40 Pages

155	180	181	190	200	210	909, 910
41	41	41	43	43	43	48-49Pages

1010 - 1013	1015 - 1019	2101 - 2116	2130	3000 - 3065
64	64, 65	66	67	68, 69 Pages

Oil-Hydraulic-Program 51-61				
HY960	HY965	HY971	HY973	HY980
55	56	57	58	60 Pages

Buco-Program

General Survey

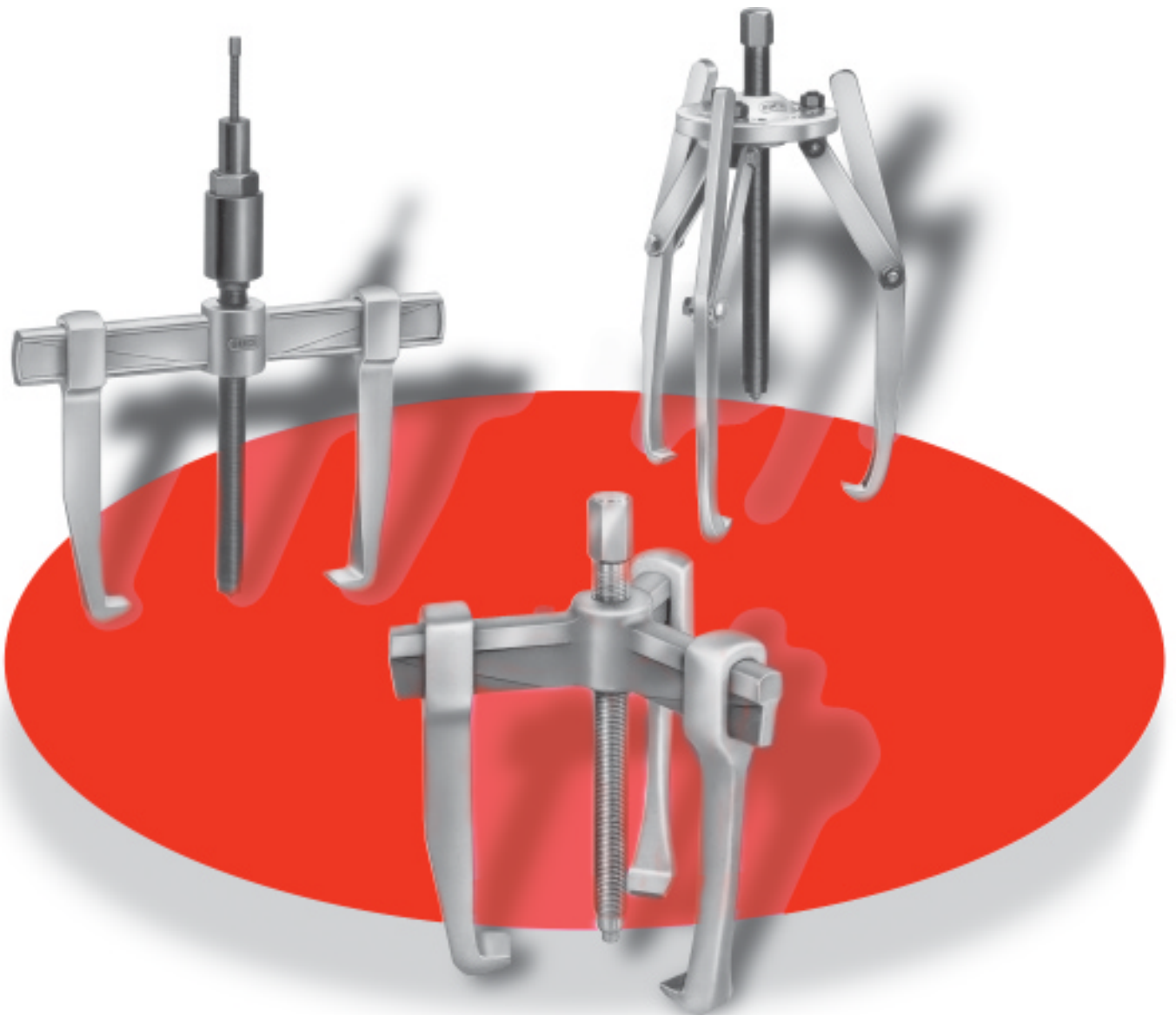
Table of Contents

Description	Page
Ball Bearing Extractors	25
Ball Joint Extractors	41, 42
Battery Terminal Pullers	25
Coil Spring Compressors	48, 49
Counter Stays for Internal Extractors	31, 31
Display Stand for Pullers	10, 11
Dowel Pin Extractor	30
Drawing Bolts	8
Flange Axle Puller	43
Flange-Type Axle Puller	43
Fork Separators	43
Hub Pullers	39, 40
Hydraulic Cylinder	54
Hydraulic Hand Pump	53
Hydraulic Hub Pullers	40
Hydraulic Nut Splitters	44
Hydraulic Presses for Pullers	11
Hydraulic Pullers 2-Arm	6, 12, 20, 21, 23, 46, 55, 60
Hydraulic Pullers 3-Arm	7, 15, 18, 20, 21, 23, 46, 56 - 61
Hydraulic Rams	10
Internal Extractors	27, 29, 32
Knife-Edged Claws Pullers	13, 14, 16, 17, 24
Mounting Bars	66
Needle Bearing Extractors	27
Nut Splitters	44
Oil-Hydraulic-Program 10tons - 50tons	51 - 61
Plastic Fan Wheel Extractors	48
Pressure Plates	11, 24
Puller with S-Hooks	19
Pullers 2-Arm	6, 12 - 14, 19 - 25, 38, 39, 46, 48
Pullers 3-Arm	7, 15 - 23, 46, 48
Pullers with knife-edged Claws	13, 14, 16, 17, 24
Pullers with Side Clamps	38, 39
Pullers with Strap	19 - 23, 48
Pulling Chuck	32
Screw Extractors	45
Separator Puller	39
Separators	33, 34, 35
Sets in metal Cases	9, 11, 19, 21, 26 - 29, 36, 37, 49
Slide Hammer	30
Slide Hammer Set	30
Small Pullers	20, 23, 24, 25
Special-Lever-Iron	67
Standard Pullers	6, 7
Steering Arm Pullers	38
Steering Ball Joint Pullers	41
Steering Wheel Pullers	40, 41
Stud Setters and Extractors	37, 38
Terminal Pullers	25
Thread Adaptors	8, 31, 34, 36
Towing Rods for Cars and Trucks	68, 69
Track Alignment Gauges	64, 65
Tyre Lever	67
Tyre Levers	66

Numerical Index

Article-No.:	Page
10	6, 8, 34
13	7, 8
14	10
15	11
16	12, 13, 14
17	15, 16, 17
19	18
20, 21	19
22, 23	20
24 - 27	21
28, 29	22
30, 31	23
36, 37	23
38	24
40	25
44, 48	25, 26, 27
50	27
53	29
54	30
55	31
56	32
57	32
58	32
60	33
61	33
62	35
71, 74, 75	37, 38
80	38
83	38
85	39
100, 135, 140	39, 40
150, 151, 155	40, 41
180, 181	41
183	42
185	42
187	42
190	43
200, 210	43
220, 221	44
225	45
904, 905	48
909, 910	48, 49
930	49
1010, 1012, 1013	64
1015 - 1019	64, 65
2101 - 2116	66
2120	67
2130	67
2225	67
3000, 3010	68
3050 - 3090	69
HY 360 - HY 362	45 - 47
HY 960 - HY 985	53 - 61
HS, HP, HZ	10, 53, 54

Puller-Program



10



Standard Pullers

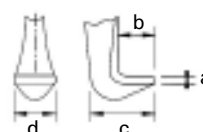
2-Arm

Pulling legs drop forged in one piece therefore guaranteed not-bending even by extremely hard work.

The double profile beam strengthened by trapeze design provide ample power.

Range of use extended by bolt holders which are pushed on beam instead of legs.

For swift and safe removal of wheels of any description, gears, races, ball bearings, pulleys etc.



mechanical

Art.- No.	mm	mm	sizes of claw mm				kg
			a	b	c	d	
10/1	15 - 85	100	3	12	22	22	0,9
10/1A	15 - 125	100	3	12	22	22	1,1
10/2	20 - 160	150	4	18	30	29	2,6
10/2A	20 - 200	150	4	18	30	29	2,9
10/3	40 - 250	200	6,5	23	43	38	6,5
10/3A	40 - 350	200	6,5	23	43	38	7,5
10/4	40 - 530	200	6,5	23	43	38	11,0

HY10



hydraulic

Art.- No.	mm	mm	sizes of claw mm				kg
			a	b	c	d	
HY 10/2	20 - 160	150	4	18	30	29	3,2
HY 10/2A	20 - 200	150	4	18	30	29	3,6
HY 10/3	40 - 250	200	6,5	23	43	38	8,1
HY 10/3A	40 - 350	200	6,5	23	43	38	9,0
HY 10/4	40 - 530	200	6,5	23	43	38	13,0

The well-known standard series with hydraulic ram gives additional power and avoids friction on the thread of centre screw. An easy removal of tight fitting parts is afforded.

For use turn back screw on top of hydraulic ram, centre screw is then screwed tight against axle or shaft, to finish work tighten top screw.

Standard Pullers

3-Arm

A strong triple grip puller with parallel movable legs. Can be used for external and also for internal work by simply turning pulling legs.




Easy and swift handling, the same as our twin grip pullers but offering certain advantages for intricate pulling work.

A triple grip puller cannot tip over even by extreme use.




Important notice:

Pulling legs, extensions and all other equipment of Standard twin grip pullers can be used in conjunction with our No. 13 triple grip pullers.

mechanical

Art.- No.	 mm	 mm	 kg
13/1	15 - 80	100	1,1
13/1A	15 - 120	100	1,4
13/2	20 - 160	150	3,7
13/2A	20 - 200	150	4,3

hydraulic

Art.- No.	 mm	 mm	 kg
HY 13/2	20 -160	150	4,3
HY 13/2A	20 -200	150	4,9




Standard Extensions

For all work where reach of standard legs is not sufficient, extensions are necessary. They are easily mounted, without the use of any tools.

Extensions are pushed on to beam and legs likewise on extensions.

Unlimited reach can be produced by putting more extensions together.

Art.- No.	for Puller No.	Qty.	extends reach mm	 kg
10/AE	10/1, 10/1A, 13/1, 13/1A	1 pc.	100	0,2
10/BE	10/2, 10/2A, 13/2, 13/2A	1 pc.	150	0,6
10/CE	10/3, 10/3A, 10/4	1 pc.	150	1,2



10/2



Bolt Holder



Bolt Holder with Drawing Bolt



Drawing Bolt



Drawing Bolt Extension



Thread Adaptor

Additional Equipment

for Standard Pullers

Bolt holders in conjunction with drawing bolts and thread adaptors are an indispensable outfit for all pulling-off or pressing-on work with thread holes, where pulling legs with claws are useless.

Bolt Holders

Art.- No.	for Puller No.	for drawing bolts	kg
10/1H	10/1, 10/1A, 13/1, 13/1A	ZB/1	0,1
10/2H	10/2, 10/2A, 13/2, 13/2A	ZB/2	0,3
10/3H	10/3, 10/3A, 10/4	ZB/3	0,6

Drawing Bolts

Art.- No.	for bolt holders	length mm	thread	kg
ZB/1	10/1H	150	M 10	0,12
ZB/2	10/2H	250	M 14	0,30
ZB/3	10/3H	350	M 18 x 1,5	0,83

Drawing Bolt Extensions

Art.- No.	for drawing bolts	length mm	thread	kg
ZBV/1	ZB/1	100	M 10	0,09
ZBV/2	ZB/2	150	M 14	0,21
ZBV/3	ZB/3	150	M 18 x 1,5	0,37

Thread Adaptors

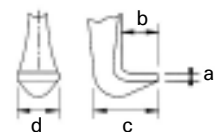
Art.- No.	for drawing bolts and extensions	kg	Art.- No.	for drawing bolts and extensions	kg
M 4/M10		0,02	M 16/M14	ZB/2 +	0,06
M 5/M10	ZB/1	0,02	M 18/M14	ZBV/2	0,07
M 6/M10	+	0,02			
M 8/M10	ZBV/1	0,02	M 14/M 18x1,5		0,10
M10/M10		0,03	M 16/M 18x1,5		0,10
M12/M10		0,03	M 18/M 18x1,5	ZB/3	0,11
M 8/M14		0,04	M 20/M 18x1,5	+	0,12
M10/M14	ZB/2	0,04	M 22/M 18x1,5	ZBV/3	0,14
M12/M14	+	0,05	M 24/M 18x1,5		0,15
M14/M14	ZBV/2	0,05	M 27/M 18x1,5		0,20

10



Standard Pulling Legs

Pulling Legs



Art.- No.	for Puller No.	Qty.	mm	sizes of claw mm				kg
				a	b	c	d	
10/A	10/1, 10/1A, 13/1, 13/1A	1 pc.	100	3	12	22	22	0,3
10/B	10/2, 10/2A, 13/2, 13/2A	1 pc.	150	4	18	30	29	0,6
10/C	10/3, 10/3A, 10/4	1 pc.	200	6,5	23	43	38	1,3

Standard Sets

in metal cases

Pullers, Separators and Extracting Tools


Sets No. 10/K comprise of our well-known BUCO Standard twin grip pullers No. 10 with their extensive range of special equipment, including separators, battery terminal pullers and extractors.

An ideal tool combination made for quick and safe removal of gear wheels, ball bearings, races, pulleys, etc. A full range of thread adaptors is supplied with drawing bolts and extensions.

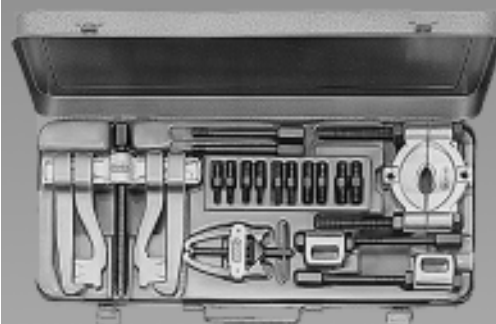
Separators with their knife-edge provide means of withdrawing parts where an all round support is required to avoid damage to close fitting bearings, races, etc. Also included are battery terminal pullers.

They are indispensable for certain repair work or maintenance of electrical appliances, small motors, ball bearings, wheels, etc.

These standard sets in metal cases have such an universal scale of application that they are indispensable for all progressive workshops, maintenance works, etc.

Art.- No.	contents of cases		 kg
10/K1AE	1 Standard-Puller	No. 10/1A	6,8
	1 pair of Extensions	No. 10/AE	
	1 pair of Bolt Holders	No. 10/1H	
	1 pair of Drawing Bolts	No. ZB/1	
	1 pair of Drawing Bolt Extensions	No. ZBV/1	
	1 complete set of Thread Adaptors	M5/10-M12/10	
	1 Separator	No. 60/1	
	1 Battery Terminal Puller	No. 40/1	
10/K2AE	1 Standard-Puller	No. 10/2A	12,0
	1 pair of Extensions	No. 10/BE	
	1 pair of Bolt Holders	No. 10/2H	
	1 pair of Drawing Bolts	No. ZB/2	
	1 pair of Drawing Bolt Extensions	No. ZBV/2	
	1 complete set of Thread Adaptors	M10/14-M16/14	
	1 Separator	No. 60/2	
10/K3E	1 Standard-Puller	No. 10/3	23,0
	1 pair of Extensions	No. 10/CE	
	1 pair of Bolt Holders	No. 10/3H	
	1 pair of Drawing Bolts	No. ZB/3	
	1 pair of Drawing Bolt Extensions	No. ZBV/3	
	1 complete set of Thread Adaptors	M14-M24xM18x1,5	
	1 Separator	No. 60/3	
10/K15	1 Standard-Puller	No. 10/1	17,2
	1 Standard-Puller	No. 10/2	
	1 pair of Extensions	No. 10/AE	
	1 pair of Extensions	No. 10/BE	
	1 Hydraulic Press	No. 15/2	
	1 Separator	No. 60/2	

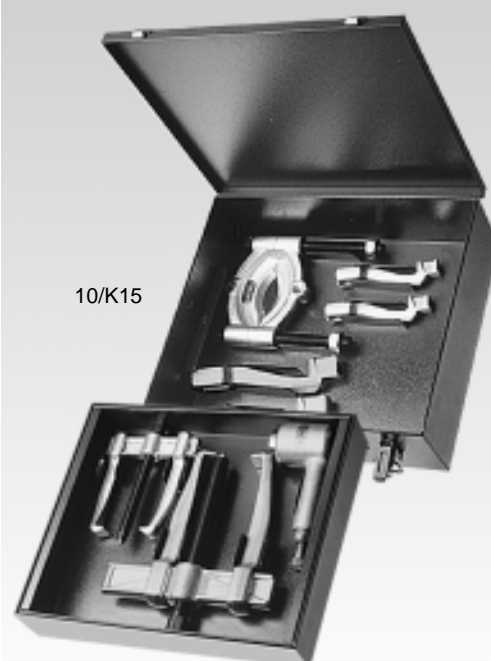
10/K



10/K1AE



10/K2AE, 10/K3E



10/K15

Display Stands

10/St



An excellent help for sales. For shop window, sales counter and workshop.

Art.- No.	display stand furnished with	kg
10/St 1	1 Puller each No. 10/1, 10/1A, 10/2, 10/2A, 10/3	15,5
10/St 2	1 Puller each No. 10/1, 10/1A, 10/2, 10/2A, 10/3 1 pair each of extensions No. 10/AE, 10/BE, 10/CE	19,5

HS



HS/2 - HS/5K

HS/6

Hydraulic Rams

interchangeable with standard centre screws

Subsequent fitting of hydraulic rams to pullers as stated is always possible without alterations to beams.

How to operate:

Turn back screw on top of ram, then turn centre screw firm against axle, shaft or arbor, to finish work tighten top screw to put hydraulic pressure on part to be withdrawn.

Art.- No.	for Puller No.	max. capacity	kg
HS/2	10/2, 10/2A, 13/2, 13/2A, B10/2, B10/2A, 16/2, 16/2A, 62/2, 62/3	8 ton	1,3
HS/3	22/3 - 22/5, 23/3 - 23/5	13 ton	2,8
HS/4	10/3, 10/3A, B10/3, B10/3A 16/3, 16/3A, 16/4, 62/4	13 ton	3,0
HS/5	22/6, 23/6, 24/1 - 27/1, 24/2 - 27/2, 30/1, 30/2, 31/1, 31/2, 140	15 ton	3,9
HS/5 K	10/4, B10/4	15 ton	3,4
HS/6	16/5, 17/3A, 17/4 17/5, 19, 62/5	15 ton	3,6

Extension piece for hydr. Ram No. HS/6

Art.- No.	extension mm	kg
HS/6-V1	50	0,2
HS/6-V2	100	0,4
HS/6-V3	150	0,6

14/D



Pressure Step Plates

Shore up the centre screw or ram at hollow shaft.

The pressure step plates, to be inserted in the bore, give a solid rest. The puller centre screw or ram forces against the pressure step plate.

Single Pressure Step Plates are listed in a table at the pricelist page 3.


Pressure Step Plates Set

Art.- No.	for axle bore mm	contents	kg
14/DK	Ø10 - Ø44	Set of 18 pieces Pressure Plates	1,3

Hydraulic Presses

*Enormous power, yet small in size
Very simple to handle*

The hydraulic press can be applied in connection with all mechanical pullers. Where ever possible, very tight placed parts should be removed by the help of our hydraulic press. The operating stress is much lessened, therefore thread of centre screw will withstand longer.

Art.- No.	max. torque	stroke mm	d mm	h mm	max. capacity	 kg
15/1	60 Nm	8	24	50	8 ton	0,5
15/2	70 Nm	12	32	75	15 ton	1,8

How to operate:


Place press in released condition between shaft and centre screw of puller, tighten centre screw moderately to keep press in position. Pulling operation begins by tightening hydraulic press screw. Same process to be repeated if part to be pulled has not come sufficiently loose. Note: release hydraulic system always after use. Piston of press releases not automatically.

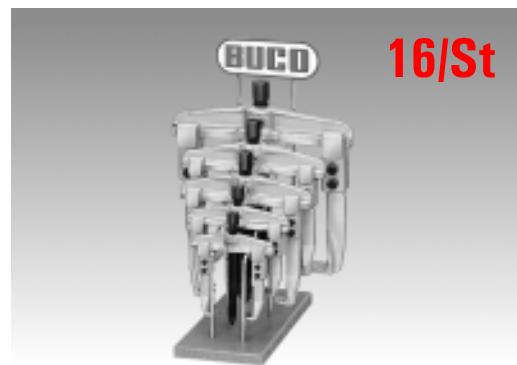


15

Display Stand


An excellent help for sales.
For shop window, sales counter or for the workshop.

Art.- No.	Display Stand furnished with	 kg
16/ST	1 Puller each No. 16/1, 16/1A, 16/2, 16/2A, 16/3	17,0



16/St

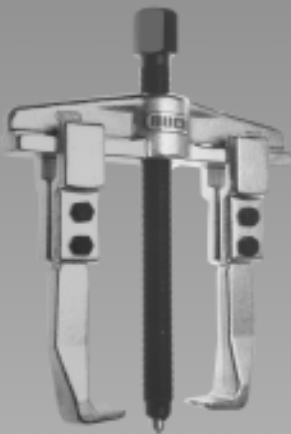
Universal Puller Set in metal cases

Art.- No.	contents	 kg	
16/K15	1 Universal-Puller	No. 16/1	16,6
	1 Universal-Puller	No. 16/2	
	1 pair Extended-legs	No. 16/A - 200	
	1 pair Extended-legs	No. 16/B - 300	
	1 hydraulic Press	No. 15/2	
	1 Separator	No. 60/2	



16/K15

16







HY 16







Universal Pullers

2-Arm

mechanical

Art.- No.	 mm	 mm	 mm	 kg
16/1	25 - 80	100	70 - 130	1,0
16/1A	25 - 130	100	80 - 180	1,1
16/2	50 - 160	150	105 - 220	2,8
16/2A	60 - 200	150	120 - 270	3,2
16/3	80 - 250	200	160 - 330	6,7
16/3A	80 - 350	200	160 - 420	8,0
16/4	110 - 520	200	195 - 600	12,5
16/5	170 - 640	225	260 - 715	23,5

hydraulic

Art.- No.	 mm	 mm	 mm	 kg
HY16/2	50 - 160	150	105 - 220	3,6
HY16/2A	60 - 200	150	120 - 270	3,8
HY16/3	80 - 250	200	160 - 330	8,5
HY16/3A	80 - 350	200	160 - 420	9,4
HY16/4	110 - 520	200	195 - 600	14,3
HY16/5	170 - 640	185	260 - 715	25,0



How to operate:

Turn back screw on the top of ram, then turn centre screw firm against axle, shaft or arbor, to finish work tighten top screw to put hydraulic pressure on part to be withdrawn.

Universal Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	 mm	 kg
16/A	16/1, 16/1A	1 pc.	100	0,25
16/B	16/2, 16/2A, HY 16/2, HY 16/2A	1 pc.	150	0,6
16/C	16/3 - 16/4, HY 16/3 - HY 16/4	1 pc.	200	1,3
16/D	16/5, HY 16/5	1 pc.	225	2,3

Universal Pulling Legs, Extended

Art.- No.	for Puller No.	Qty.	 mm	 kg
16/A - 200	16/1, 16/1A	1 pc.	200	0,6
16/A - 250	16/1, 16/1A	1 pc.	250	0,7
16/B - 220	16/2, 16/2A, HY 16/2, HY 16/2A	1 pc.	220	0,9
16/B - 300	16/2, 16/2A, HY 16/2, HY 16/2A	1 pc.	300	1,1
16/C - 300	16/3, 16/3A, 16/4 HY 16/3, HY 16/3A, HY 16/4	1 pc.	300	2,3
16/C - 400		1 pc.	400	2,7
16/C - 500		1 pc.	500	3,7
16/C - SP		1 pc.	300 - 500	4,5
16/D - 300	16/5, HY 16/5	1 pc.	300	2,9
16/D - 400	16/5, HY 16/5	1 pc.	400	3,2
16/D - 500	16/5, HY 16/5	1 pc.	500	4,2
16/D - SP	16/5, HY 16/5	1 pc.	400 - 700 (adjustable)	10,0

Universal Pullers

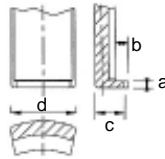
2-Arm with special Claws

Model with 2,0 mm thin edged Claws

Can be used in confined areas.

The claws are extrem flat and sharp pointed.

The special pulling legs are available in different lengths.



Pullers

Art.- No.	mm	mm	max. torque Nm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
16/0	20 - 80	100	60	3,5	35	2	6	13	27	1,0
16/0A	20 - 130	100	60	3,5	35	2	6	13	27	1,2

Universal Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	mm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
16/A1	16/0, 16/0A	2 pcs.	100	3,5	35	2	6	13	27	0,5

Universal Pulling Legs, Extended

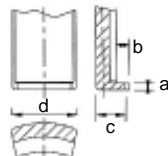
Art.- No.	for Puller No.	Qty.	mm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
16/A1- 200	16/0, 16/0A	2 pcs.	200	3,5	35	2	6	13	27	1,1
16/A1- 250	16/0, 16/0A	2 pcs.	250	3,5	35	2	6	13	27	1,3

Model with 3,6 mm thin edged Claws

The claws-edge have the same capacity as standard claws.

By means of the flat and sharp pointed claw it can be used in confined areas.

The special pulling legs are available in different lengths.



Pullers

Art.- No.	mm	mm	max. torque Nm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
16/01	20 - 80	100	80	4,5	45	3,6	6	13	27	1,0
16/01A	20 - 130	100	80	4,5	45	3,6	6	13	27	1,2

Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	mm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
16/A2	16/01, 16/01A	2 pcs.	100	4,5	45	3,6	6	13	27	0,5

Pulling Legs, Extended

Art.- No.	for Puller No.	Qty.	mm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
16/A2- 200	16/01, 16/01A	2 pcs.	200	4,5	45	3,6	6	13	27	0,5
- 250	16/01, 16/01A	2 pcs.	250	4,5	45	3,6	6	13	27	1,3



16/01 + 16/A2 - 200

Universal Pullers

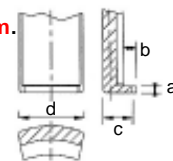
2-Arm with special Claws

Model with 3,6 mm thin Claws, **Leg tip extrem narrow 14 mm.**

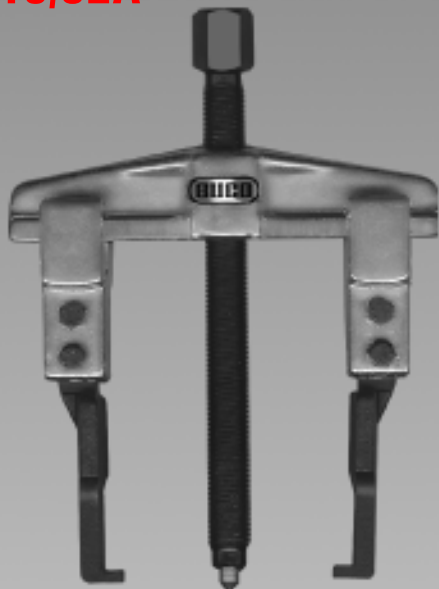
The claws are extrem narrow and sharp pointed.

Can be used in confined areas.

The special pulling legs with thin edged claws are available in different lengths.



16/02
16/02A



Pullers

Art.- No.	mm	mm	max. torque Nm	max. capacity to KN	sizes of claw mm				kg
					a	b	c	d	
16/02	20 - 80	100	50	2,5 25	3,6	6	13	14	1,0
16/02A	20 - 130	100	50	2,5 25	3,6	6	13	14	1,2

Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	mm	max. capacity to KN	sizes of claw mm				kg
					a	b	c	d	
16/A3	16/02, 16/02A	2 pcs.	100	2,5 25	3,6	6	13	14	0,5

Pulling Legs, Extended

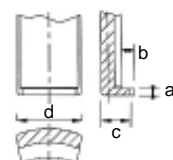
Art.- No.	for Puller No.	Qty.	mm	max. capacity to KN	sizes of claw mm				kg
					a	b	c	d	
16/A3- 200	16/02, 16/02A	2 pcs.	200	2,5 25	3,6	6	13	14	1,1
16/A3- 250	16/02, 16/02A	2 pcs.	250	2,5 25	3,6	6	13	14	1,3

Model with 5,0 mm edged Claws

The claws have the same capacity as the standard claws.

The claws are sharp pointed.

The special pulling legs with the thin edged claws are available in different lengths.



16/2S
16/2AS



Pullers

Art.- No.	mm	mm	max. torque Nm	max. capacity to KN	sizes of claw mm				kg
					a	b	c	d	
16/2S	50 - 160	150	190	6,5 65	5	8	17	40	3,0
16/2AS	60 - 200	150	190	6,5 65	5	8	17	40	3,2

Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	mm	max. capacity to KN	sizes of claw mm				kg
					a	b	c	d	
16/B1	16/2S, 16/2AS	2 pcs.	150	6,5 65	5	8	17	40	1,2

Pulling Legs, Extended

Art.- No.	for Puller No.	Qty.	mm	max. capacity to KN	sizes of claw mm				kg
					a	b	c	d	
16/B1- 220	16/2S, 16/2AS	2 pcs.	220	6,5 65	5	8	17	40	1,8
16/B1- 300	16/2S, 16/2AS	2 pcs.	300	6,5 65	5	8	17	40	2,2




Universal Pullers

3-Arm




A strong universal triple grip puller with parallel movable legs and large spread. Can be used for inside or outside operations.

The triple grip puller cannot tip over even by extreme use.



mechanical

Art.- No.	 mm	 mm	 kg
17/1	25 - 80	100	1,4
17/1A	25 - 120	100	1,6
17/2	25 - 160	150	3,6
17/2A	25 - 200	150	4,0
New 17/3	XX - 250	150	8,6
17/3A	100 - 380	200	19,0
17/4	120 - 520	200	22,0
17/5	120 - 650	200	26,0



hydraulic

Art.- No.	 mm	 mm	 kg
HY 17/2	25 - 160	150	4,4
HY 17/2A	25 - 200	150	4,8
New HY 17/3	XX - 250	200	10,4
HY 17/3A	100 - 380	185	23,0
HY 17/4	120 - 520	185	26,0
HY 17/5	120 - 650	185	29,0

Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	 mm	 kg
17/A	17/1, 17/1A	1 pc.	100	0,3
17/B	17/2, 17/2A	1 pc.	150	0,75
17/C	17/3, 17/3A, 17/4, 17/5	1 pc.	200	1,7

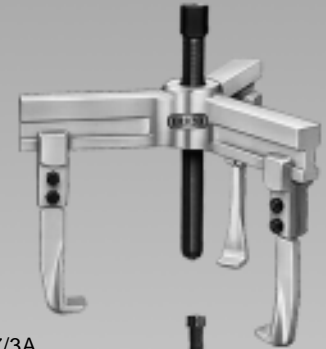
Pulling Legs, Extended

Art.- No.	for Puller No.	Qty.	 mm	 kg
17/A - 200	17/1, 17/1A	1 pc.	200	0,55
17/A - 250	17/1, 17/1A	1 pc.	250	0,7
17/B - 220	17/2, 17/2A	1 pc.	220	1,0
17/B - 300	17/2, 17/2A	1 pc.	300	1,4
17/C - 300	17/3A, 17/4, 17/5	1 pc.	300	2,35
17/C - 400	17/3A, 17/4, 17/5	1 pc.	400	2,7
17/C - 500	17/3A, 17/4, 17/5	1 pc.	500	3,7
17/C - SP	17/3A, 17/4, 17/5	1 pc.	300 - 500 (adjustable)	4,5

17



17/2A

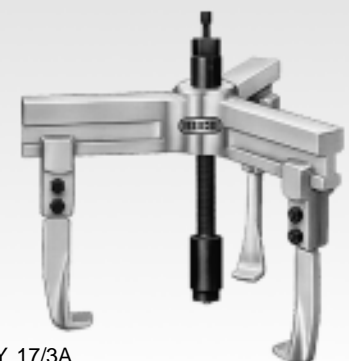


17/3A

HY 17

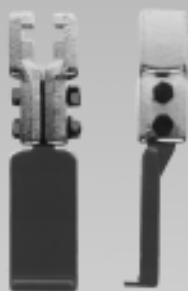


HY 17/2A



HY 17/3A

17/0
17/0A



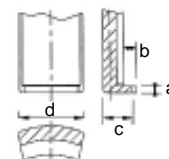
17/01
17/01A



Universal Pullers

3-Arm with special Claws

Model with 2,0 mm thin edged Claws
Can be used in confined areas.
The special pulling legs are available in different lengths.



Pullers

Art.- No.	mm	mm	max. torque Nm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
17/0	25 - 80	100	70	4,5	45	2	6	13	27	1,4
17/0A	25 - 130	100	70	4,5	45	2	6	13	27	1,6

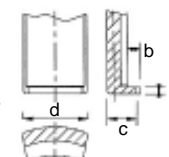
Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	mm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
17/A1	17/0, 17/0A, 17/1, 17/1A	3 pcs.	100	4,5	45	2	6	13	27	0,9

Pulling Legs, Extended

Art.- No.	for Puller No.	Qty.	mm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
17/A - 200	17/0, 17/0A, 17/1, 17/1A	3 pcs.	200	4,5	45	2	6	13	27	1,6
17/A1 - 200	17/0, 17/0A, 17/1, 17/1A	3 pcs.	250	4,5	45	2	6	13	27	1,6

Model with 3,6 mm thin edge Claws
The special claws have the same capacity as standard claws.
By means of the flat and sharp pointed edged claws
can be used in confined areas.
The special pulling legs are available in different lengths.



Pullers

Art.- No.	mm	mm	max. torque Nm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
17/01	25 - 80	100	100	6,0	60	3,6	6	13	27	1,4
17/01A	25 - 130	100	80	5,5	55	3,6	6	13	27	1,6

Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	mm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
17/A2	17/01, 17/01A, 17/1, 17/1A	3 pcs.	100	6	60	3,6	6	13	27	0,9

Pulling Legs, Extended

Art.- No.	for Puller No.	Qty.	mm	max. capacity		sizes of claw mm				kg
				ton	KN	a	b	c	d	
17/A2 - 200	17/01, 17/01A, 17/1, 17/1A	3 pcs.	200	6	60	3,6	6	13	27	1,6
17/A2 - 250	17/01, 17/01A, 17/1, 17/1A	3 pcs.	250	6	60	3,6	6	13	27	2,0

Universal Pullers

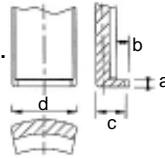
3-Arm with special Claws

Model with 3,6 mm edged Claws, **Leg tip extrem narrow 14 mm.**

The edged claws are extrem narrow and sharp pointed.

Can be used in confined areas.

The special pulling legs are available in different lengths.



Pullers

Art.- No.	mm		max. torque Nm	max. capacity ton KN		sizes of claw mm				kg
				a	b	c	d			
17/02	25 - 80	100	50	2,5	25	3,6	6	13	14	1,4
17/02A	25 - 130	100	50	2,5	25					1,6

Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	mm	max. capacity ton KN	sizes of claw mm				kg
					a	b	c	d	
17/A3	17/02, 17/02A,	3 pcs.	100	2,5 25	3,6	6	13	14	0,9

Pulling Legs, Extended

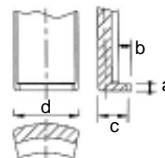
Art.- No.	for Puller No.	Qty.	mm	max. capacity ton KN	sizes of claw mm				kg
					a	b	c	d	
17/A3- 200	17/02, 17/02A	3 pcs.	200	2,5 25	3,6	6	13	14	1,6
17/A3- 250	17/02, 17/02A	3 pcs.	250	2,5 25	3,6	6	13	14	2,0

Model with 5,0 mm edged Claws

The special claws have the same capacity as the standard claws:

The edged claws are sharp pointed.

The special pulling legs are available in different lengths.



Pullers

Art.- No.	mm		max. torque Nm	max. capacity ton KN		sizes of claw mm				kg
				a	b	c	d			
17/2S	50 - 160	150	250	7,0	70	5	8	17	40	3,6
17/2AS	50 - 200	150	200	7,0	70	5	8	17	40	4,0

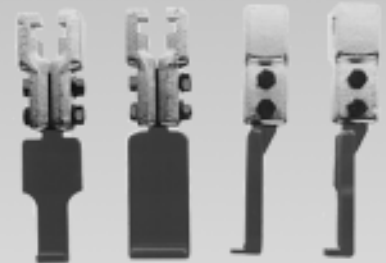
Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	mm	max. capacity ton KN	sizes of claw mm				kg
					a	b	c	d	
17/B1	17/2S, 17/2AS	3 pcs.	150	7,0 70	5	8	17	40	2,2

Pulling Legs, Extended

Art.- No.	for Puller No.	Qty.	mm	max. capacity ton KN	sizes of claw mm				kg
					a	b	c	d	
17/B1- 220	17/2S, 17/2AS	3 pcs.	220	7,0 70	5	8	17	40	3,0
17/B1- 300	17/2S, 17/2AS	3 pcs.	300	7,0 70	5	8	17	40	4,0

17/02
17/02A



17/2S
17/2AS



19



Pullers

3-Arm


Heavy pattern

Can be used as 2-, 3- or 4- arm puller and the beam arms are exchangeable.

mechanical

Art.- No.	 mm	 mm	 kg
19	150 - 700	200	39,0



hydraulic

Art.- No.	 mm	 mm	 kg
HY 19	150 - 700	160	41,0



HY 19



Pulling Legs, Standard

Art.- No.	for Puller No.	Qty.	 mm	 kg
19/D	19, HY19	1 pc.	200	2,4




Pulling Legs, Extended

Art.- No.	for Puller No.	Qty.	 mm	 kg
19/D - 300	19, HY19	1 pc.	275	3,4
19/D - 400	19, HY19	1 pc.	375	4,0
19/D - 500	19, HY19	1 pc.	475	5,0
19/D - SP	19, HY19	1 pc.	375 - 675 (adjustable)	10,0




Pullers

Well-known design for all pulling work. Strongly made yet light and simple to operate. Unique self-locking system ensures non-slipping of jaws – the harder the pull the tighter the grip. The pulling legs with jaws on both ends have one thin and small jaw each for use in tight places.

2-Arm

Art.- No.	 mm	 mm	 kg
20/1	20 - 150	80	0,72
20/2	40 - 200	130	1,60

3-Arm

Art.- No.	 mm	 mm	 kg
21/1	20 - 150	80	0,93
21/2	40 - 200	130	2,20




Universal Set

in metal cases

A combination set of universal utility. Each assembled twin grip puller can easily be converted into a triple grip puller by exchanging the appropriate triple puller head and adding extra pulling leg.

The easy interchangeability of these combination sets enable an extra wide use made available at low cost.

Art.- No.	contents		 kg
K20/60	1 Universal Puller	No. 20/1	9,5
	1 Universal Puller	No. 20/2	
	1 Separator	No. 60/1	
	1 Separator	No. 60/2	
	1 Cross-beam	No. 21/1K	
	1 Cross-beam	No. 21/2K	
	1 Pulling Leg, compl.	No. 20/1H	
	1 Pulling Leg, compl.	No. 20/2H	



22



23



HY 23



Pullers




Of sturdy yet well balanced construction for all types of application.

Simple to operate.




Very wide range. Self-locking system prevents slipping of jaws. More pressure by forcing screw automatically increases grip of jaws.

Mechanical Centre Screws are interchangeable with Hydraulic Rams.




mechanical 2-Arm Pullers

Art.- No.	 mm	 mm	 kg
22/01	15 - 85	85	0,33
22/0	20 - 120	120	0,45
22/1	20 - 165	145	0,82
22/2	35 - 230	220	2,1
22/3	50 - 300	270	4,5
22/4	50 - 400	400	5,8
22/5	50 - 500	500	7,4
22/6	55 - 650	500	13,0




mechanical 3-Arm Pullers

Art.- No.	 mm	 mm	 kg
23/01	15 - 85	85	0,46
23/0	20 - 120	120	0,61
23/1	20 - 165	145	1,1
23/2	35 - 230	220	2,7
23/3	50 - 300	270	5,7
23/4	50 - 400	400	7,9
23/5	50 - 500	500	10,5
23/6	55 - 650	500	17,5

hydraulic 2-Arm Pullers

Art.- No.	 mm	 mm	 kg
HY22/3	50 - 300	270	6,2
HY22/4	50 - 400	400	8,2
HY22/5	50 - 500	500	9,1
HY22/6	55 - 650	500	14,5


hydraulic 3-Arm Pullers

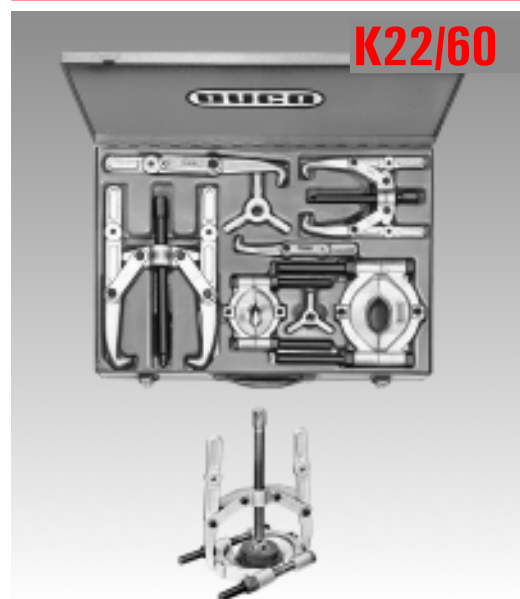
Art.- No.	 mm	 mm	 kg
HY23/3	50 - 300	270	7,7
HY23/4	50 - 400	400	10,7
HY23/5	50 - 500	500	12,2
HY23/6	55 - 650	500	18,6

Universal - Set

in metal case

This illustration shows separator with universal puller separating two closely placed gear wheels. They can then easily pulled off from the shaft.




Art.- No.	contents		 kg
K22/60	1 Universal Puller	No. 22/1	10,2
	1 Universal Puller	No. 22/2	
	1 Separator	No. 60/1	
	1 Separator	No. 60/2	
	1 Cross-beam	No. 23/1K	
	1 Cross-beam	No. 23/2K	
	1 Pulling Leg, compl.	No. 22/1H	
	1 Pulling Leg, compl.	No. 22/2H	






Heavy Pullers

Exceptionally strong design combined with large capacity. Universal use as pulling legs are interchangeable. A puller with 5 legs can easily be made into a 4-, 3- or 2-leg puller. In case of spoke wheels it is advisable to insert legs between spokes on the hub. This is possible whether there are 3-, 4-, 5 or 6 spokes. Use the appropriate number of legs. Our powerful hydraulic pullers are specially recommended for all industrial maintenance and repair work.

mechanical

No. of legs	Art.- No.	 mm	 mm	 kg
2-Leg	24/1	50 - 350	325	11,0
	24/2	50 - 500	500	12,6
3-Leg	25/1	60 - 350	325	13,4
	25/2	60 - 500	500	15,8
4-Leg	26/1	70 - 350	325	15,8
	26/2	70 - 500	500	19,0
5-Leg	27/1	80 - 350	325	18,0
	27/2	80 - 500	500	22,0

hydraulic

No. of legs	Art.- No.	 mm	 mm	 kg
2-Leg	HY24/1	50 - 350	325	12,3
	HY24/2	50 - 500	500	14,0
3-Leg	HY25/1	60 - 350	325	14,6
	HY25/2	60 - 500	500	17,1
4-Leg	HY26/1	70 - 350	325	17,2
	HY26/2	70 - 500	500	20,3
5-Leg	HY27/1	80 - 350	325	19,5
	HY27/2	80 - 500	500	23,5





HY24 - HY27




HY 27

Single Parts

Additional legs complete with connecting plates, bolts and nuts

Art.- No.	 mm	 kg
24/1H	325	2,5
24/2H	500	3,3

Centre Screw Extension extends screw by 200mm

Art.- No.	for Puller No.	 kg
30/SV	24/2 - HY 27/2	2,5
	30/1 - HY 30/2	
	31/1 - HY 31/2	

28






Pullers

2-Arm

Puller with bent legs adjustable to various lengths.

mechanical

Art.- No.	 mm	 mm	 kg
28/1	20 - 170	130	1,1
28/2	20 - 230	200	2,5

29






Pullers

3-Arm

Puller with bent legs adjustable to various lengths.

mechanical

Art.- No.	 mm	 mm	 kg
29/1	20 - 170	130	1,3
29/2	20 - 230	200	3,0

Pullers




This is an extra powerful and robust range with extremely large capacities both for reach and spread.

Larger capacities can be supplied upon request.




New improved design for adjustable arms.

Interchangeable mechanical and hydraulic screw.

mechanical

No. of legs	Art.-No.	 mm	 mm	 kg
2-Arm	30/1	850	600	18,5
	30/2	1000	800	20,5
3-Arm	31/1	850	600	25,0
	31/2	1000	800	28,2

hydraulic

No. of legs	Art.-No.	 mm	 mm	 kg
2-Arm	HY 30/1	850	600	19,9
	HY 30/2	1000	800	21,9
3-Arm	HY 31/1	850	600	26,4
	HY 31/2	1000	800	29,6

Screw - Extension Art.-No. 30/SV page 22




Pullers

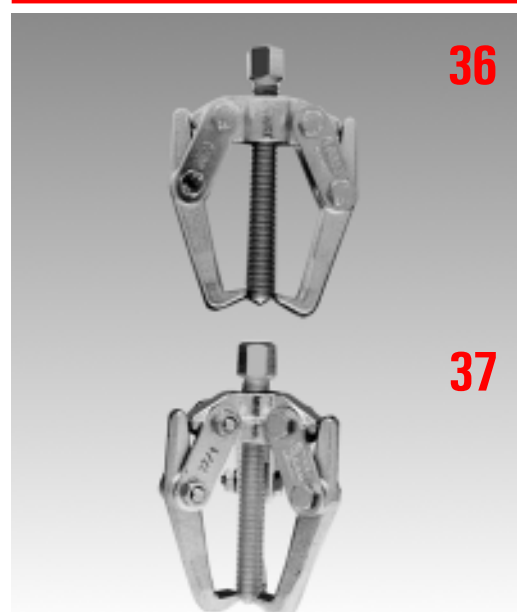
A very small, handy and inexpensive puller designed for any light work. The unique self-locking device enables arms to be pressed tightly against parts to be pulled.

2-Arm

Art.-No.	 mm	 mm	 kg
36/1	10 - 55	40	0,13
36/2	10 - 75	65	0,16

3-Arm

Art.-No.	 mm	 mm	 kg
37/1	10 - 55	40	0,18
37/2	10 - 75	65	0,22



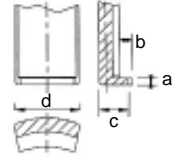
38



Pullers

2-Arm with sharp pointed claws

To be used in confined areas.
The edged claws are sharp pointed.



mechanical

Art.- No.	mm		max. torque Nm	max. capacity ton KN		sizes of claw mm				kg
	mm	mm		a	b	c	d			
38/1	6 - 100	70 - 85	45	2,5	25	2,5	4,5	8,5	23	0,4
38/2	10 - 140	85 - 120	65	2,5	25	3,5	5	11	31	0,8
38/3	15 - 140	125 - 155	75	4,5	45	3,5	5	11	31	1,0

Pressure Screw Extension

Art.- No.	extends mm	for BUCO-Puller No.	Ø	kg
			pressure-point mm	
38/D1	20	38/1, 38/1SP	8	0,03
38/D2	30	38/2, 38/3, 38/3SP	13	0,05

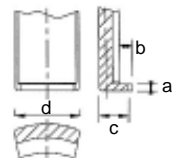
38/-SP



Pullers

2-Arm with extra-thin claws

To be used in confined areas.
The edged claws are sharp pointed.
The claws are in the under area very narrow as the models No. 38/1 - /3.






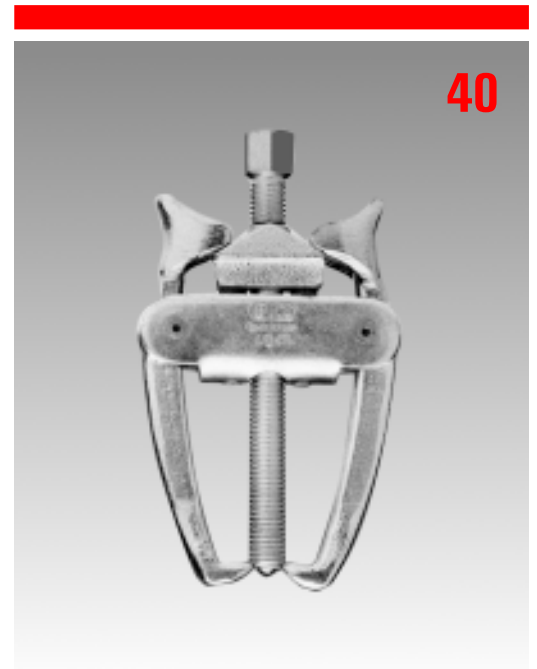
mechanical

Art.- No.	mm		max. torque Nm	max. capacity ton KN		sizes of claw mm				kg
	mm	mm		a	b	c	d			
38/1SP	6 - 100	70 - 85	18	1,0	10	2,5	4,5	8,5	11	0,4
38/3SP	15 - 140	125 - 155	50	2,5	25	3,5	5	11	12	1,0

Battery Terminal Pullers

A small very handy puller for battery service, electrical appliances, small motors, ball bearings, gears, etc.
The ideal "one hand" application allows swift safe and easy use. Automatic clamping of pulling legs by spring pressure.
Once in position no slipping-off possible.


Art.- No.	 mm	 mm	 kg
40/1	10 - 55	45	0,19
40/2	10 - 70	65	0,32




Ball Race Extractors

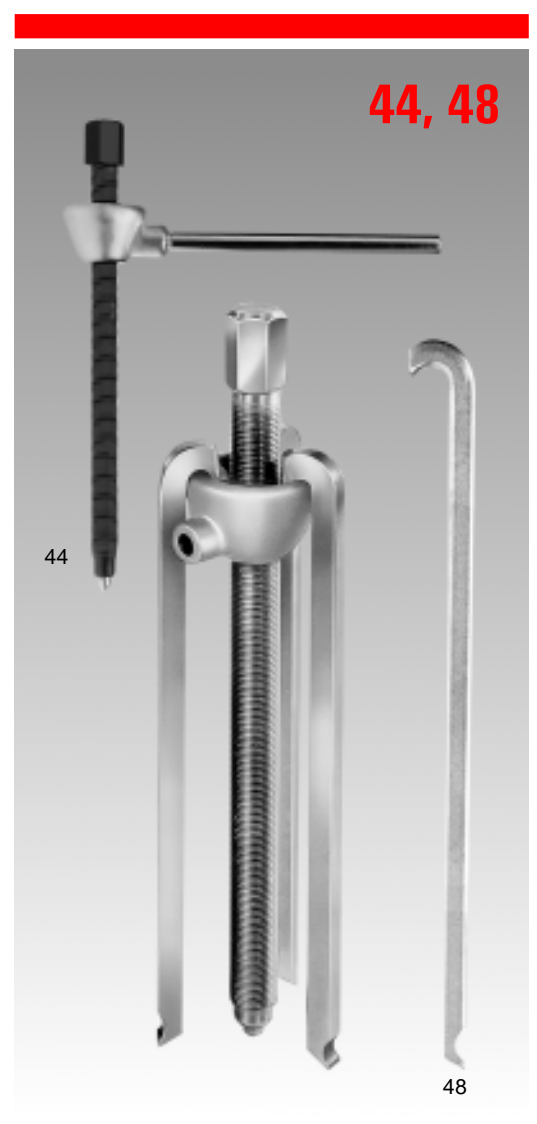
These special race extractors are preferably put to use for the withdrawal of ball races in blind housings and when space is limited, where normal pullers cannot grip. The slender form makes possible to deal with races in very concealed places.

Extractor, forcing screw with body

Art.- No.	for pulling legs	 kg
44/1	48/1, 48/2	0,2
44/2	48/3, 48/4, 48/5	0,3
44/3	48/4, 48/5, 48/6	0,4
44/4	48/5, 48/7, 48/8	0,7
44/5	48/5, 48/6, 48/8	1,1

Pulling legs, set of 4 legs

Art.- No.	for extractors	total length mm	 kg
48/1	44/1	140	0,07
48/2	44/1	145	0,11
48/3	44/2	175	0,18
48/4	44/2 + 44/3	175	0,18
48/5	44/2 - 44/5	185	0,25
48/6	44/3 + 44/5	190	0,37
48/7	44/4	235	0,57
48/8	44/4 + 44/5	235	0,78



Ball Race Extractors

44, 48

Schedule of 46 commonly used ball races with extractor sizes to fit.

Extractors Art.-No.	Pulling legs Art.-No.	suitable for ball races			
44/1	48/1	6000	6200		
		6001			
		6002			
		6003			
44/2	48/2	6004	6201		
		6005	6202		
44/2	48/3	6006	6203	6300	
	48/4	6007	6204	6301	
				6302	
	48/5		6303	6304	
44/3	48/4	6008	6205		
	48/5		6206		
	48/6		6207	6305	
44/4	48/5	6009			
	48/7		6208	6306	
	48/8			6403	
			6404		
			6405		
44/5	48/5	6010			
		6011			
	48/6	6012			
		6013			
	48/8		6209	6307	6406
			6210	6308	6407
			6211	6309	6408
		6212	6310	6410	
		6311			



44/K1

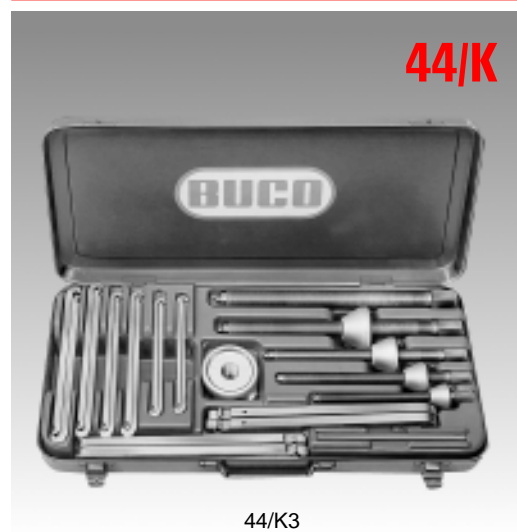
How to operate No. 44 / 48:

Ascertain number of ball race to be extracted. Choose right puller and legs according to schedule. Insert claws of legs symmetrically between balls to grip outer ring, put centre screw onto middle of shaft, hang legs into body and tighten screw until race comes loose. In case where number of ball race cannot be verified, check distance between outer and inner ring of race. In most instances the approximate corresponds with thickness of pulling legs to be used.

Ball Bearing Extractor Sets

in metal cases

Art.- No.	contents	for Ball races	kg
44/K1	2 Extractors 44/1 + 44/2 4 Sets of Pulling Legs 48/1 - 48/4 1 Supporting Pin	6000 - 6007 6200 - 6204 6300 - 6302	1,5
44/K2	3 Extractors 44/3 - 44/5 5 Sets of Pulling Legs 48/4 - 48/8 1 Supporting Pin	6008 - 6013 6205 - 6212 6305 - 6311 6403 - 6410	6,9
44/K3	5 Extractors 44/1 - 44/5 8 Sets of Pulling Legs 48/1 - 48/8 1 Supporting Pin	6000 - 6013 6200 - 6212 6300 - 6311 6403 - 6410	7,7



Internal Extractors

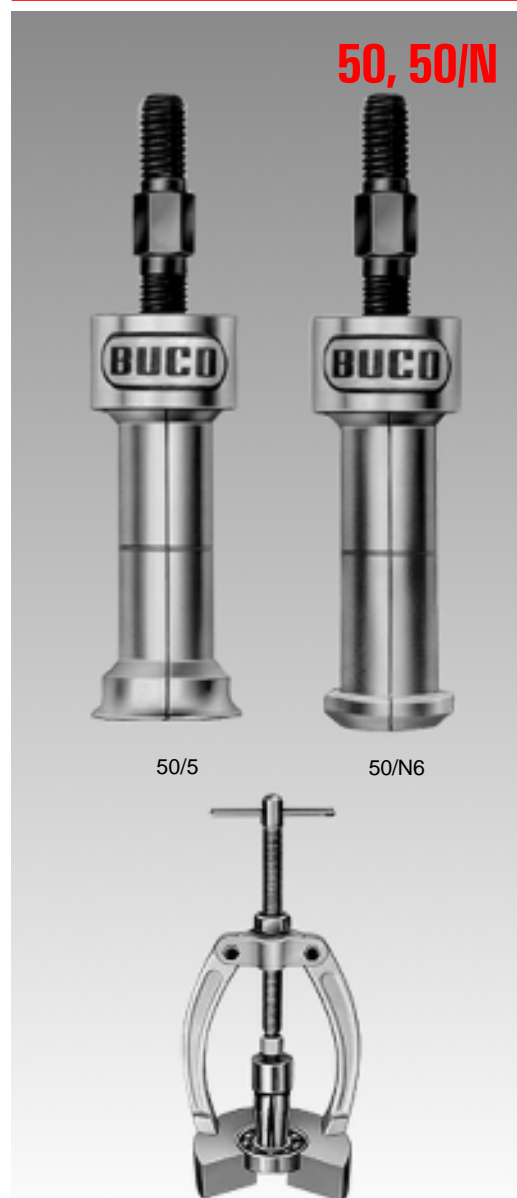
For withdrawing ball bearings, races, sleeves, bushings, etc. from blind holes without damage. The well designed construction allows a safe and positive grip. Will not slip off under pressure.

How to operate:

Extractor is fed into bore of race. The centre screw is tightened until lips on pulling jaws are securely pressed under race. Mount pulling device and connect centre screw with extractor. Turn down nut about crossbar the extractor with race will be withdrawn.

Internal Extractors

Art.- No.	for bores of mm	kg
50/02	5 - 6	0,10
50/01	6 - 8	0,10
50/0	8 - 12	0,10
50/1	12 - 16	0,11
50/2	16 - 20	0,12
50/3	20 - 27	0,13
50/3A	24 - 30	0,16
50/4	27 - 36	0,37
50/5	36 - 46	0,47
50/6	46 - 58	0,55
50/7	58 - 70	0,60
50/8	70 - 100	1,70



Needle Bearing Extractors

By strengthening collar and reducing graduation especially designed for extracting all most used needle bearings and sockets.

Art.- No.	for bores of mm	kg
50/N1	11,5 - 13	0,11
50/N2	13 - 15	0,11
50/N3	15 - 16,5	0,12
50/N4	16,5 - 18,5	0,11
50/N5	18,5 - 20	0,13
50/N6	20 - 24	0,13

Extractor Sets

in metal cases



Internal Extractors

Art.- No.	contents		kg
50/K0	4 Internal Extractors 1 Counter Stay	No. 50/0 - 50/3 No. 55/1	1,4
50/K1	5 Internal Extractors 2 Counter Stays	No. 50/1 - 50/5 No. 55/1 + 55/2	6,4
50/K2	7 Internal Extractors 2 Counter Stays	No. 50/1 - 50/7 No. 55/1 + 55/2	4,4
50/K3	6 Internal Extractors 1 Internal Extractor 3 Counter Stays	No. 50/0 - 50/6 No. 57/1 No. 55/1 + 55/2 + 58/1	12,0

Combined Sets

in metal cases

These maintenance sets comprise of a well assorted range of pulling and extracting tools to cover practically all essential workshop practice. Sets are laid out to deal with external and internal pulling jobs.



Art.- No.	contents		kg
52/K1	5 Internal Extractors 2 Counter Stays 1 Standard Puller 1 Pulling Chuck 1 Battery Terminal Puller	No. 50/1 - 50/5 No. 55/1 + 55/2 No. 10/1 No. 56 No. 40/1	9,1
52/K2	7 Internal Extractors 2 Counter Stays 2 Standard Pullers 1 Pulling Chuck 1 Battery Terminal Puller	No. 50/1 - 50/7 No. 55/1 + 55/2 No. 10/1 + 10/2 No. 56 No. 40/1	13,2
52/K3	6 Internal Extractors 1 Internal Extractor 3 Counter Stays 2 Standard Pullers 1 Pulling Chuck 1 Battery Terminal Puller	No. 50/1 - 50/6 No. 57/1 No. 55/1 + 55/2 + 58/1 No. 10/1 + 10/2 No. 56 No. 40/1	17,0
52/K4	8 Internal Extractors 2 Counter Stays 2 Standard Pullers 2 pairs of Standard- Extensions 1 Pulling Chuck 1 Battery Terminal Puller 1 Stud Extractor	No. 50/1 - 50/8 No. 55/1 + 55/3 No. 10/1 + 10/2 No. 10/AE + 10/BE No. 56 No. 40/1 No. 71/2	18,0

Internal Extractors

The regular spreading of the four segments enables a safe and gentle extraction of ball bearings, outer rings of ball bearings, bushes etc.

Art.- No.	for bores of mm		kg
53/1	5 - 7	2 segments	0,05
53/2	7 - 9	2 segments	0,05
53/3	9 - 12	2 segments	0,06
53/4	10 - 13	2 segments	0,06
53/5	13 - 17	4 segments	0,08
53/6	14 - 19	4 segments	0,08
53/7	16 - 21	4 segments	0,08
53/8	18 - 23	4 segments	0,08
53/9	20 - 25	4 segments	0,10
53/10	25 - 30	4 segments	0,12
53/11	30 - 37	4 segments	0,25
53/12	35 - 42	4 segments	0,25
53/13	38 - 45	4 segments	0,25
53/14	43 - 50	4 segments	0,40
53/15	45 - 55	6 segments	0,60
53/16	50 - 60	6 segments	0,70



Puller Sets

in metal cases

Art.- No.	contents	No.	kg
53/K1	5 Internal Extractors 1 Slide Hammer 1 Counter Stay	53/4, 53/6, 53/9, 53/10, 53/11 54/1 55/1	3,2
53/K2	6 Internal Extractors 1 Counter Stay	53/4, 53/6, 53/9, 53/10, 53/11, 53/13 55/1	3,3
53/K3	7 Internal Extractors 2 Counter Stays	53/4, 53/6, 53/9, 53/10, 53/11, 53/13, 57/0 55/1, 55/2	7,3
53/K4	6 Internal Extractors 2 Internal Extractors 3 Counter Stays	53/4, 53/6, 53/9, 53/10, 53/11, 53/13 57/0, 57/1 55/1, 55/2, 58/1	13,6
53/K5	6 Internal Extractors 1 Counter Stay 1 Pulling Chuck 1 Battery Term. Puller 1 Puller	53/4, 53/6, 53/9, 53/10, 53/11, 53/13 55/1 56 40/1 16/1 (alternative 10/1)	10,0
53/K6	7 Internal Extractors 2 Counter Stays 1 Pulling Chuck 1 Battery Term. Puller 2 Pullers	53/4, 53/6, 53/9, 53/10, 53/11, 53/13, 57/0 55/1, 55/2 56 40/1 10/1, 10/2 (alt. 16/1, 16/2)	15,0
53/K7	6 Internal Extractors 2 Internal Extractors 3 Counter Stays 1 Pulling Chuck 1 Battery Term. Puller 2 Pullers	53/4, 53/6, 53/9, 53/10, 53/11, 53/13 57/0, 57/1 55/1, 55/2, 58/1 56 40/1 10/1, 10/2 (alt. 16/1, 16/2)	21,6



54



Slide Hammer

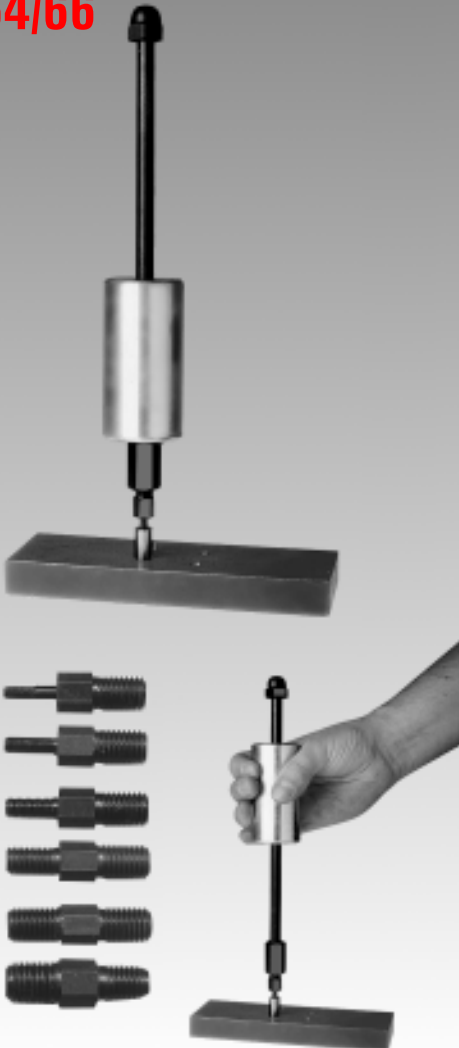
for Needle Bearing Extractors and Internal Extractors

Fast pulling of ball bearings.

In case of lack of space do not use a counter-stay; screw the puller bar on to the inner puller spindle instead and expel the ball bearing by slide hammer.

Art.- No.	for Internal Extractors No.	kg
54/1	50/02 - 50/3A, 50/N1 - 50/N6, 53/1 - 53/10, 57/01	0,7
54/2	50/4 - 50/5, 53/7 - 53/14, 57/01	1,3
54/3	50/5 - 50/7, 53/15 - 53/16, 57/0	2,1

54/66



Puller with Slide Hammer

for Dowel Pins with female thread

The slide hammer pulling unit is used for pulling off parts with tap-holes as well as for pulling off pins provided with female tapings.

for instance: DIN 7978 / ISO 8736
DIN 7979 / ISO 8735

Art.- No.	contents	kg
54/66	Slide Hammer Thread Adaptors: M4, M5, M6, M8, M10, M12	0,8

Thread Adaptors	fitting dowel pins	
	DIN 7978	DIN 7979
M 4	- A 6	- C 6
M 5	- A 8	- C 8
M 6	- A10	- C10 - C12
M 8	- A12 - A14	- C14 - C16
M10	- A16	- C20
M12	- A20	-

Counter Stay Devices

2-Arm

Art.- No.	for Internal Extractors No.	kg
55/1	50/02 - 50/3A, 50/N1 - 50/N6, 53/1 - 53/10, 57/01	0,6
55/2	50/4 - 50/7, 53/7 - 53/14, 57/01	1,5
55/3	50/4 - 50/8, 53/15 - 53/16, 57/0	2,4



Counter Stay Device

3-Arm

Advantage:

3 legs.
Even distribution of power.
Stability, no break away of counter-stay.
No tilting when pulling.
Also to be used as 2-Arm counter-stay.

Art.- No.	for Internal Extractors No.	kg
55/13	50/02 - 50/3A, 50/N1 - 50/N6, 53/1 - 53/10, 57/01	1,3
55/23	50/4 - 50/5, 53/7 - 53/14, 57/01	1,7



Thread Adaptor Set

for Counter Stay Devices

The combination of counter-stay and thread adaptor facilitates the pulling of parts with centric tapping holes.
The adapter is applied to the spindle of the counter-stay.

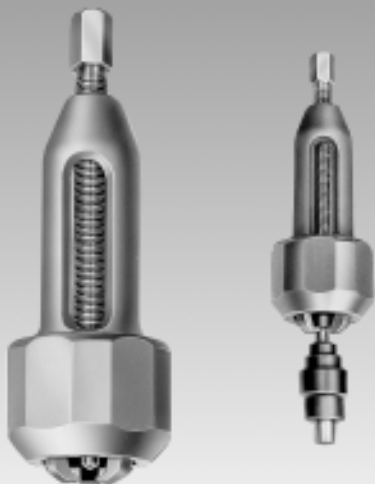
Art.- No.	for Counter Stay Device: No. 55/1, 55/2, 55/3, 55/13, 55/23	kg
55/AS	Set consist of one each Thread Adaptor No.: M 4, M 5 M 6, M 8 M10, M12	0,2



Order also reducing part for no. 55/2, 55/3 and 55/23

Pulling Chuck

56



Designed for effective removal of smallest bushes, rings, discs and bearings.

Art.- No.	 mm	 mm	 kg
56	5 - 32	135	1,5

For tightening jaws turn chuck nut by hand in the same way as drilling chucks. By doing this, jaws of legs are already firm in position, before the actual withdrawing work begins. It is thus possible to work successfully even where ordinary pulling legs would not grip.


It is, for instance, easy to pull bearings mounted against a shoulder. To do this, jaws of chuck are inserted into running groove of races. When jaws are tightened by chuck nut, bearings are withdrawn by turning centre screw. Illustration shows how pulling chuck works. The diameter of ring to be pulled is not much bigger than diameter of shaft.

Internal Extractor

57



Very strong pullers with enormous capacity. For larger ball bearings, rings, bushes, etc.


Art.- No.	for bores Ø mm	for use with No.	 kg
57/01	20 - 40	55/2, 55/23	0,4
57/0	40 - 75	55/3	1,2
57/1	55 - 115	58/1	2,1
57/2	100 - 200	58/2	6,3

Counter Stays

58



To obtain firm connection between extractor and pulling device centre screw of pulling device is screwed into nut of extractor.

Art.- No.	for use with No.	 kg
58/1	57/1	3,9
58/2	57/2	6,1

Separators

Indispensable for the removal of races, bearings, gear wheels etc. from hubs, shafts, where space is limited. The flat sides of separator halves give ample all round support.

Tape edge separator plates grip into the narrowest gap behind work to be withdrawn. Parts are removed by tightening forcing screw.

Drawing bolts of pulling unit thread into holes of separator thus covering a wide range of pulling work.

Extension bolts with connecting nut offer extra long reach.

This separator and pulling unit can be completed by 1 pair of legs of the standard series No. 10, thus obtaining a standard puller No.10.

A hydraulic ram is available for an easy thread saving pulling. This is a advisable for removing heavy automotive or industrial work.

The suitable hydraulic ram can be had subsequently to add to puller already in use.

Separators

Art.- No.	opening mm	for use with Pulling Units	kg
60/0	5 - 60	B10/1 + B10/1A, 62/0	0,6
60/1	12 - 75	B10/1A, 62/1	0,8
60/2	22 - 115	B10/2 + B10/2A, 62/2	2,1
60/3	30 - 155	B10/3 + B10/3A, 62/3	4,5
60/4	30 - 200	B10/3A, 62/4	6,3
60/5	40 - 280	62/5	15,5



Separators

with pressure beam

Because of a centre tightening screw with extra beam, these separators offer quick and easy handling.

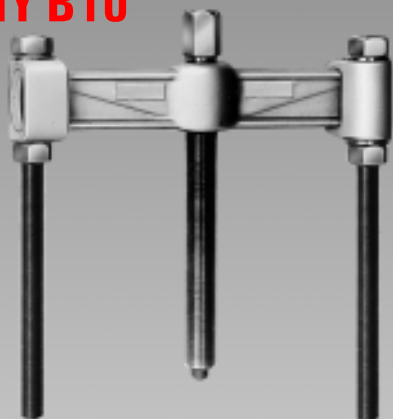
The two halves of separator are pressed evenly under parts to be withdrawn.

Separators with pressure beam

Art.- No.	opening mm	for use with Pulling Units	kg
61/0	5 - 60	B10/1 + B10/1A, 62/0	0,9
61/1	12 - 75	B10/1A, 62/1	1,2
61/2	22 - 115	B10/2 + B10/2A, 62/2	2,7
61/3	30 - 155	B10/3 + B10/3A, 62/3	6,3



B10 HY B10






ZBV






Pulling Units

for Separators and Thread Adaptors


mechanical

Art.- No.	 mm	 mm	for use with Separators No.	 kg
B10/1	100	110	60/0, 61/0	0,8
B10/1A	130	110	60/1, 61/1	0,9
B10/2	165	185	60/2, 61/2	2,9
B10/2A	205	185	60/2, 61/2	3,1
B10/3	260	260	60/3, 61/3	6,9
B10/3A	355	260	60/3, 60/4, 61/3	7,9
B10/4	530	260	60/3, 60/4, 61/3	11,0

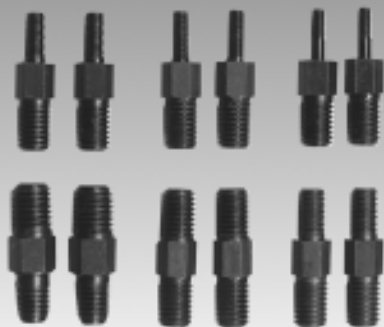
hydraulic

Art.- No.	 mm	 mm	for use with Separators No.	 kg
HY B10/2	165	185	60/2, 61/2	3,6
HY B10/2A	205	185	60/2, 61/2	3,8
HY B10/3	260	260	60/3, 61/3	8,4
HY B10/3A	355	260	60/3, 60/4, 61/3	9,4
HY B10/4	530	260	60/3, 60/4, 61/3	12,3

Extensions

Art.- No.	length mm	for use with fitting Puller No.	 kg
ZBV/1	100	B10/1, B10/1A	0,09
ZBV/2	150	B10/2, B10/2A HY B10/2, HY B10/2A	0,21
ZBV/3	150	B10/3, B10/3A, B10/4 HY B10/3, HY B10/3A, HY B10/4	0,37


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Thread Adaptors

full Sets




Each set consists of 1 pair of thread adaptors per kind of thread as well as 1 pair of connecting nuts for being fixed to the pulling bolt.

Art.- No.	thread size	for use with fitting Puller No.	 kg
AS/1	M 4, M 5, M 6, M 8, M10, M12,	B10/1, B10/1A	0,36
AS/2	M 8, M10, M12, M14, M16, M18,	B10/2, B10/2A	0,70
AS/3	M14, M16, M18, M20, M22, M24,	B10/3, B10/3A, B10/4	1,00




Pulling Units

for Separators and
Thread Adaptors


mechanical

Art.- No.	 mm	 mm	for use with Separators No.	 kg
62/0	45 - 110	110	60/0, 61/0	0,9
62/1	55 - 140	155	60/1, 61/1	1,3
62/2	60 - 215	200	60/2, 61/2	2,8
62/3	85 - 295	315	60/3, 61/3	6,0
62/4	120 - 350	305	60/3, 60/4, 61/3	8,0
62/5	140 - 435	320	60/5	14,0

hydraulic

Art.- No.	 mm	 mm	for use with Separators No.	 kg
HY 62/2	60 - 215	200	60/2, 61/2	4,1
HY 62/3	85 - 295	315	60/3, 61/3	9,2
HY 62/4	120 - 350	305	60/3, 60/4, 61/3	12,0
HY 62/5	140 - 435	320	60/5	16,0

Extensions


Art.- No.	length mm	for use with fitting Puller No.	 kg
ZBV/1	100	62/0, 62/1	0,09
ZBV/2	150	62/2, HY 62/2	0,21
ZBV/3	150	62/3, 62/4, HY 62/3, HY 62/4	0,37



Thread Adaptors

full Sets

Each set consists of 1 pair of thread adaptors per kind of thread as well as 1 pair of connecting nuts for being fixed to the pulling bolt.

Art.- No.	thread size	for use with fitting Puller No.	 kg
AS/1	M 4, M 5, M 6, M 8, M10, M12,	62/0, 62/1	0,36
AS/2	M 8, M10, M12, M14, M16, M18,	62/2	0,70
AS/3	M14, M16, M18, M20, M22, M24,	62/3	1,00




K60



Puller Sets

in metal cases


Art.- No.	contents		 kg		
K 60/0	1 Pulling Unit	No. B10/1	2,9		
	1 pair Extensions	No. ZBV/1			
	1 Separator	No. 60/0			
K 60/1	1 Pulling Unit	No. B10/1A	3,2		
	1 pair Extensions	No. ZBV/1			
	1 Separator	No. 60/1			
K 60/2	1 Pulling Unit	No. B10/2	7,5		
	1 pair Extensions	No. ZBV/2			
	1 Separator	No. 60/2			
K 60/3	1 Pulling Unit	No. B10/3	15,2		
	1 pair Extensions	No. ZBV/3			
	1 Separator	No. 60/3			
K 60/4	1 Pulling Unit	No. B10/3A	19,2	New	
	1 pair Extensions	No. ZBV/3			
	1 Separator	No. 60/4			

K61




Puller Sets

in metal cases

Art.- No.	contents		 kg	
K 61/0	1 Pulling Unit	No. B10/1	3,3	
	1 pair Extensions	No. ZBV/1		
	1 Separator	No. 61/0		
K 61/1	1 Pulling Unit	No. B10/1A	3,8	
	1 pair Extensions	No. ZBV/1		
	1 Separator	No. 61/1		
K 61/2	1 Pulling Unit	No. B10/2	10,0	
	1 pair Extensions	No. ZBV/2		
	1 Separator	No. 61/2		
K 61/3	1 Pulling Unit	No. B10/3	17,3	
	1 pair Extensions	No. ZBV/3		
	1 Separator	No. 61/3		

Puller Sets


in metal cases


Art.- No.	contents		 kg
K 62/0	1 Pulling Unit	No. 62/0	2,9
	1 Separator	No. 60/0	
	1 pair Extensions	No. ZBV/1	
K 62/1	1 Pulling Unit	No. 62/1	3,5
	1 Separator	No. 60/1	
	1 pair Extensions	No. ZBV/1	
K 62/2	1 Pulling Unit	No. 62/2	7,5
	1 Separator	No. 60/2	
	1 pair Extensions	No. ZBV/2	
K 62/3	1 Pulling Unit	No. 62/3	14,2
	1 Separator	No. 60/3	
	1 pair Extensions	No. ZBV/3	
K 62/4	1 Pulling Unit	No. 62/4	19,7
	1 Separator	No. 60/4	
	1 pair Extensions	No. ZBV/3	



Stud Setters and Extractors

BUCO stud extractors handle right and left threaded studs. The knurled wheel, operating on the gear principle for gripping, eliminates slipping. Very short studs can be extracted. Use any ordinary spanner, socket wrench etc. BUCO stud extractors have a remarkably wide reach, they are specially hardened, heat treated and well finished for long wear.

Art.- No.	working range Ø mm	 kg
71/1	4 - 13	0,28
71/2	8 - 19	0,45
71/3	17 - 28	0,50

Art.- No.	working range Ø mm	 kg
74	4 - 19	0,40



75



Stud Setters and Extractors

Suitable for smallest space

Stud Extractors, single

Art.- No.	size Ø mm	drive	SW mm	kg
75/6	6	1/2"	21	0,14
75/8	8	1/2"	21	0,14
75/10	10	1/2"	21	0,22
75/12	12	1/2"	21	0,22

Stud Extractors Set

Art.- No.	contents of the box 1 piece of sizes	kg
75/S	6mm, 8mm, 10mm, 12mm	0,78

80



Universal Pullers

2-Arm

A very attractive priced puller which can be applied for a wide range of work. For external as well as internal use, by simply turning legs. Please note extra large spread. Beam and legs heat treated.

Art.- No.	mm	mm	kg
80/1	10 - 100	100	0,6
80/1A	10 - 150	100	0,7

83



Steering Arm Pullers

For the removal of steering arm gears, ball bearing etc. Clamping device will press legs securely behind parts to be withdrawn.

Art.- No.	mm	mm	kg
83/1	20 - 70	85	1,1
83/2	20 - 100	100	1,6
83/3	30 - 150	150	3,0

Puller with special Legs




Especially for inner rings of wheel bearing at the front axle of VW

Art.- No.	mm	mm	kg
83/VAG	20 - 70	94	1,7

Separator Pullers

with Side Clamp

The type of puller is specially adapted for withdrawing all kinds of ball bearings, races, bushes, gears, etc. from blind holes. By tightening clamping device, the knife-like claws will give a positive grip behind any flush-mounted races etc. The slender form of legs are ideal for all work in confined space. For normal pulling work simply converse legs.


Art.- No.	 mm	 mm	 kg
85/1	20 - 100	175	2,1
85/2	40 - 145	270	4,0
85/3	40 - 160	330	4,5



85

Universal Hub Pullers

Fits all hub circles up to \varnothing 225 mm.
This construction allows for universal use on practically all makes of vehicles.


Art.- No.	description	 kg
100/3	with 3 Pulling Arms	4,0
100/4	with 4 Pulling Arms	4,5
100/5	with 5 Pulling Arms	5,0
100/H	Pulling Arm, loose	0,5



100

Universal Hub Pullers

For all cars and commercial vehicles. Fits hub circles up to \varnothing 250 mm.
Revolving end parts of legs ensure that no damage can be done to studs, axle or inner parts of the wheel.

Art.- No.	description	 kg
135/3	with 3 Pulling Arms	4,5
135/4	with 4 Pulling Arms	} with reducing rings 5,0
135/5	with 5 Pulling Arms	




135

Universal Hub Pullers

140
HY 140



A large and more powerful version with a wide range of heavy work yet easy to handle. Pulling is done without risk of damage to any parts. Also supplied with hydraulic ram.

Art.- No.	description	 kg
140	with centre screw	13,5
HY 140	with hydraulic ram	14,9

Puller supplied with 5 legs. Each leg (hole \varnothing 22mm) furnished with 2 reducing rings 14 and 18mm hole \varnothing . Sufficient holes in puller plate to take legs for varying bolt positions.

Legs are free to move in a controlled area to suit hubs of either small cars or heavy trucks.

Capacity: up to 425mm.



Revolving nut holding device together with movable legs take care of studs such avoiding any damage.

Steering Wheel Puller

150

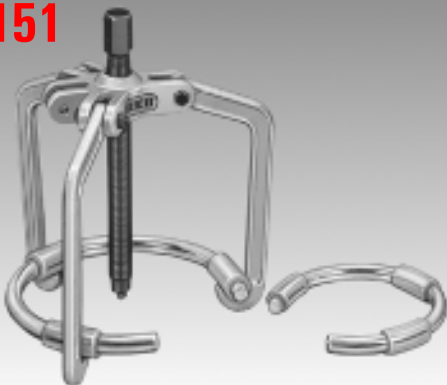


Very strong design for steering columns up to \varnothing 60mm. Complete with 5 interchangeable adaptor rings.



Art.- No.	 mm	 kg
150	155	5,1

Steering Wheel Puller

151






Adjustable legs for either twin or triple grip pulling on the steel rings. These have 3 rubber buffers to avoid damage to the wheels. For steering wheels with 2, 3, or 4 spokes.

Art.- No.		 mm	 kg
151	with 2 pulling rings	100 150	2,3

Special Steering Puller

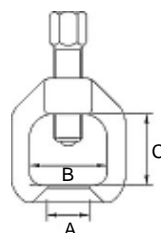
For Opel, Ford and many other cars.


Art.- No.		 mm	 mm	 kg
155/12	with 2 pairs of legs for standard and sports steering wheels	90	85 + 135	1,0
155/1	with 1 pair of short legs for standard steering wheels	90	85	0,60
155	puller beam with centre screw	90	-	0,36
155/1H	1 pair of short legs	-	85	0,23
155/2H	1 pair of long legs	-	135	0,38



Ball Joint Pullers

For easy and swift removal of ball pins from the tapered housing on steering arms.




Art.- No.	opening A mm	width B mm	height C mm	 kg
180/2	18	37	37	0,3
180/3	23	45	45	0,5
180/4	29	55	60	1,3
180/5	39	70	80	2,0
180/6	46	90	100	2,3



Ball Joint Pullers

Safe and easy in operation. For removing ball pins during the dismantling of ball and socket joints on tie-rods, etc.
To be used in confined areas.

Art.- No.	opening A mm	width B mm	height C mm	max. torque Nm	 kg
181/1	20	14	43	60	0,4
181/3	26	21	59	80	0,8



183



Ball Joint Puller

Very handy, many sided and specially suited where lack of space forbids entry of direct models.

Art.- No.	opening A mm	variable up to C mm	kg
183/1	22	20 - 50	0,7

185



Ball Joint Pullers

Art.- No.	opening A mm	variable up to C mm	leverage force	kg
185/1	20	12 - 50	1:2	1,3
185/2	20	60 - 80	1:2	1,6
185/4	40	90	1:1,5	3,0
185/1P	24	12 - 50	1:2	1,3

Porsche - service department tool, all types

187



Ball Joint Puller

for heavy Trucks

hydraulic 12 tons

Art.- No.	opening mm	variable up to mm	with fork No.	max. capacity ton	kg
187/1	25	110	187/G1	12	2,4
187/2	32	110	187/G2	12	2,5
187/3	47	110	187/G3	12	2,5


Fork, single

Art.- No.	opening mm	kg
187/G1	25	0,5
187/G2	32	0,6
187/G3	47	0,6

How it works: Unscrew tension nut from basic part. Put on suitable size. Rescrew tension nut. Put pusher into working position and preload it with tension nut. Screw in pressure screw into basic part. Hydraulics will start to work. Screw back pressure screw after use.

Fork Separators


This wedge-shaped fork allows quick loosening of ball joints, shock absorbers, pitman arms etc. If confronted with cramped quarters this handy fork proves itself to have very distinct advantages over any conventional ball joint puller. Use hammer to drive fork between parts to be separated.

Art.- No.	fork opening mm	for ball studs mm	 kg
190/1	18	15 - 25	0,70
190/2	23	25 - 35	0,75
190/3	29	30 - 45	0,80
190/4	40	40 - 60	1,0
190/5	45	50 - 70	1,1



Axle Bearing Puller

A special puller with very deep reach and 3 adjustment facilities in order to fit puller to any axle length. For an unproblematic pulling adjust legs parallel to axle and centre screw.

Art.- No.	 mm	 mm	 kg
200	45 - 75	750	9,5




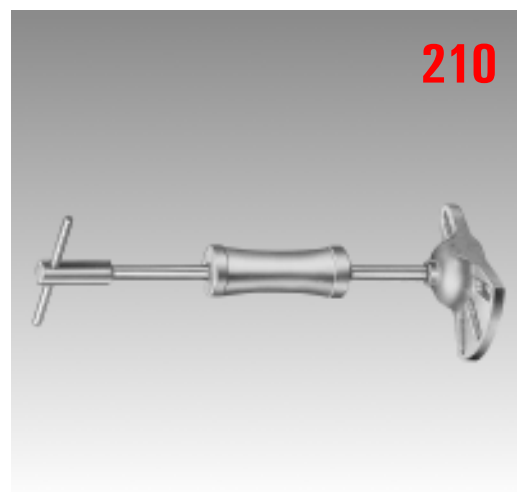
Flange Axle Puller

Essential for removing hubs with 4 or 5 bolts, such as Opel, Ford and many other makes.

A few smart blows with the sliding hammer will effect withdrawal without damage to axle.

This slide hammer unit can be used for many workshop pulling applications, where bolts and nuts can be fastened to flange.

Art.- No.	for bolt Ø mm	for hub circles Ø mm	 kg
210	up to 14	100 - 150	4,0




Nut Splitters

220



For releasing sized nuts without damaging bolt or stud threads
up to quality class 8.
 To avoid twisting when working forcing screw, keep body of splitter in wrenchgrip.


Art.- No.	for nuts wrenchgrip size		kg 
	SW mm	thread mm	
220/1	4 - 10	up to M 6	0,1
220/2	10 - 18	up to M 10	0,2
220/3	18 - 27	up to M 18	0,4
220/4	27 - 36	up to M 24	0,6

221



Hydraulic Nut Splitters

For breaking of rosted unloosable nuts.
 Thread bolt will not be damaged.
 Chisel blade hardened.
 The double cranking enables use even in small spaces.
 Low input of power by hydraulics.


Art.- No.	for nuts wrenchgrip size		max. torque Nm	max. capacity ton	kg 
	SW mm	thread mm			
221/1	7 - 22	M 4 - M 14	45	5	0,7
221/2	22 - 36	M 14 - M 22	50	13	3,8

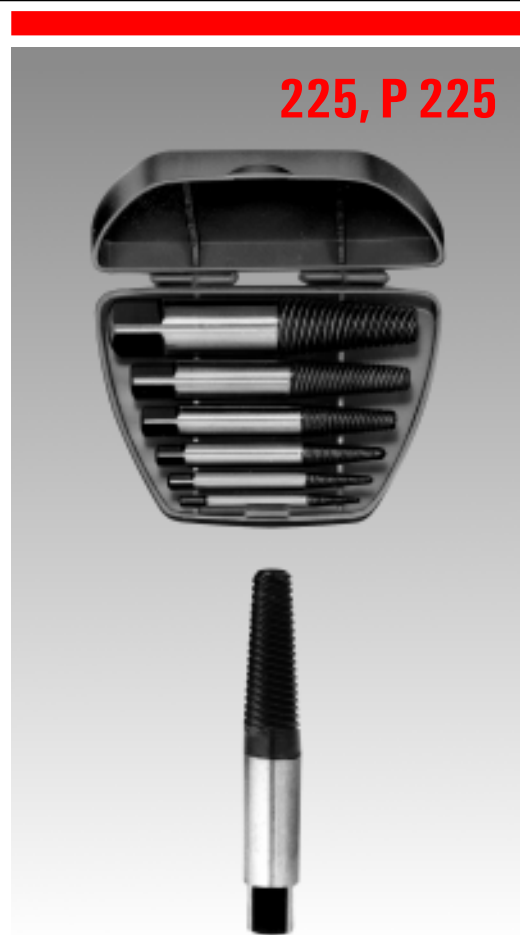
Hints for working:

1. Put chisel blade onto a nut axially to the thread bolt and fix it with the adjustable counter holder.
2. By slowly, shortly interrupted screwing in of the pressure screw the pressure is built up in order to break the nut free.
3. After breaking, the pressure screw must be put back into starting position. Chisel does not move back automatically. Therefore, it has to be pushed back into the starting position.
4. Push back chisel.

Screw Extractors

For removing damaged screws and studs. Drill hole into damaged part, then insert extractor and by turning left the damaged screw will be withdrawn.

Art.- No.	for screws Ø mm	suitable Ø size drill	 kg
225/1	3 - 6	1,8	0,003
225/2	6 - 8	2,5	0,005
225/3	8 - 11	3,7	0,012
225/4	11 - 14	5,5	0,025
225/5	14 - 18	7,0	0,045
225/6	18 - 24	10,0	0,095
225/7	24 - 33	13,5	0,175
225/8	33 - 45	18,5	0,295
225/9	45 - 52	25,0	0,560
P225/1	set of 5 extractors, size 1 - 5 in a plastic box		0,130
P225/2	set of 6 extractors, size 1 - 6 in a plastic box		0,235
P225/3	set of 8 extractors, size 1 - 8 in a plastic box		0,730




Puller - System

Puller system No. HY 360 can be combined as a modular system and the parts can be exchanged against each other.

Hints for working:

1. Before using, please screw back pressure screw into starting position and put pressure piece on to piston.
2. Preload spindle body against spindle.
3. If the total length of the hydraulic spindle is not sufficient please use lengthening spindles.
4. Having finished the pulling procedure please re-screw pressure screw into starting position.

Hydraulic Ram

Art.- No.	max. capacity to KN	stroke mm	max. torque Nm	for Puller No.	thread	 kg
HS/360	12 120	10	60	HY 360/1- HY 362/2	UN -1½" x 16 Gg.	1,4



Puller - System

HY 360



HY 361



HY 362 / 1



HY 362 / 2



Ram Extension

Art.- No.	extension	kg
360/V 50	50mm	0,14
360/V100	100mm	0,34
360/V150	150mm	0,55

2-Arm Pullers complete with Hydraulic-Ram

Art.- No.	mm	mm	with extension No.	kg
HY 360/1	50 - 100	100	360/V 50	3,0
HY 360/2	70 - 170	150	360/V100	3,2
HY 360/3	70 - 190	250	360/V150	3,7
HY 360/4	100 - 210	200	360/V150	3,9
HY 360/5	130 - 260	250	360/V150	4,2

3-Arm Pullers complete with Hydraulic-Ram

Art.- No.	mm	mm	with extension No.	kg
HY 361/1	50 - 100	100	360/V 50	3,4
HY 361/2	70 - 170	150	360/V100	3,8
HY 361/3	70 - 190	250	360/V150	4,7
HY 361/4	100 - 210	200	360/V150	4,9
HY 361/5	130 - 260	250	360/V150	5,4

2-Arm Puller complete with Hydraulic-Ram

Art.- No.	mm	mm	with extension No.	kg
HY 362/1	50 - 215	225	360/V150	6,5


Puller with tie rods and Hydraulic-Ram

Art.- No.	mm	mm	with extension No.	kg
HY 362/2	100 - 250	280	360/V150	7,0

Internal Extractor

Art.- No.	mm	mm	kg
362/51	30 - 180	140	2,6

Puller - System

Art.- No.	Spare parts for Puller-System	for Puller No.	 kg
HS/360	Hydraulic Ram HS/360	360/D1 HY360/1 - /5, HY361/1 - /5, HY362/1 - /2, HY362/51	1,4
360/V50	Ram Extension 50mm		0,15
360/V100	Ram Extension 100mm		0,4
360/V150	Ram Extension 150mm		0,6
360/A	Leg 100mm, spread 100mm	HY360/1, HY361/1	0,5
360/B	Leg 150mm, spread 170mm	HY360/2, HY361/2	0,6
360/C	Leg 250mm, spread 190mm	HY360/3, HY361/3	0,8
360/D	Leg 200mm, spread 210mm	HY360/4, HY361/4	1,0
360/E	Leg 250mm, spread 260mm	HY360/5, HY361/5	1,0
360/TR	2-Arm Beam with thread part, cap screws and nuts for Pullers	HY360/1 - HY360/5	0,8
361/KR	3-Arm Beam with thread part, cap screws and nuts for Pullers	HY361/1 - HY361/5	0,9
360/GE	Thread part for 2- / 3-Arm Beams	360/TR, 361/KR	0,3
362/TR	Beam for Puller	HY362/1, HY362/2	2,6
362/A	Legs 225mm with nut and washer for Puller	HY362/1	0,8
362/ZB	Tie Rods with nut, washer and end protector (1 pair) for Puller	HY362/2	1,0
362/ZBV	Extensions 250mm	HY362/2	0,8
60/2	Separator 40 - 115mm suitable for Puller	HY362/2	2,1
60/3	Separator 35 - 155mm suitable for Puller	HY362/2	4,5
362/51	Internal Extractor 30 - 180mm for use with Puller No. HY362/2 complete with screw, nut, washer and „pain hole“ beam converter.	HY362/2	2,7






904, 905



Pullers

for plastic fan wheels

The very slender legs allow insertion through slits of fan wheels on electric motors, to grip behind bush on hub.
By this method safe removal of the fragile fan is possible.

Art.- No.		 mm	 mm	 kg
904	2-arm	0 - 200	200	0,8
905	3-arm	0 - 200	200	1,1


909




Coil Spring Compressors

For quick and safe mounting or removal of all usual coils. The simple yet safe clamping device avoids the breaking away of the spring while working.
It is advisable to use 3 spring compressors simultaneously evenly placed. This will avoid sagging of spring.
Long and short spindles are interchangeable.

Spring Compressors

Art.- No.	length mm	Qty.	 kg
909/1	200	2 pcs.	1,9
909/2	300	2 pcs.	2,4
909/3	400	2 pcs.	2,6

Spare Spindles

Art.- No.	length mm	Qty.	 kg
909/1E	200	1 pc.	0,23
909/2E	300	1 pc.	0,44
909/3E	400	1 pc.	0,57

Hints for working:

Hook the catches of the spring compressor into the coil spring and grip as many turns as possible.
Tighten binding screws.
Use both threaded spindles alternatively and regularly in order to tighten or to loosen coil spring.

Universal Spring Compressors

for Mac Pherson Suspension Units

Change bumper without dismantling strut.
 Safety hoop protects against slipping.
 Drop-forged catches with broad bearing area according to spring gradient.
 To be used for MacPherson struts and transverse link axes with spring diameter of 110 - 118 mm.

Spring compressor meets the requirements of security regulations for maintenance of vehicles issued by German employer's liability insurance association (ZH1/454)

Complete without plastic-coated hooks

Art.- No.	working range		vehicles with an unladen weight of max.	max. capacity		 kg
	min. - max. mm	Ø mm		ton	KN	
910	240	110 - 180	2.000kg	3,5	35	3,5

Complete with plastic-coated hooks

Art.- No.	working range		vehicles with an unladen weight of max.	max. capacity		 kg
	min. - max. mm	Ø mm		ton	KN	
910/K	240	110 - 180	2.000kg	3,5	35	3,5

Hints for working:

Hook the catches of the spring compressor into the coil spring and grip as many turns as possible.

Use both threaded spindles alternatively and regularly in order to tighten or to loosen coil spring.



Car Repair Workshop Set


in metal case

Art.- No.	contents		 kg
930	1 Pair Spring Compressor	No. 909/3	16,9
	1 Ball Joint Puller	No. 185/1	
	1 Flange Axle Puller	No. 210	
	1 Dead-Blow Hammer, recoilles		
	1 Fork Separator	No. 190/1	
	1 Separator Puller with clamp	No. 85/1	
	1 Special - Lever Iron	No. 2120	

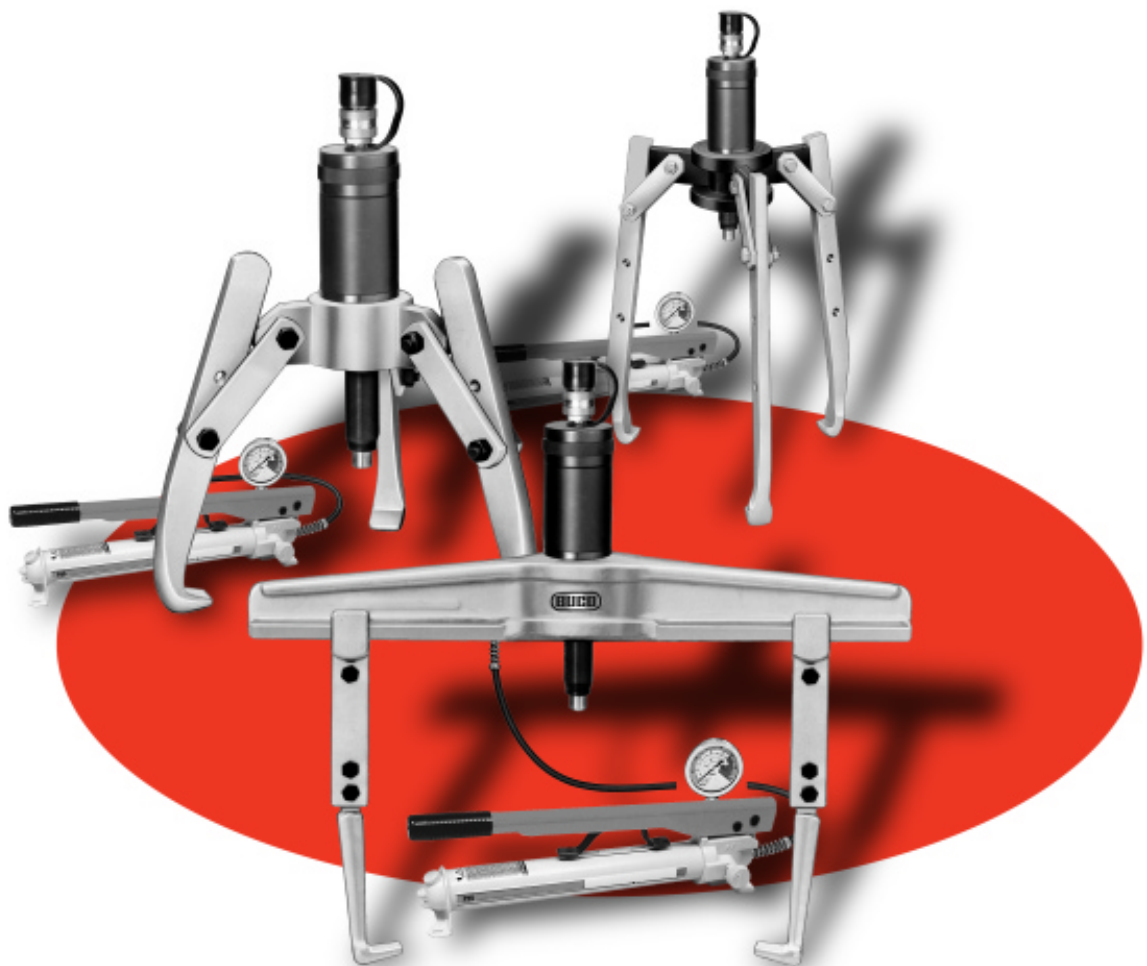


Oil-Hydraulic-Program

General view

	Art.- No.	capacity ton	 mm	Page
2-Arm	HY 960/10	10	640	55
	HY 960/15	15	640	55
	HY 960/17	17	640	55
3-Arm	HY 965/10	10	350	56
	HY 965/15	15	350	56
	HY 965/17	17	350	56
3-Arm	HY 971/15	15	700	57
	HY 971/17	17	700	57
3-Arm	HY 973/15	15	750	58
	HY 973/17	17	750	58
3-Arm	HY 975/20	20	750	58
	HY 975/30	30	750	59
	HY 975/50	50	1000	59
2-Arm	HY 980/20	20	420	60
	HY 980/30	30	700	60
	HY 980/50	50	1000	60
3-Arm	HY 985/20	20	500	61
	HY 985/30	30	900	61
	HY 985/50	50	1200	61

Oil-Hydraulic-Program



Safety instructions

Important information for use with hydraulic Pullers

Important - always think of safety!

Please pay always attention to this page and page 70. Follow corresponding hints for working given in the catalogue and attached manuals.

Protect yourself. Use protective dresses like safety shoes, helmet, protective glasses, gloves, protective tarpauling etc.

Follow legal prescriptions regarding technical tools.

Instruction for use:

Examine flawless condition of pulling device and hydraulic system before each use.

Follow indications given on type plates, observe indications referring to turning moments and loadings. Do not exceed indicated values.

The capacity of performance of a combined device as e.g. puller with hydraulic system always depends on the weakest element.

Pulling devices have to be kept clean and lubricated.

Assemble all parts to a stable solid unit before using the hydraulics.

Build up the hydraulic power slowly, observe changes in gripping position are realized as off-center positions or slipping. If so care for a better position of the pulling elements.

You should always use a more powerful puller. A 3-armed-puller at high power input offers a more regular distribution of power and the danger of slipping against a 2-arm-puller is minimized significantly.

Excessive heat (welding torch) damages seals and flexible tube of the hydraulic gadget and the puller.

Always use a manometer in order to avoid danger of uncontrolled overload.

Explanation of icons:

Working pressure may only be 700 bar maximum in whole system. Do not exceed this value.

15 to = 150 KN shows the maximum power of pressure of the cylinder.

Hydraulic Pumps

Hydraulic Hand Pump

- with pressure gauge
- with 2m hydraulic hose
- single-speed pump for use with single-action cylinders
- features a finger-tip control valve for instant release or pumping action
- max. handle effort approx. 64 kg

Air-Hydraulic Pump

- with pressure gauge
- with 2m hydraulic hose
- operate on 3 - 8 bar
- single-speed pump for use with single-action cylinders
- with internal relief valves to protect circuit components

Electric-Hydraulic Pump

- with pressure gauge
- with 2m hydraulic hose
- single-speed pump for use with single-action cylinders
- motor: 0,2 kw - 220/230 volt, 50/60 Hz
- valve: 2 way/automatic dump

Art.- No.	HP/1	HP/2	HP/3
description	Hydraulic Hand Pump	Air- Hydraulic Pump	Electric- Hydraulic Pump
max. capacity bar	700	700	700
connecting thread	3/8 NPTF	3/8 NPTF	3/8 NPTF
volume in liter per stroke	0,262	-	-
at 28 bar	-	-	1,9
at 200 bar	-	0,8	-
at 700 bar	-	0,1	0,16
measurement mm	L: 585 B: 121 H: 165	L: 255 B: 130 H: 200	L: 320 B: 195 H: 210
fitting cylinder No.	HZ/10, HZ/15 HZ/17, HZ/20 HZ/30, HZ/50	HZ/10, HZ/15 HZ/17, HZ/20 HZ/30, HZ/50	HZ/10, HZ/15 HZ/17, HZ/20 HZ/30, HZ/50
kg with Öl	6,9	8,7	11,5

HP



HP/1



HP/2



HP/3

HZ



HZ/10, HZ/15



HZ/17



HZ/20 - HZ/50

Hydraulic - Cylinders

- Single-action, with spring return
- quality for highest claim

Art.- No.	HZ/10	HZ/15	HZ/17
description	Hydraulic Cylinder	Hydraulic Cylinder	Ram- Hydraulic- Cylinder
stroke mm	155	156	50
hose- connecting thread	3/8 NPTF	3/8 NPTF	R3/8 NPTF
oil capacity liter	0,225	0,315	0,12
collar thread	2¼" - 14 UNC	M 68 x 2	G1" x 11 Gang
retracted hight	250 mm	272 mm	-
ram length mm	-	-	150 mm
total / max. length mm	403	430	312
fitting	HP/1	HP/1	HP/1
Hydraulic- Pump No.	HP/2	HP/2	HP/2
	HP/3	HP/3	HP/3
capacity ton	10	15	17
kg	4,3	7,0	5,0

Art.- No.	HZ/20	HZ/30	HZ/50
description	Hollow-Piston Cylinder	Hollow-Piston Cylinder	Hollow-Piston Cylinder
stroke mm	76	63	75
hose- connecting thread	3/8 NPTF	3/8 NPTF	3/8 NPTF
oil capacity liter	0,2	0,26	0,54
collar thread	1" - 8 UNC	1¼" - 7 UNC	1½" x 5½ UNS
retracted hight	154 mm	160 mm	181 mm
total length mm	670	790	975
fitting	HP/1	HP/1	HP/1
Hydraulic- Pump No.	HP/2	HP/2	HP/2
	HP/3	HP/3	HP/3
capacity ton	20	30	50
kg	10,6	16,5	31,5

Oil - Hydraulic - Pullers

2-Arm

- with parallel gripping legs
- complete with cylinder, hand pump, pressure gauge and 2m hose
- and a different extended legs are available

10 ton

operating pressure max. 700 bar

Art.- No.			with Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY960/10	640	225	HZ/10 thread 2 1/4 - 14 UNC piston stroke: 155mm	HP/1	36,0

15 ton

operating pressure max. 700 bar

Art.- No.			with Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY960/15	640	225	HZ/15 thread M 68 x 2 piston stroke: 156mm	HP/1	38,6

17 ton

operating pressure max. 700 bar

Art.- No.			with Ram- Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY960/17	640	225	HZ/17 thread G 1" x 11 Gang piston stroke: 50mm	HP/1	36,6

Legs for Puller No. HY960

Art.- No.	description	 mm	for Puller No.	Qty.	 kg
960/D - 225	set of legs	225	HY960/10, /15, /17	2 pcs.	4,6
960/D - 300	set of legs	300	HY960/10, HY960/15, HY960/17	2 pcs.	5,7
960/D - 400	set of legs	400	HY960/10, HY960/15, HY960/17	2 pcs.	6,4
960/D - 500	set of legs	500	HY960/10, HY960/15, HY960/17	2 pcs.	8,4

Spare Parts for No. HY960

Art.- No.	description	for Puller No.	Qty.	 kg
960/TR10	beam	HY960/10	1 pc.	15,0
960/TR15	beam	HY960/15	1 pc.	15,0
960/TR17	beam	HY 960/17	1 pc.	15,0

HY 960






HY 965

Oil - Hydraulic - Pullers




3-Arm

- with vertically adjustable legs
- complete with cylinder, hand pump, pressure gauge and 2m hose




10 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY 965/10	350	250	HZ/10 thread 2¼ - 14 UNC piston stroke: 155mm	HP/10	24,0



15 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY 965/15	350	250	HZ/15 thread M 68 x 2 piston stroke: 156mm	HP/1	27,0


17 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Ram- Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY 965/17	350	250	HZ /17 thread G 1" x 11 Gang piston stroke: 50mm	HP/1	24,7

Legs for Puller No. HY 965/10, HY 965/15, HY 965/17

Art.- No.	description	 mm	for Puller No.	Qty.	 kg
965/E - 225	Set of Legs	250	HY965/10, /15, /17	3 pcs.	4,5
965/E - 300	Set of Legs	350	HY965/10, /15, /17	3 pcs.	5,1
965/E - 400	Set of Legs	400	HY965/10, /15, /17	3 pcs.	5,4
965/E - 500	Set of Legs	500	HY965/10, /15, /17	3 pcs.	6,0

Spare Parts for Puller No. HY965/10, HY965/15, HY965/17

Art.- No.	description	for Puller No.	Qty.	 kg
965/KR10	3-arm beam with strap	HY960/10	1 pc.	5,6
965/KR15	cross-beam with strap	HY960/15	1 pc.	5,6
960/KR17	cross-beam with strap	HY960/17	1 pc.	5,6






Oil - Hydraulic - Pullers




3-Arm

- with radially adjustable beam-arms
- with parallel gripping legs
- with various reach
- complete with cylinder, hand pump, pressure gauge and 2m hose



15 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY 971/15	150 - 700	200	HZ/15 thread M 68 x 2 piston stroke: 156mm	HP/1	51,0


17 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Ram-Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY 971/17	150 - 700	200	HZ/17 thread G 1" x 11 Gg. piston stroke: 50mm	HP/1	49,0

Legs for Puller No. HY 971/15, HY 971/17

Art.- No.	description	 mm	for Puller No.	Qty.	 kg
971/E - 200	Set of Legs	200	HY971/15, /17	3 pcs.	7,0
971/E - 275	Set of Legs	275	HY971/15, /17	3 pcs.	10,0
971/E - 375	Set of Legs	375	HY971/15, /17	3 pcs.	12,0
971/E - 475	Set of Legs	475	HY971/15, /17	3 pcs.	15,0

Spare Parts for Puller No. HY 971/15, HY 971/17

Art.- No.	description	for Puller No.	Qty.	 kg
971/TR15	beam with brace ring	HY971/15	1 pc.	9,3
971/TR17	beam with brace ring	HY971/17	1 pc.	9,3
971/AR	beam-arm	HY971/15, /17	1 pc.	5,9

HY 971








Oil - Hydraulic - Pullers




3-Arm

- with vertically adjustable legs
- radially adjustable
- complete with cylinder, hand pump, pressure gauge and 2m hose



15 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY 973/15	750	475	HZ/15 thread M 68 x 2 piston stroke: 156mm	HP/1	56,6

17 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Ram-Hydraulic- Cylinder No.	with Hydraulic- Pump No.	 kg
HY 973/17	750	475	HZ/17 thread G 1" x 11 Gg. piston stroke: 50mm	HP/1	54,5

Spare Parts for Puller No. HY 973/15, HY 973/17

Art.- No.	description	 mm	for Puller No.	Qty.	 kg
973/E- 475	leg	475	HY973/15, /17	1 pc.	3,2
973/TR17	beam with brace ring		HY973/15	1 pc.	9,3
973/TR17	beam with brace ring		HY973/17	1 pc.	9,3
973/AR	beam-arm		HY973/15, /17	1 pc.	7,1






Oil - Hydraulic - Puller



3-Arm

- with radially adjustable beam-arms
- complete with cylinder, hand pump, pressure gauge and 2m hose

20 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Hollow-Piston Cylinder No.	with Hydraulic- Pump No.	 kg
HY975/20	750	325	HZ/20 piston stroke: 76mm	HP/1	56,0




Spare Parts

Art.- No.	description	 mm	for Puller No.	Qty.	 kg
975/E2-325	leg	325	HY975/20	1 pc.	3,2
975/TR20	beam with brace ring		HY975/20	1 pc.	12,9
975/AR20	beam-arm with strap		HY975/20	1 pc.	4,4

Oil - Hydraulic - Pullers



3-Arm

30 ton operating pressure max. 700 bar




Art.- No.	 mm	 mm	with Hollow-Piston Cylinder No.	with Hydraulic- Pump No.	 kg
HY 975/30	750	310	HZ/30	HP/1	94,0

piston stroke: 63mm

Spare Parts



Art.- No.	description	 mm	for Puller No.	Qty.	 kg
975/E3-310	leg	325	HY975/30	1 pc.	6,2
975/TR30	beam with brace ring		HY975/30	1 pc.	24,8
975/AR30	beam-arm with strap		HY975/30	1 pc.	8,1

50 ton operating pressure max. 700 bar

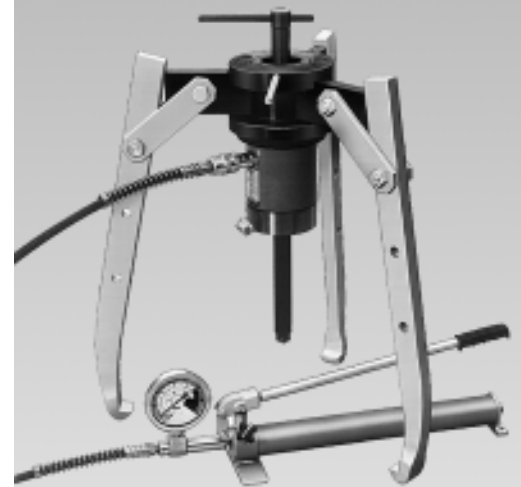
Art.- No.	 mm	 mm	with Hollow- Cylinder No.	with Hydraulic- Pump No.	 kg
HY 975/50	1000	430	HZ/50	HP/1	144,0

piston stroke: 75mm

Spare Parts

Art.- No.	description	 mm	for Puller No.	Qty.	 kg
975/E5-430	leg	430	HY975/50	1 pc.	16,2
975/TR50	beam with brace ring		HY975/50	1 pc.	52,0
975/AR50	beam-arm with strap		HY975/50	1 pc.	20,1

HY 975






HY 980

Oil - Hydraulic - Pullers

2-Arm



- with vertically adjustable legs
- complete with cylinder, hand pump, pressure gauge and 2m hose

20 ton operating pressure max. 700 bar




Art.- No.	 mm	 mm	with Hollow-Piston Cylinder No.	with Hydraulic- Pump No.	 kg
HY 980/20	420	280	HZ/20	HP/1	31,8

piston stroke: 76mm

Spare Parts for Puller No. HY 980/20



Art.- No.	description	 mm	for Puller No.	Qty.	 kg
980/E2-280	leg	280	HY980/20	1 pc.	3,2
980/TR 20	beam with strap			1 pc.	5,2

30 ton operating pressure max. 700 bar




Art.- No.	 mm	 mm	with Hollow-Piston Cylinder No.	with Hydraulic- Pump No.	 kg
HY 980/30	700	360	HZ/30	HP/1	47,0

piston stroke: 63mm

Spare Parts



Art.- No.	description	 mm	for Puller No.	Qty.	 kg
980/E3-360	leg	360	HY980/30	1 pc.	6,2
980/TR 30	beam with strap			1 pc.	8,1

50 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Hollow-Piston Cylinder No.	with Hydraulic- Pump No.	 kg
HY 980/50	1000	680	HZ/50	HP/1	88,0

piston stroke: 75mm

Spare Parts

Art.- No.	description	 mm	for Puller No.	Qty.	 kg
980/E5-680	leg	680	HY980/50	1 pc.	16,2
980/TR 50	2-arm beam		HY980/50	1 pc.	15,3






Oil - Hydraulic - Pullers

3-Arm



- with vertically adjustable legs
- complete with cylinder, hand pump, pressure gauge and 2m hose

20 ton operating pressure max. 700 bar




Art.- No.	 mm	 mm	with Hollow-Piston Cylinder No.	with Hydraulic- Pump No.	 kg
HY 985/20	500	280	HZ/20	HP/1	36,5

piston stroke: 76mm

Spare Parts



Art.- No.	description	 mm	for Puller No.	Qty.	 kg
985/E2-280	leg	280	HY985/20	1 pc.	3,2
985/KR 20	cross-beam with strap		HY985/20	1 pc.	6,7

30 ton operating pressure max. 700 bar




Art.- No.	 mm	 mm	with Hollow-Piston Cylinder No.	with Hydraulic- Pump No.	 kg
HY 985/30	900	360	HZ /30	HP/1	56,0

piston stroke: 63mm

Spare Parts



Art.- No.	description	 mm	for Puller No.	Qty.	 kg
985/E3-360	leg	360	HY985/30	1 pc.	6,2
985/KR 30	cross-beam with strap		HY985/30	1 pc.	10,7

50 ton operating pressure max. 700 bar

Art.- No.	 mm	 mm	with Hollow-Piston Cylinder No.	with Hydraulic- Pump No.	 kg
HY 985/50	1200	680	HZ/50	HP/1	110,0

piston stroke: 75mm

Spare Parts

Art.- No.	description	 mm	for Pullers No.	Qty.	 kg
985/E5-680	leg	680	HY985/50	1 pc.	16,2
985/KR 50	cross-beam		HY985/50	1 pc.	21,3

HY 985



Automotive - Program

General view

	Art.- No.	Page
<i>Track Alignment</i>	1010	64
<i>Gauges</i>	1012, 1013	64
	1015, 1016	65
	1017, 1018	65
	1019	65
<hr/>		
<i>Extensions</i>	1010/V	64
	1015/E	65
<hr/>		
<i>Tyre Levers, Mounting Bars</i>	2101 - 2106, 2108	66
	2111 - 2116	66
<hr/>		
<i>Special-Lever Irons</i>	2120	67
	2225	67
<hr/>		
<i>Tyre Lever</i>	2130	67
<hr/>		
<i>Towing Rods</i>	3000	68
	3010	68
	3050 - 3065	69
<hr/>		
<i>Holder for Towing Rods</i>	3090	69

Automotive - Program



1010 - 1013



Track Alignment Gauges

for inside measuring

Simple telescopic adjustment of length by sliding the precision steel tubing into one another. Springs press end tips against tyres, thus track difference can be instantly verified, from either millimetre or inch-scale.

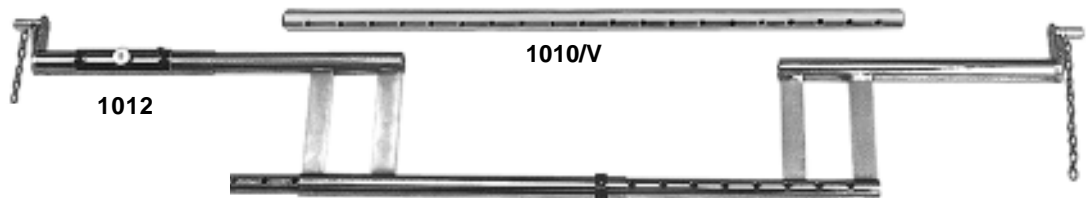
This instrument is designed to allow track testing without the help of workshop pit even by deep lying engines or bodywork.

Art.- No.	description	reading scale in	boom size mm	measuring range mm	kg
1010	Track Alignment Gauge	mm	100	820 - 1500	1,8
1010/Z	Track Alignment Gauge	inch.	100	33" - 58"	1,8
1010/V	Extension	-	-	- 2125	0,5



1010

Art.- No.	description	reading scale in	boom size mm	measuring range mm	kg
1012	Track Alignment Gauge	mm	190	1100 - 1650	2,5
1013	Track Alignment Gauge	mm	250	1100 - 1650	2,6
1010/V	Extension	-	-	- 2270	0,5



This track alignment gauge can also be used for tractors, vans, lorries, trucks and cars with confined space between the frontwheels.

1015 - 1019



Track Alignment Gauges

for outside measuring

Special advantages:

Simple and safe adjustment.

Solid construction guarantees highest degree of accuracy.

Minimal weight through the use of light metal.

Adjustable arms to fit small and large tyres.

Easy visible markings facilitate the adjusting of arms to the appropriate height.

The special BUCO measuring gauge with double reading scale for rough and precision adjustment secures an absolute exact reading of all testing results.

The precision gauge is protected against damage by a strong metal housing.

Very little room for storing is required as instruments are collapsible.

Finish: Steel tubing chromium plated.

Measuring:


Apply instrument from the front of car and put scale to "0" than push to the backward measuring points. Instrument remains in front of car throughout operation.

Full instructions of use are supplied with each instrument.

Track Alignment Gauges for outside measuring

A quality instrument with measuring gauge giving accuracy of 0,1 mm in testing results.


Measurable track difference 0 - 15 mm.

Art.- No.	description	measuring range outside mm	max. height mm	 kg
1015	Track Alignment Gauge	1800	550	5,0
1016	Track Alignment Gauge	2300	550	6,0
1015/F	Base Support (necessary by measuring about pits)			0,4
1015/U	BUCO Measuring Gauge for replacement			0,2



Track Alignment Gauges for outside measuring

A precision instrument of sturdy construction furnished with BUCO special measuring gauge which give a guaranteed testing accuracy of 0,1 mm.

Art.- No.	description	measuring range mm	max. height mm	 kg
1017	Track Alignment Gauge	1800	700	6,5
1018	Track Alignment Gauge	2300	700	7,4
1019	Track Alignment Gauge	2800	900	8,3
1015/U	BUCO Measuring Gauge for replacement	15		0,2
1019/V	BUCO Measuring Gauge Pin Extension	60		



These BUCO track alignment gauges have been designed for an even higher degree of accuracy and for universal use on all cars, vans, lorries, trucks etc.

Advantages over No. 1015 and 1016:


More stability through new designed arms, connected with adjustable stabilizers to base supports. Therefore a very high of testing accuracy. A new revolving feeler pin has been installed for measuring vehicles with protruding axle ends, hub caps, etc. The measuring capacity of 900 mm in height is sufficient even for largest wheels to carry out the two testing operations from one side.

The instruments, having two base supports, make testing above inspection pits possible.

Extensions

These extensions allow measurements with all the above instruments on vehicles with abnormal wheelbase.

Fit BUCO track alignment gauges No. 1015 – 1019.



Art.- No.	description	length mm	for track alignment gauges No.	 kg
1015/E1	extension	1000	1015, 1016, 1017, 1018, 1019	1,7
1015/E2	extension	1500	1015, 1016, 1017, 1018, 1019	2,2



Tyre Levers / Mounting Bars

2101-2106


Forged and both ends heat treated.
Finish: varnish hammered silver grey

	Art.- No.	length mm	 kg		
Straight - type	2101/1	150	0,10		
	2101/2	200	0,12		
	2101/3	300	0,38		
	2101/4	400	0,60		
	2101/5	500	1,00		
	2101/6	600	1,20		
	2101/7	700	1,40		
S - type	2104/3	300	0,38		
	2104/4	400	0,60		
	2104/5	500	1,00		
	2104/6	600	1,20		
	2104/7	700	1,40		
Knee - type	2106/3	300	0,38		
	2106/4	400	0,60		
	2106/5	500	1,00		
	2106/6	600	1,20		
	2106/7	700	1,40		
		Chrome-Vanadium	 mm		
Knee - type	2108/6	whole tempered	600	26 x 13	1,30

2111-2116


Tyre Levers / Mounting Bars

Chrome - Vanadium - Steel
whole tempered, finish: varnish hammered silver grey

	Art.- No.	length mm	 kg
Straight - type	2111/3	300	0,32
	2111/4	400	0,42
	2111/5	500	0,55
	2111/6	600	0,67
Knee - type	2116/3	300	0,32
	2116/4	400	0,42
	2116/5	500	0,55
	2116/6	600	0,67

Special - Lever Iron

For lift-off of cylinder head and of gears
 To loosen parts blocked by rust
 Put in and put out of ball bearings
 Chrome - Vanadium - Steel

Art.- No.	length mm	□ mm	 kg
2120	400	14	0,55



Tyre Lever

BUCO Tyre Levers are required for all tight fitting lorry, truck or car tyres.
 Drop forged quality, heat treated, bright zinc finish. Strong and approved quality.

Art.- No.	length mm	 kg
2130	300	1,9

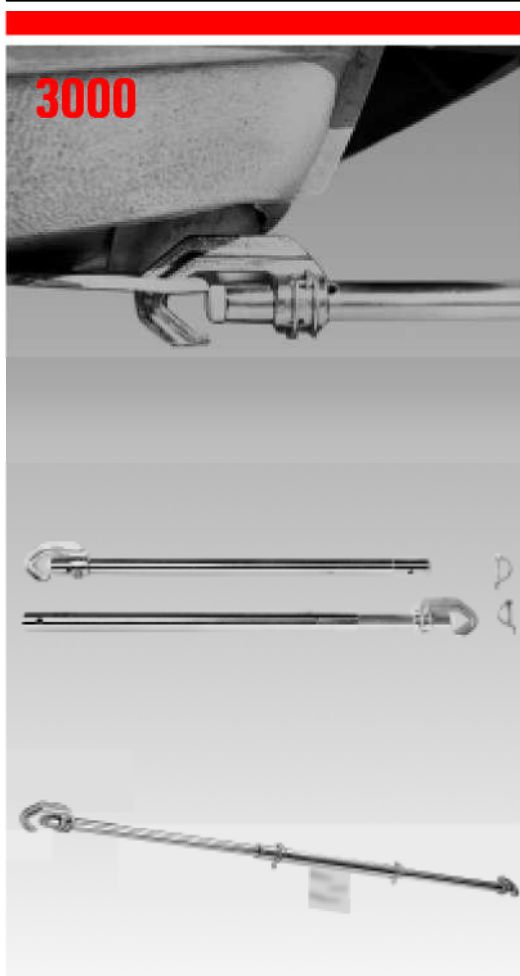


Brake adjusting Lever

for drumbrakes

Art.- No.	length mm	□ mm	 kg
2225	310	12 x 8	0,19





Towing Rod 3000

for cars

Art.-No. 3000

BUCO's telescopic Towing Rods offer decisive advantages:

No problems in towing – even for the unskilled.
 No jerks when starting or stopping.
 Very strong, precise, well designed model.
 Special space-saving handy trunk-fitting packing.
 Accurate and troublesome manoeuvring is unnecessary, because of the telescopic action with automatic stop.
 The universal snap closure hooks fit all towing eyes on cars and also trailer couplings.

Technical data:
 Chromium plated therefore lasting protection.
 Snap closure hooks drop forged of Chrome Vanadium steel hardened and heat treated.
 Very strong precision steel tubing with plastic pressure plug.

Total extended length:	1720 mm
Packing:	carton with strong plastic cover
Measurements:	665 x 85 x 32 mm
Weight:	4,2 kg
Pulling weight limit:	2,5 to

The functioning of the Telescoping Towing Rod:

1. Fit both parts together and fix with spring bolt. Do not yet pull out the telescope!
2. Bring snap closure towing hooks into position on car towing eye or coupling, fix spring bolts into fitting holes.
3. Start driving slowly and carefully until automatic stop grips, fix spring bolt – ready.



Towing Rod 3010

for cars

In the event of breakdown of a car with "Power" or "Servo brake" towing with a rope is dangerous if not impossible.
 The reduction of braking capacity to approx. 50% very often causes the towed car to roll into the back of the towing vehicle.
 With BUCO's Car Towing Rods even large distances can be overcome without any risk.

Art.-No. 3010

This is a strong easy to handle towing rod and should not be missing in any car. The 3 components dismantled are packed in a space – saving coloured carton with plastic cover.

The adjustable hooks guarantee simple and precise adaptation to all towing eyes or to all couplings.


Technical data:
 Bright zinc antirust finish, extra strong precision steel tubing.

Total length:	1680 mm
Packing:	carton with plastic cover
Measurements:	665 x 85 x 32 mm
Weight:	3,6 kg
Pulling weight limit:	2,5 to

Towing Rods

for lorries and trucks

The tow-rods are made for trucks (with trailer) and made of steel tube, on both sides welding coupling ring of ST 52 in forged version.
The end of the tube is welded together by well done round seam.
The standard coupling ring has a drilling of 40 mm.

Art.- No.	total length mm	length middle eyes mm	for trucks up to ton	tube/pipe according to DIN mm	 kg
3050	1900	1800	16	60,3 x 4	15,0
3051	2000	1900	16	60,3 x 4	15,5
3052	2100	2000	16	60,3 x 4	16,0
3053	2200	2100	16	60,3 x 4	16,5
3054	2350	2250	16	60,3 x 4	17,5
3055	2500	2400	16	60,3 x 4	18,5
3060	1900	1800	32	63,5 x 5	19,0
3061	2000	1900	32	63,5 x 6	20,0
3062	2100	2000	32	63,5 x 6	21,0
3063	2200	2100	32	63,5 x 6	22,0
3064	2350	2250	32	63,5 x 6	23,5
3065	2500	2400	32	63,5 x 6	25,0


Important

In order to avoid stalling of the coupling ring shaft within the tube and to avoid fatigue and break of the round seam, our tow-rods are additionally drilled in the tube and are connected close to the coupling ring by square welding. In consequence there are two more safety grips on both sides (similar to German army - NATO norm)

Special types

E.g. Coupling ring with 50 mm drilling, heavy type for trucks of 48 tons, trucks with special length, short delivery times, please enquire.

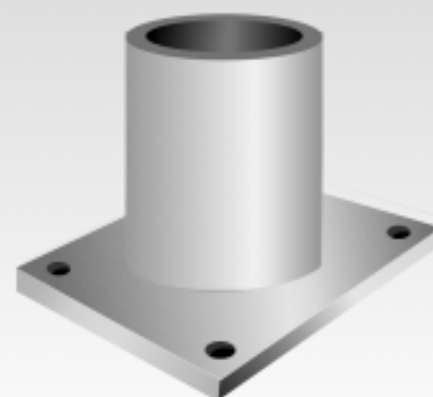
Holder for Towing Rods

Art.- No.	Type (material)	 kg
3090	basic sheet 80 x 80 mm 4 fixing holes 8,5 mm holding tube 38 Ø x 80 mm long with safety hole for spring plug 6 mm	0,6

3050 - 3065



3090



Safety instructions

How to find the right pulling device for your pulling procedure:

Ascertain possibility of gripping and space in order to always ensure a tight fitting and grabbing of the puller.

Compare size and measures of the part to be pulled off to the values indicated in the table and choose corresponding size of puller.

The type chosen in that way offers all necessary performance; however, the biggest size should be always used as safety should come first.

3-arm pullers better distribute the pulling power than 2-arm devices. If there is enough space, always use a 3-arm puller.

Working with pullers:

Check flawless condition of puller every time before using it.

If there are indications of wear and tear such as overloaded parts, grinded down parts or parts which are worn out by different treatments, please exchange them against new parts at once.

Do not use any air pressure or hammer screwer when moving the puller's spindle.

Care for secure put on of puller, if necessary use aid such as e.g. screw clamp.

Do not exceed technical indications on type plates or tables such as indications for turning moments and loads. Pay attention to manuals and hints for working according to different types given in the catalogue.

Indications of load and turning moments were established with new pullers and pulling devices like a testing house would do it. These indications are average values.

Wear and tear due to use and unfavourable circumstances in using can decrease the figures.

Should indications of overload, stiff working etc be observed when pulling, please stop procedure at once. Use a bigger puller or if necessary a different type of puller.

A 3-arm puller should always be preferred to a 2-arm puller as the first one distributes power more regularly. Result is a more regular, safer and easier pulling.

It is most important to observe values of load and turning moments when using hydraulic pullers or additional hydraulic presses. Do not exceed.

When pulling, please cover the danger zone, puller, part to be pulled off by a protecting tarpaulin in order to avoid injuries.

Wear protective clothes such as safety shoes, helmet, protective glasses, protective gloves etc.

Pay attention to laws on technical tools.

Maintain pullers and pulling devices regularly. This prolongs their life and protects against accidents.

Spindle and crosshead have always to be kept clean and to be well lubricated.

Please also read page 52.

Indications on measures and weight correspond to the current technical standard. They are average indications.

Changes in these values are subject to the constant development according to requirements.



See our web-site:

www.buco.de.

We present our full program as well as the latest models and interesting hints around our product range.