Live centers and face driver for turning and grinding

General catalogue

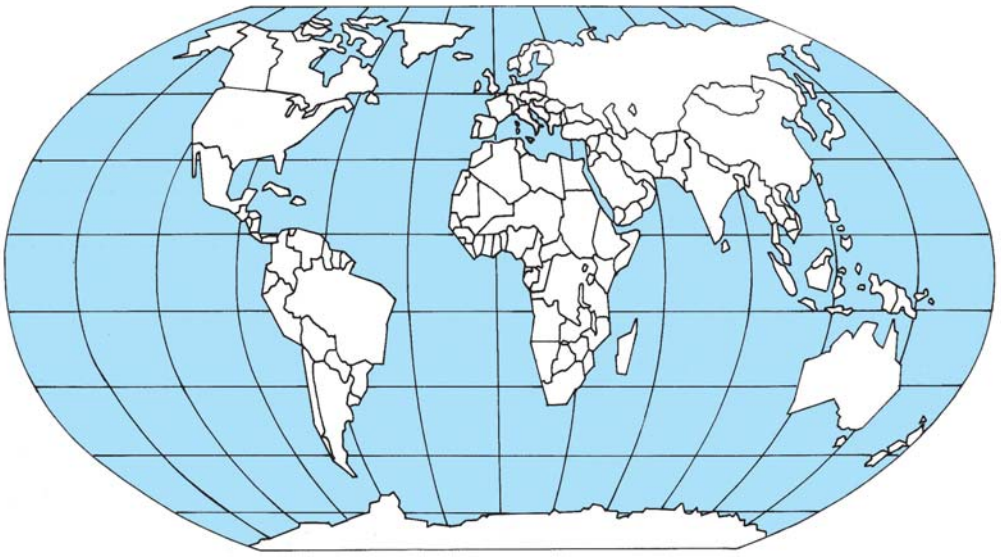
TECNOLOGIE FRB

Since 1960 ***TECNOLOGIE FRB*** *has designed, manufactured and marked many different patented product lines that are truly innovative and incorporate advanced technology turning, gear cutting and grinding concepts.*

Tecnologie FRB *has been heavily investing in research and development right from its inception, keeping a breast of the latest technical advances and constantly improving their product performances.*

This has ensured a long term relationship with many leading multinational companies.

TECNOLOGIE FRB *also works closely with leading machine tools manufacturers.*



CONTENTS

LIVE CENTERS WITH AXIAL LOAD DISTRIBUTION. THE ONLY MECHANISM OF ITS KIND IN THE WORLD

TECHNICAL SPECIFICATIONS

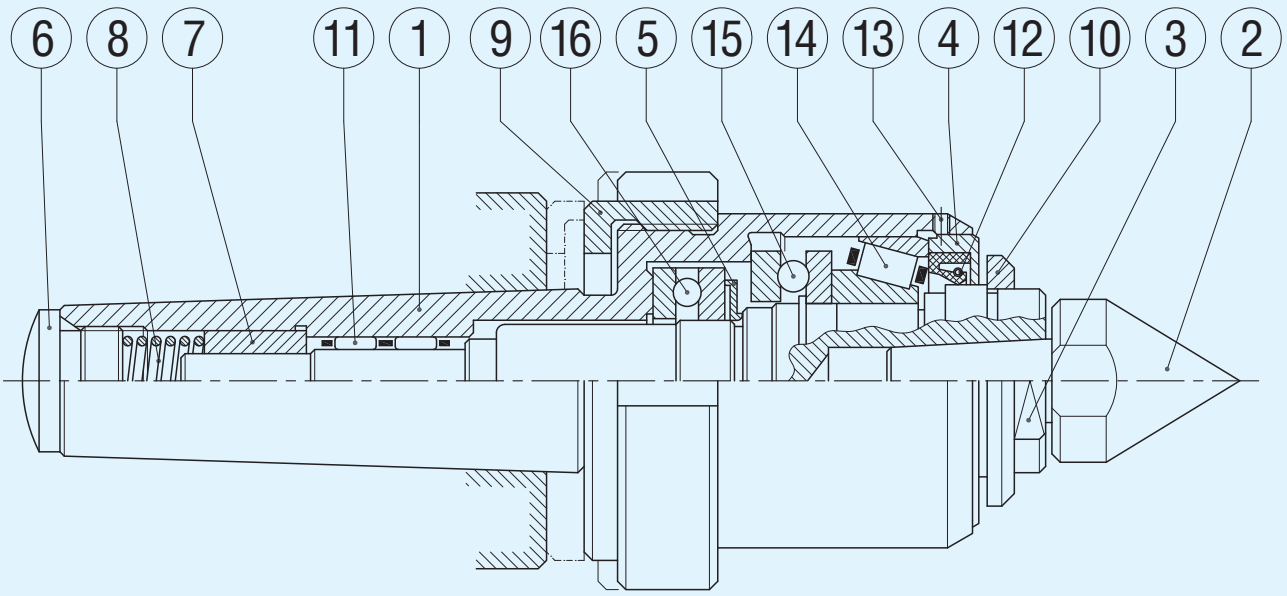
The FRB patented live center with axial load distribution has two thurst bearings ⑮ and ⑯ between which a specially designed belleville spring washer ⑤ is inserted to distribute the load between the two bearings. When a thrust acts on the center ② it will retract up to 0.25 mm which corresponds to 500 Kg of axial load for the FRB live center morse taper 4 that is absorbed by the back bearing ⑯.
As the center shaft ③ has now moved inside by 0.25 mm it comes to rest on the inner ring of the roller bearing ⑭, thereby transmitting the remaining force to the front bearing ⑮. This patented center allows the center to apply a very high rate of live center thrust to the process.

When turning shafts held by face driver, this live center allows machining with higher feed rate and cutting depth.

The two roller cages ⑪ support heavy radial loads, and a vibrations-damping bush ⑦ kept stiff by a spring ⑧ which prevents vibration. The adjustment ring ④ at the front of the live center can be adjusted during the life of the center.

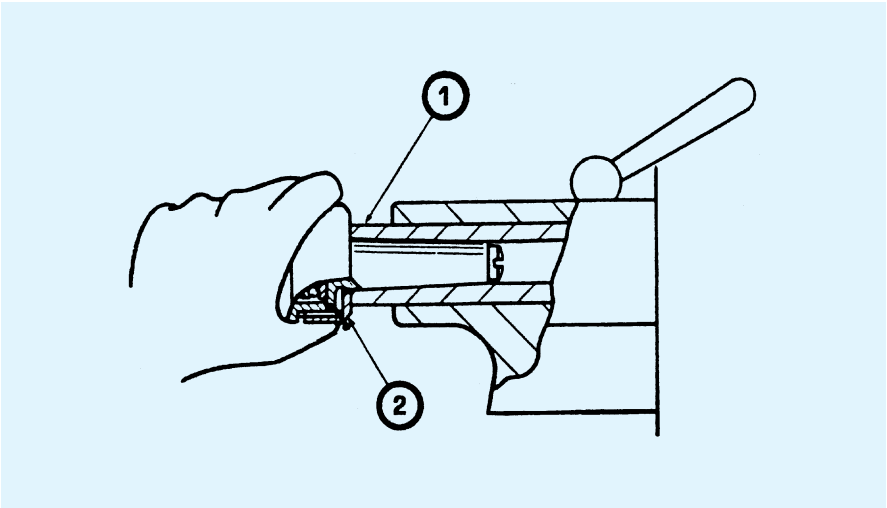
A chip guard ring ⑩ guarantees complete insulation of the sealing ring ⑫ from chips. The back extraction nut ⑨ prevents deflection and vibration.

PATENTED



① *Live center body*
② *Center*
③ *Shaft*
④ *Adjustment ring*
⑤ *Belleville spring washer*
⑥ *End cap*
⑦ *Vibration-damping bush*
⑧ *Spring*
⑨ *Extraction nut*
⑩ *Chip guard ring*
⑪ *Roller cages*
⑫ *Sealing ring*
⑬ *Retaining screw*
⑭ *Roller bearing*
⑮ *Front bearing*
⑯ *Back bearing*

THE EXTRACTION NUT



The extraction nut is fitted on the basic body to give the live center maximum stiffness and check deflection or vibrations caused by deformation of the basic body.

To fix, follow this procedure:

(a) fix the live center in the moving block;

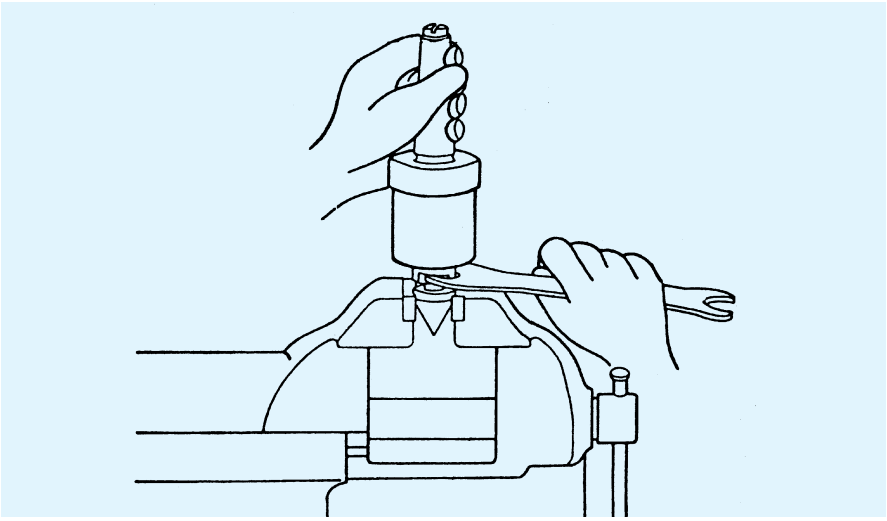
(b) unscrew the nut until it comes to rest on the live center sleeve;

(c) when it is in position tighter firmly with both hands.

(1) Live center sleeve.

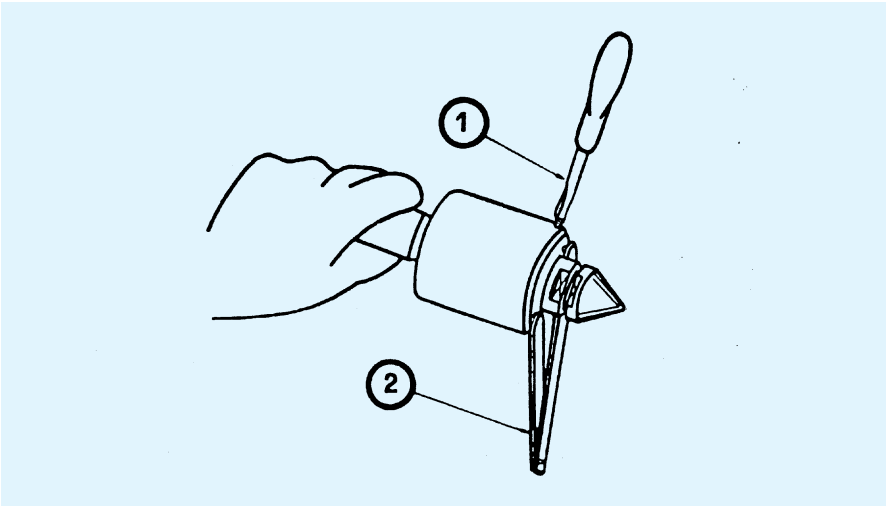
(2) Live center nut in position on the live center sleeve.

REMOVING THE INTERCHANGEABLE CENTER



Fit the spanner around the live center shaft and rotate firmly as when tightening a screw.

ADJUSTING THE 80 SERIES LIVE CENTERS



To ensure setting accuracy and avoid vibrations the live centers must occasionally be adjusted using the following procedure: tighten the nut until the cylindrical roller bearing ring is positioned firmly on the tapers.

(1) Loosening the adjusting nut screw.

(2) Use torque wrench for loosening or tightening the live center adjusting nut.

The 85 live centers need no adjusting.

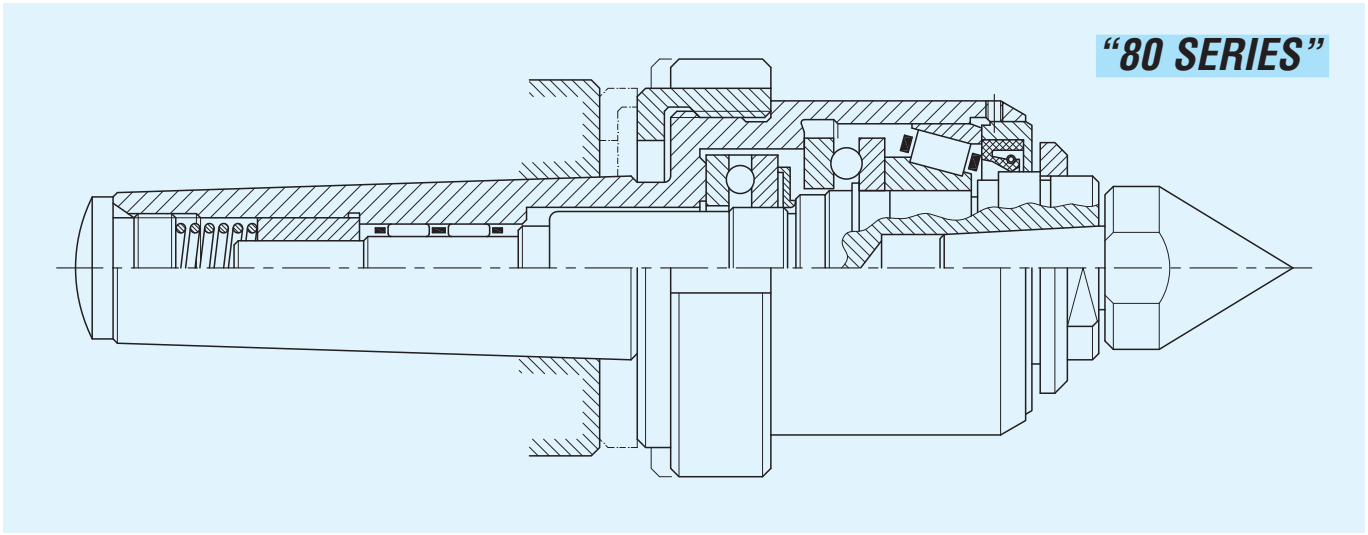
Note:

As the live centers have axial load distribution when are not against the workpiece (so not subjected to axial load) they do not travel smoothly; this is due to the counter pressure of the spring which distributes the axial load between the two thrust bearings.

FRB **80 SERIES** LIVE CENTER WITH AXIAL LOAD DISTRIBUTION AND TAPER ROLLERS BEARING

FEATURES

The "80 series" is the basic series and has the following features: the front bearing has tapered rollers that can be adjusted by a ring nut. This bearing has been lubricated by the factory and requires no maintenance for the working life of the live center. About every 900 operating hours the tapered rollers bearing fit can be checked and adjusted, if needed, by means of the adjusting ring.
For working parameters see charts at page 7. This significantly reduces live center down time and at the same time, it is possible to work with greater radial and axial loads. This live center is suitable for average to heavy duty tasks.

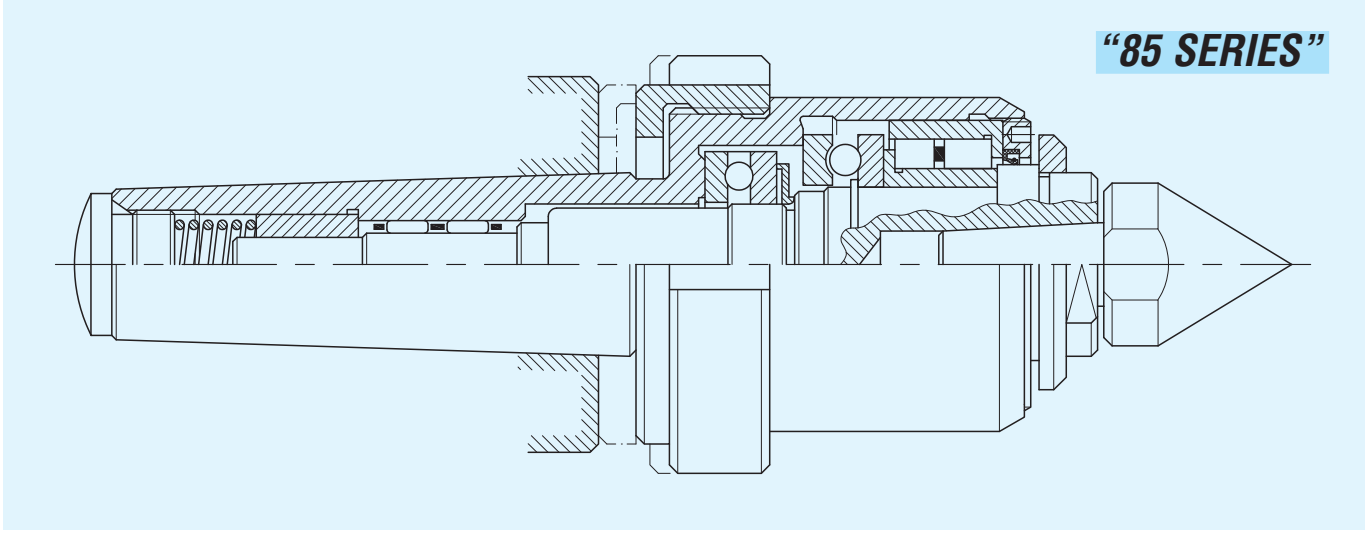


FRB **85 SERIES** LIVE CENTER WITH AXIAL LOAD DISTIBUTION AND CYLINDRICAL ROLLERS BEARING

FEATURES

The "85 series" was created to solve the problem of the high rotation speeds and heavy loads of modern CNC lathes. To enable the live center to operate at such high speeds the radial taper rollers bearing has been replaced by a twin race of radial cylindrical rollers bearing.

Another advantage of this series is that no adjustment is required as the bearing assembly consists of cylindrical rollers bearing. This bearing has been lubricated by the factory and requires no maintenance for the working life of the live center. This live center is suitable for all types of light and heavy duty tasks.



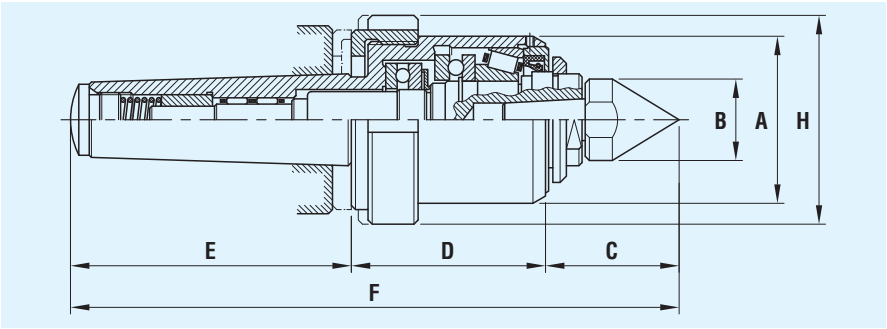
FOR FURTHER AND MORE DETAILED INFORMATION,
CONTACT OUR TECHNICAL OFFICE

LIVE CENTERS FOR TURNING

FRB LIVE CENTER WITH AXIAL LOAD DISTRIBUTION AND ADJUSTABLE RADIAL TAPER ROLLER BEARING. LUBRICATED WITH SPECIAL MAINTENANCE FREE GREASE (with support and extraction nut)

"80 SERIES"

LIVE CENTER WITH INTECHANGEABLE CENTER SUPPORT SHAFT



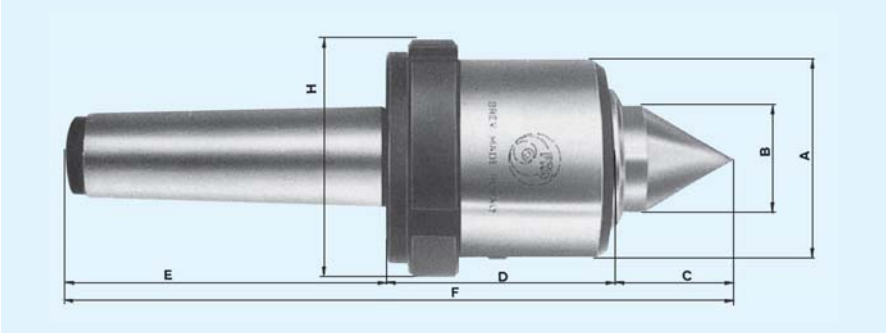
Code	Morse Taper	Dimensions in mm.						
		C	D	E	A	B	F	H
010180121	MT2	38	56	67	49	21	161	58
010180131	MT3	43	62.5	83	56.5	26	188.5	66
010180141	MT4	48,5	68	103	62	29	219.5	74
010180151	MT5	54	83	136	80	34	272	88
010180161	MT6	65	123	189	119	43	376	130

FEATURES

The interchangeable center enables the operator to rapidly fit the center required for the task at hand and to easily replace centers without having to change the complete shaft. It is therefore ideal for a working environment in which different types of machining are carried out.

Notes:
The live center is fitted with an FR 95 center as standard (as illustrated). For other types of center see page 10-11. Special kinds of center can be supplied on request.

LIVE CENTER WITH INTEGRAL SHAFT

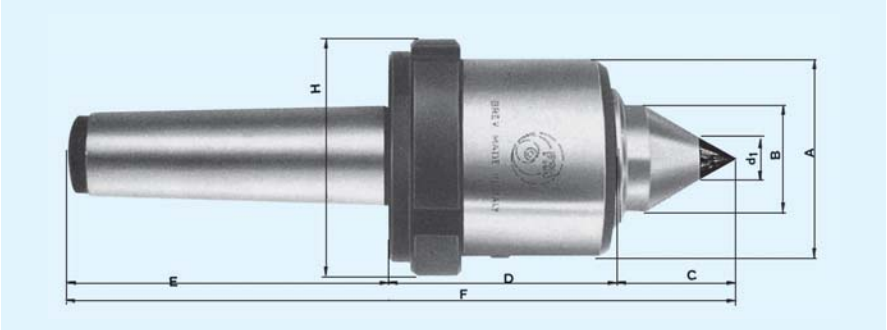


Code	Morse Taper	Dimensions in mm.						
		C	D	E	A	B	F	H
010180123	MT2	28	56	67	49	21	151	58
010180133	MT3	35.5	62.5	83	56.5	29	181	66
010180143	MT4	40	68	103	62	33	211	74
010180153	MT5	45	83	136	80	36	263	88
010180163	MT6	67	123	189	119	57.5	378	130

FEATURES

The integral shaft guarantees greater stiffness and ensures extremely small runout error (measured at the tip and on the workpiece). It is therefore suitable for tasks requiring high precision and because of the reduced protrusion of the shaft from the body, it is also suitable for machining very heavy workpieces.

LIVE CENTER WITH INTEGRAL SHAFT AND CARBIDE TIP INSERT



Code	Morse Taper	Dimensions in mm.							
		C	D	E	A	B	F	d'	H
010180125	MT2	28	56	67	49	21	151	6	58
010180135	MT3	35.5	62.5	83	56.5	29	181	10	66
010180145	MT4	40	68	103	62	33	211	12	74
010180155	MT5	45	83	136	80	36	263	14	88
010180165	MT6	67	123	189	119	57.5	378	20	130

FEATURES

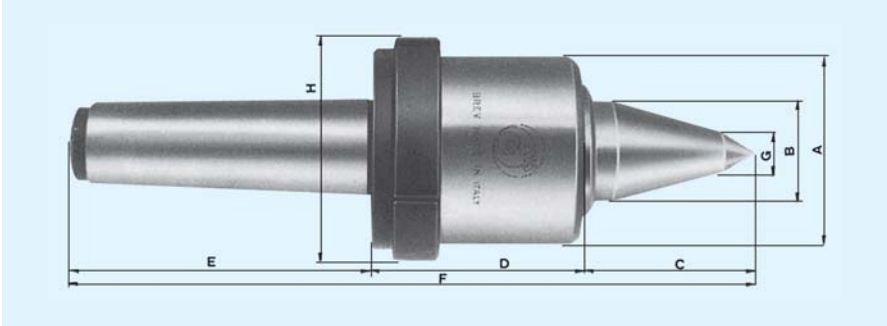
This live center is also used for turning parts without centers or with rough centers. The integral shaft ensures extremely small runout error (measured at the tip and on the workpiece) and its superior stiffness reduces working vibrations.

LIVE CENTERS FOR TURNING

FRB LIVE CENTER WITH AXIAL LOAD DISTRIBUTION AND ADJUSTABLE RADIAL TAPER ROLLER BEARING. LUBRICATED WITH SPECIAL MAINTENANCE FREE GREASE (with support and extraction nut)

"80 SERIES"

LIVE CENTER WITH EXTENDED INTEGRAL SHAFT

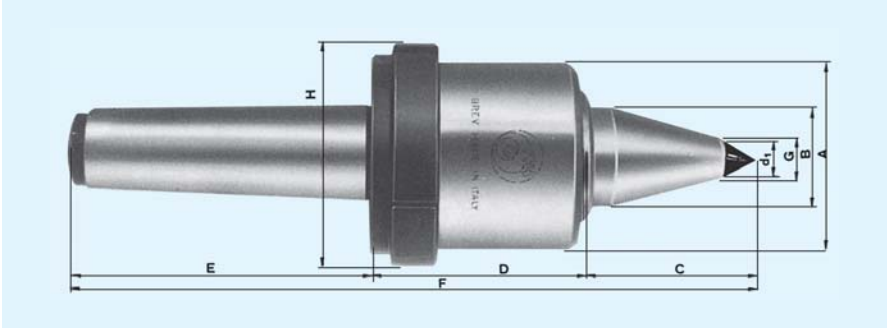


Code	Morse Taper	Dimensions in mm.							
		C	D	E	A	B	F	G	H
010180124	MT2	47	56	67	49	21	170	8	58
010180134	MT3	55	62.5	83	56.5	29	200.5	12	66
010180144	MT4	60	68	103	62	33	231	14	74
010180154	MT5	62	83	136	80	36	280	16	88
010180164	MT6	90	123	189	119	57.5	401	25	130

FEATURES

The extended integral shaft ensures extremely small runout error on the workpiece and its slender point makes it ideal for machining thin workpieces, even when close to the live center.
This live center is therefore ideal for precision machining of small sized components.

LIVE CENTER WITH EXTENDED INTEGRAL SHAFT AND CARBIDE TIP INSERT

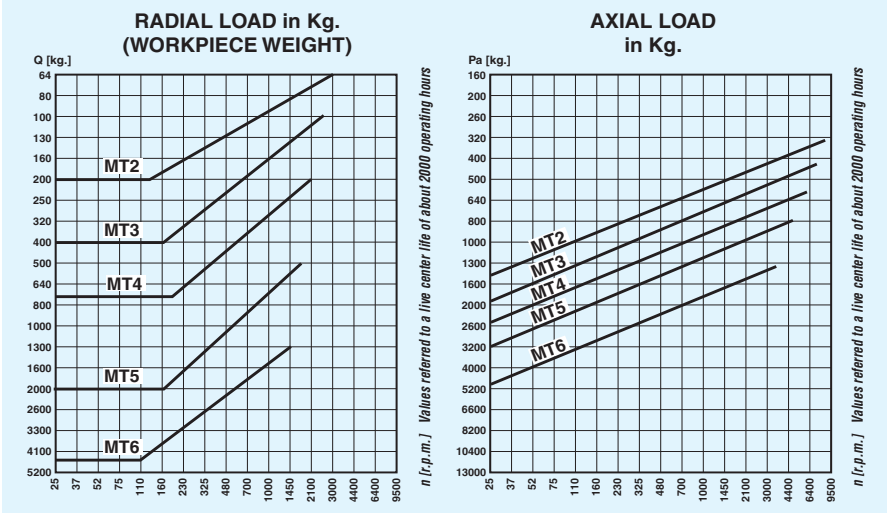


Code	Morse Taper	Dimensions in mm.								
		C	D	E	A	B	F	G	d'	H
010180126	MT2	47	56	67	49	21	170	8	6	58
010180136	MT3	55	62.5	83	56.5	29	200.5	12	10	66
010180146	MT4	60	68	103	62	33	231	15	12	74
010180156	MT5	62	83	136	80	36	280	18	14	88
010180166	MT6	90	123	189	119	57.5	401	25	20	130

FEATURES

It is used in special cases for turning parts without centers or with rough centers.
The extended integral shaft ensures extremely small runout error on the workpiece and its slender point makes it ideal for machining thin workpieces, even when close to the live center.
This live center is therefore ideal for precision machining of small sized components.

LOAD CHARTS



Notes:

The load values refer to the model with an integral shaft and a live center life of about 2000 operating hours. Tests have shown that the live center can however be used for a longer or shorter period, depending on the types of machining task it undertakes. For other types of live center (with interchangeable center and extended integral shaft) the load values indicated on the graphs should be reduced.

Example:

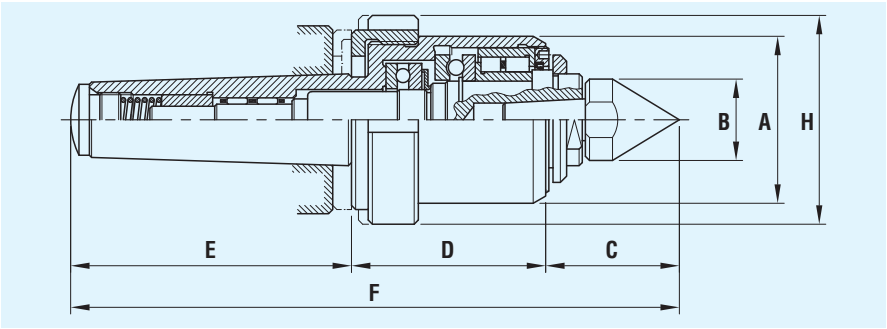
Permitted maximum loads for the MT4 live center with integral shaft at n = 1000 r.p.m.
Radial load Q = 320 kg
Axial load Pa = 900 kg

LIVE CENTERS FOR TURNING

FRB LIVE CENTER WITH AXIAL LOAD DISTRIBUTION AND RADIAL CYLINDRICAL ROLLER BEARING. LUBRICATED WITH SPECIAL MAINTENANCE FREE GREASE (with support and extraction nut)

"85 SERIES"

LIVE CENTER WITH INTERCHANGEABLE CENTER SUPPORT SHAFT



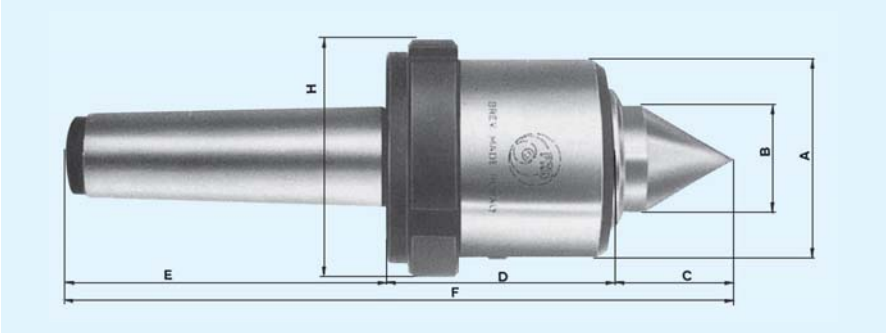
Code	Morse Taper	Dimensions in mm.						
		C	D	E	A	B	F	H
010185121	MT2	38	56	67	49	21	161	58
010185131	MT3	43	62.5	83	56.5	26	188.5	66
010185141	MT4	48.5	68	103	62	29	219.5	74
010185151	MT5	54	83	136	80	34	272	88
010185161	MT6	65	123	189	119	43	376	130

FEATURES

The interchangeable center enables the operator to rapidly fit the center required for the task at hand and to easily replace centers without having to change the complete shaft. It is therefore ideal for a working environment in which different types of machining are carried out.

Notes:
The live center is fitted with an FR 95 center as standard (as illustrated). For other types of center see page 10-11. Special kinds of center can be supplied on request.

LIVE CENTER WITH INTEGRAL SHAFT



Code	Morse Taper	Dimensions in mm.						
		C	D	E	A	B	F	H
010185123	MT2	28	56	67	49	21	151	58
010185133	MT3	35.5	62.5	83	56.5	29	181	66
010185143	MT4	40	68	103	62	33	211	74
010185153	MT5	45	83	136	80	36	263	88
010185163	MT6	67	123	189	119	57.5	378	130

FEATURES

The integral shaft guarantees greater stiffness and ensures extremely small runout error (measured at the tip and on the workpiece). It is therefore suitable for tasks requiring high precision and because of the reduced protrusion of the shaft from the body, it is also suitable for machining very heavy workpieces.

LIVE CENTER WITH INTEGRAL SHAFT AND CARBIDE TIP INSERT

Code	Morse Taper	Dimensions in mm.							
		C	D	E	A	B	F	d_1	H
010185125	MT2	28	56	67	49	21	151	6	58
010185135	MT3	35.5	62.5	83	56.5	29	181	10	66
010185145	MT4	40	68	103	62	33	211	12	74
010185155	MT5	45	83	136	80	36	263	18	88
010185165	MT6	67	123	189	119	57.5	378	20	130

FEATURES

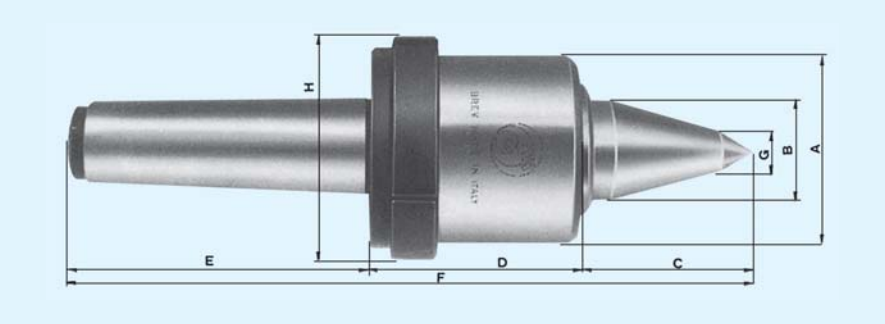
This live center is also used for turning parts without centers or with rough centers. The integral shaft ensures extremely small runout error (measured at the tip and on the workpiece) and its superior stiffness reduces working vibrations.
It is therefore suitable for high precision machining.

LIVE CENTERS FOR TURNING

FRB LIVE CENTER WITH AXIAL LOAD DISTRIBUTION AND RADIAL CYLINDRICAL ROLLER BEARING. LUBRICATED WITH SPECIAL MAINTENANCE FREE GREASE (with support and extraction nut)

"85 SERIES"

LIVE CENTER WITH EXTENDED INTEGRAL SHAFT

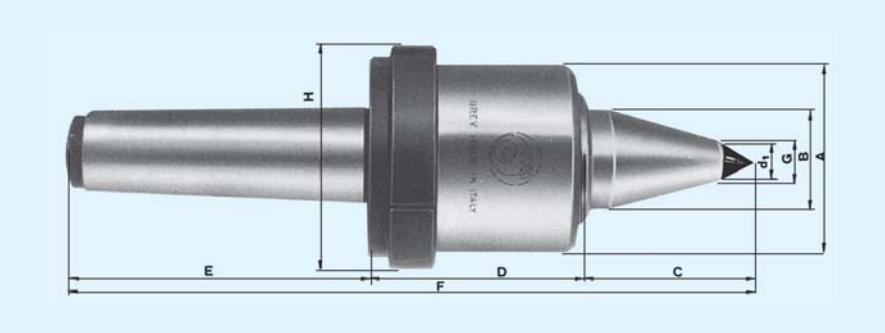


Code	Morse Taper	Dimensions in mm.							
		C	D	E	A	B	F	G	H
010185124	MT2	47	56	67	49	21	170	8	58
010185134	MT3	55	62.5	83	56.5	29	200.5	12	66
010185144	MT4	60	68	103	62	33	231	14	74
010185154	MT5	62	83	136	80	36	280	16	88
010185164	MT6	90	123	189	119	57.5	401	25	130

FEATURES

The extended integral shaft ensures extremely small runout error on the workpiece and its slender point makes it ideal for machining thin workpieces, even when close to the live center.
This live center is therefore ideal for precision machining of small sized components.

LIVE CENTER WITH EXTENDED INTEGRAL SHAFT AND CARBIDE TIP INSERT



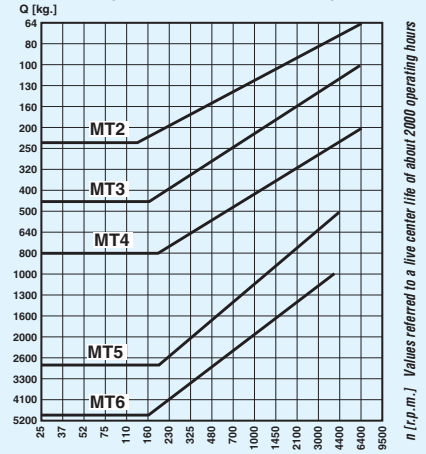
Code	Morse Taper	Dimensions in mm.								
		C	D	E	A	B	F	G	d'	H
010185126	MT2	47	56	67	49	21	170	8	6	58
010185136	MT3	55	62.5	83	56.5	29	200.5	12	10	66
010185146	MT4	60	68	103	62	33	231	15	12	74
010185156	MT5	62	83	136	80	36	280	18	14	88
010185166	MT6	90	123	189	119	57.5	401	25	20	130

FEATURES

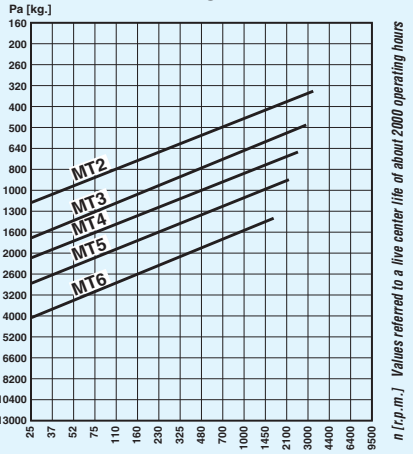
It is used in special cases for turning parts without centers or with rough centers.
The extended integral shaft ensures extremely small runout error on the workpiece and its slender point makes it ideal for machining thin workpieces, even when close to the live center.
This live center is therefore ideal for precision machining of small sized components.

LOAD CHARTS

RADIAL LOAD in Kg. (WORKPIECE WEIGHT)



AXIAL LOAD in Kg.



Notes:

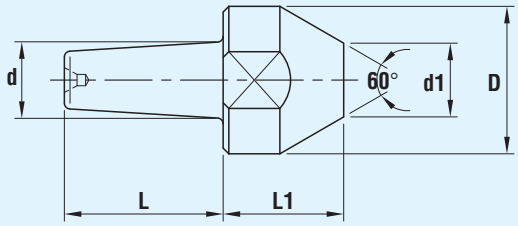
The load values refer to the model with an integral shaft and a live center life of about 2000 operating hours. Tests have shown that the live center can however be used for a longer or shorter period, depending on the types of machining task it undertakes. For other types of live center (with interchangeable center and extended integral shaft) the load values indicated on the graphs should be reduced.

Example:

Permitted maximum loads for the MT4 live center with integral shaft at n = 1000 r.p.m.
Radial load Q = 450 kg
Axial load Pa = 900 kg

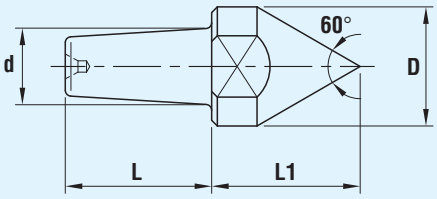
"80-85 SERIES"

FR 94



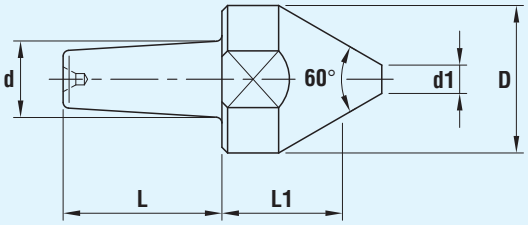
Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030315103	MT2	26	21	28	13.5	13
030315103	MT3	26	21	28	13.5	13
030315204	MT4	29	22	29	15.4	15
030315305	MT5	34	26.5	30	20.3	15
030315406	MT6	43	27	40	28	23

FR 95



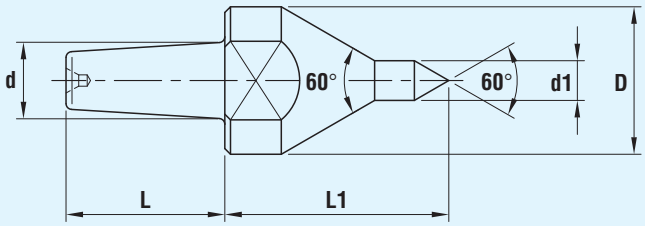
Code	For live center with taper	Dimensions in mm.			
		D	L_1	L	d
030316002	MT2	21	26	28	13.5
030316103	MT3	24	32.5	28	13.5
030316204	MT4	29	35	29	15.4
030316305	MT5	34	39.5	30	20.3
030316406	MT6	39	47	40	28

FR 96



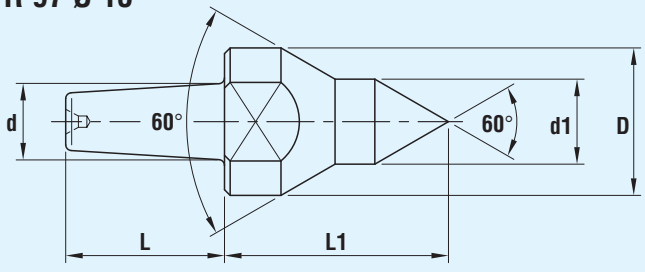
Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030317103	MT2	26	28	28	13.5	5
030317103	MT3	26	28	28	13.5	5
030317204	MT4	29	30	29	15.4	6
030317305	MT5	34	33.5	30	20.3	7
030317406	MT6	43	36	40	28	13

FR 97 Ø 7



Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030318103	MT2	24	39.5	28	13.5	7
030318103	MT3	24	39.5	28	13.5	7
030318204	MT4	24	42	29	15.4	7
030318305	MT5	24	46	30	20.3	7

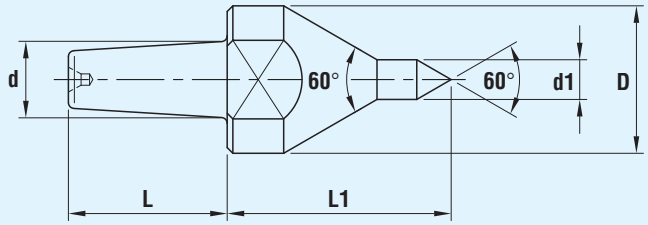
FR 97 Ø 15



Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030318113	MT2	24	39.5	28	13.5	15
030318113	MT3	24	39.5	28	13.5	15
030318214	MT4	24	42	29	15.4	15
030318315	MT5	24	46	30	20.3	15

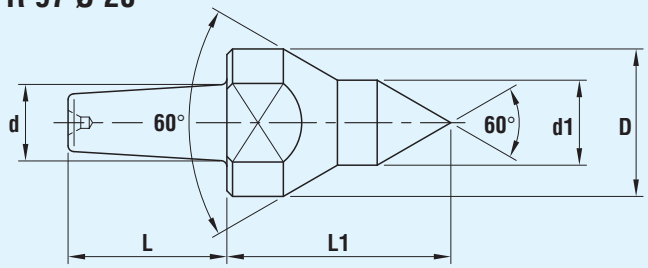
"80-85 SERIES"

FR 97 Ø 13



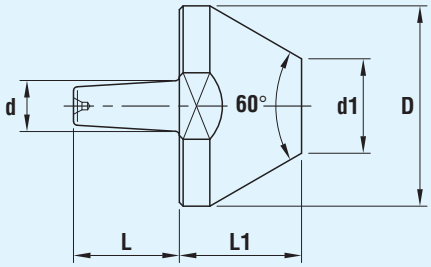
Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030318406	MT6	34	61	40	28	13

FR 97 Ø 20



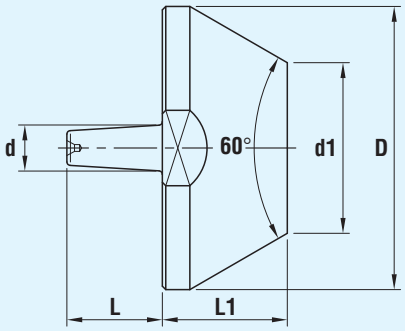
Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030318416	MT6	34	61	40	28	20

FR 98



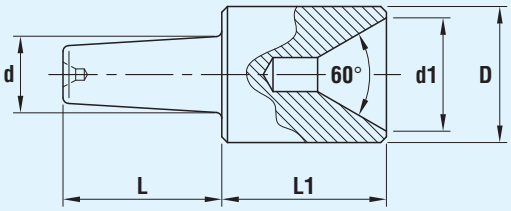
Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030319103	MT2	53	32.3	28	13.5	25
030319103	MT3	53	32.3	28	13.5	25
030319204	MT4	53	32.3	29	15.4	25
030319305	MT5	53	32.3	30	20.3	25
030319406	MT6	73	35	40	28	42

FR 98-A



Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030319113	MT2	83	36.6	28	13.5	50
030319113	MT3	83	36.6	28	13.5	50
030319214	MT4	83	36.6	29	15.4	50
030319315	MT5	83	36.6	30	20.3	50
030319416	MT6	103	36.6	40	28	70

FR 99

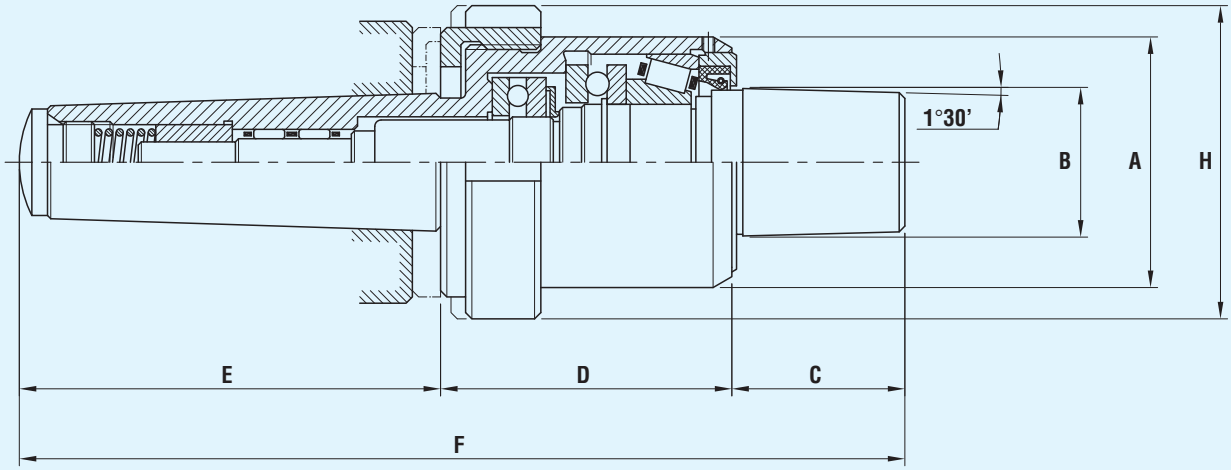


Code	For live center with taper	Dimensions in mm.				
		D	L_1	L	d	d_1
030320103	MT2	24	29	28	13.5	20
030320103	MT3	24	29	28	13.5	20
030320204	MT4	27	32	29	15.4	22
030320305	MT5	34	40	30	20.3	22
030320406	MT6	48	46	40	28	40

LIVE CENTERS FOR TURNING

FRB HEAD CARRYING LIVE CENTER FOR PIPE TURNING WITH AXIAL LOAD DITRIBUTION AND ADJUSTABLE RADIAL TAPER ROLLER BEARING WITH SUPPORT AND EXTRACTION NUT. LUBRICATED WITH SPECIAL MAINTENANCE FREE GREASE.

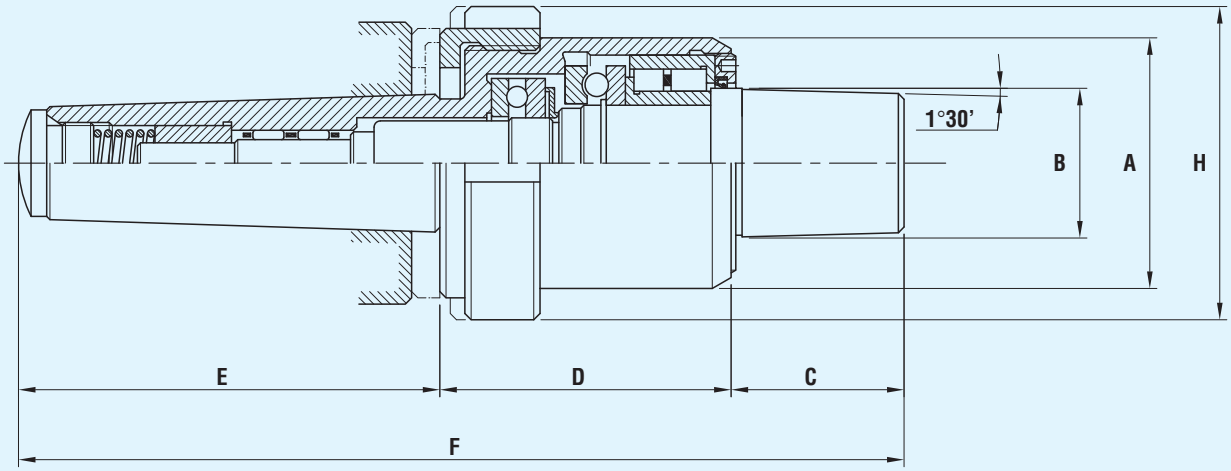
"80 SERIES"



Code	Morse Taper	Dimensions in mm.						
		C	D	E	A	B	F	H
010180147	MT4	42	68	103	62	35	213	74
010180157	MT5	42	83	136	80	35	260.5	88
010180167	MT6	42.5	123	189	119	35	354	130

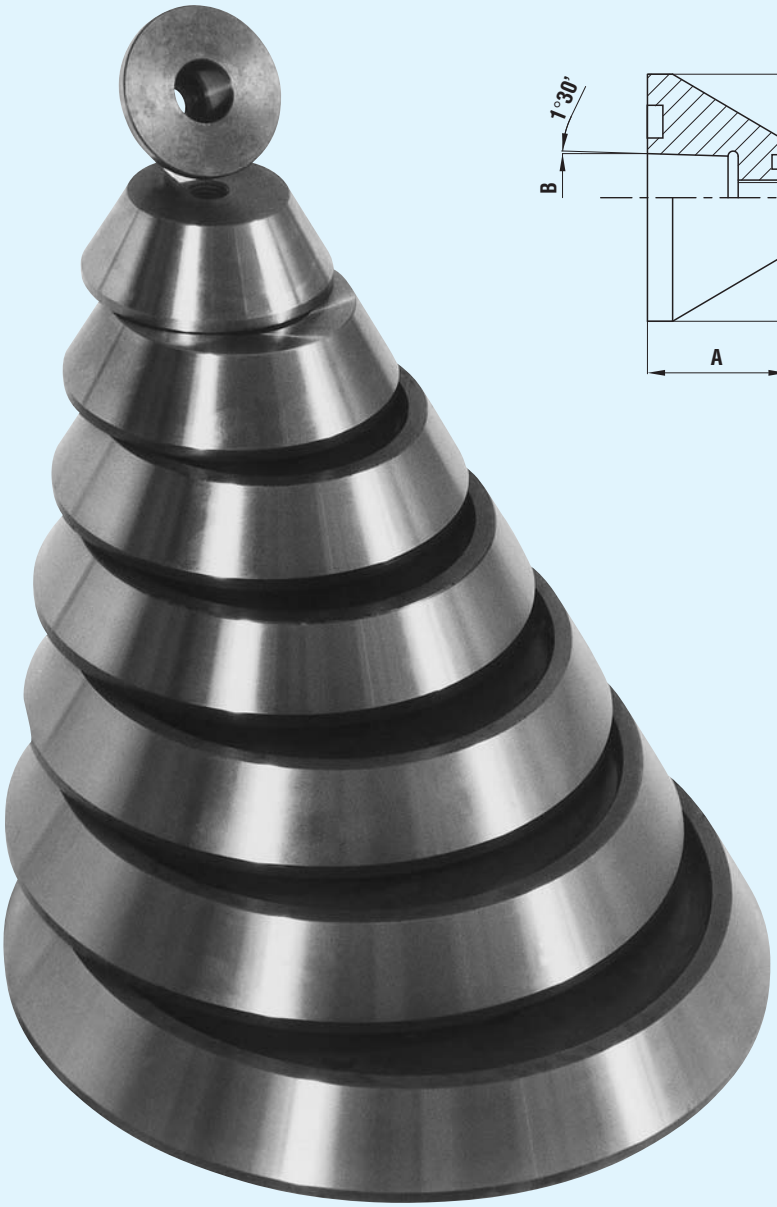
FRB HEAD CARRYING LIVE CENTER FOR PIPE TURNING WITH AXIAL LOAD DITRIBUTION AND ADJUSTABLE RADIAL CYLINDRICAL ROLLER BEARING WITH SUPPORT AND EXTRACTION NUT. LUBRICATED WITH SPECIAL MAINTENANCE FREE GREASE.

"85 SERIES"



Code	Morse Taper	Dimensions in mm.						
		C	D	E	A	B	F	H
010185147	MT4	42	68	103	62	35	213	74
010185157	MT5	42	83	136	80	35	260.5	88
010185167	MT6	42.5	123	189	119	35	354	130

Can be fitted to: FRB head carrying live centers with axial load distribution and FRB head carrying live centers for grinding.



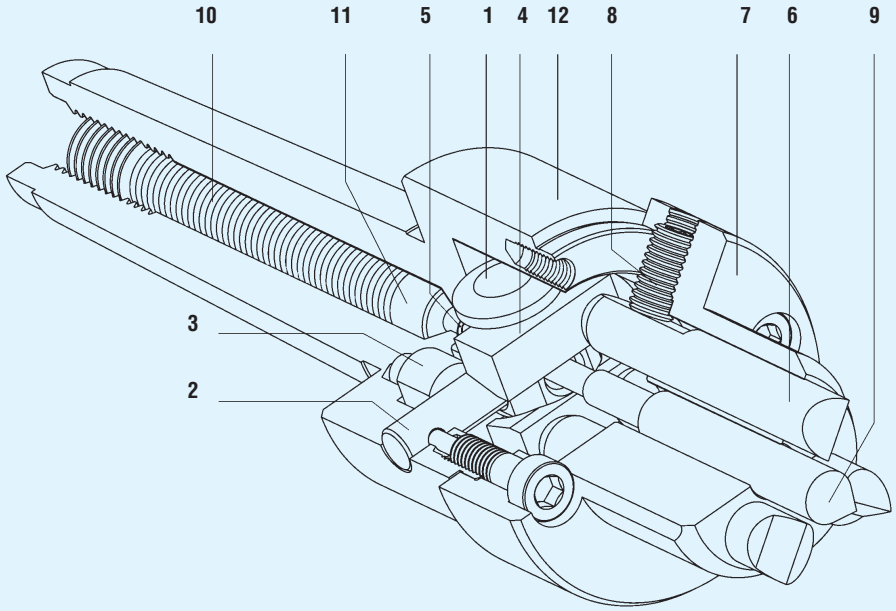
FOR LIVE CENTERS MT4-MT5-MT6-MT7-M80-M100

Code	Dimensions in mm.			
	A	B	C	D
040400265	55	35	45	98
040400266	55	35	95	148
040400267	55	35	145	198
040400268	55	35	195	248
040400269	55	35	245	298
040400270	55	35	295	348
040400271	55	35	345	398
040400272	55	35	395	448
040400273	55	35	445	498

FACE DRIVER FOR TURNING

TECHNICAL FEATURES OF FRB FACE DRIVERS FOR CENTERED SHAFTS

FRB face drivers work by a patented compensating system, operated by wedge lever, which allows four-pin driving.
This system is highly adjustable and ensures safe and reliable torque transmission under the most difficult conditions; such as rough surfaces or irregular end faces with variation by as much as 3 mm.
The center is independent of the driving pins and rests against a belleville spring washer assembly located inside the morse taper. Even with varying center sizes, work positioning is maintained with optimal repeatability.
The center point can be easily extracted without removing the face driver from the machine tool. The interchangeability of centers with slots enables turning even of workpieces with holes in the end piece.
The superior driving efficiency of FRB face drivers allows the users to exploit the full performances of the state of the art machine tools.



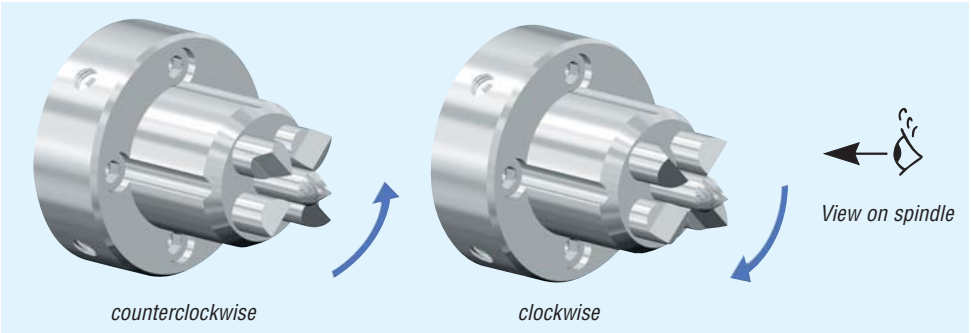
*All **FRB** face drivers use a wedge lever compensating system.*
The driver consists of these components:

1) *Wedge lever assembly*
2) *Wedge lever support pin*
3) *Support pin base*
4) *Balancing plates*
5) *Anchor*
6) *Driving pins*
7) *Driving pins face plate*
8) *Driving pins retaining screw*
9) *Center point*
10) *Belleville spring washer assembly*
11) *Center point support cylinder*
12) *Face driver body*

HOW THE "WEDGE LEVER" SYSTEM WORKS

The wedge lever ① is held in position by two support pins ② that are themselves supported by two auxiliary supports ③. These reduce pin deflection.The wedge lever assembly has two balancing plates ④ that are held in position by two elastic elements called "anchors" ⑤. These are fixed to the bottom of the balancing plates. The four driving pins ⑥ are guided by the driving pin support face plate ⑦. The driving pins rest their rounded end on the wedge lever's balancing plates.
The wedge lever has been specially designed to compensate the obliqueness of end faces on which the driving pins rest.

They are made from specially vanadium steel and higly tensile, hardened molybdenum. The driving pins are of two types, depending on the working rotation direction of the spindle.
The center ⑨ is independent of the driving pins and is loaded by the belleville springs.
To machine workpieces with holes or large centres, point with slots can be fitted. For operating instuctions, see pag. 15.
Reduced edge driving pins can be fitted to all models in order to machine from the face driver side diameters that are too small to be turned by standard size driving pins.



FRB FACE DRIVER TYPE "SPECIAL"

Enables the operator to change the driving pins and the center point without having to remove other face driver components. It also enables long execution machining by even large tools.

FACE DRIVER FOR TURNING

INSTRUCTIONS FOR A CORRECT MAINTENANCE OF THE FACE DRIVER FUNCTIONAL FEATURES

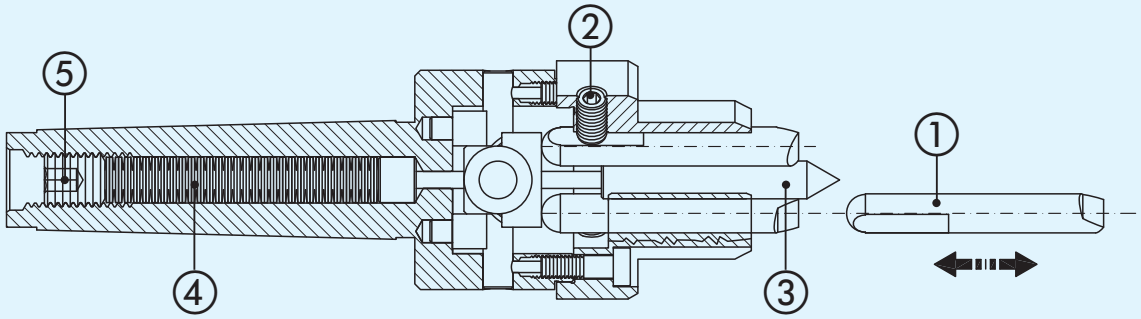
A) *Insert driving pins by hand ① and make them slide in direction of the face driver's axis, keeping the milled plane turned outwards.*

B) *The four driving pin rotation limiting screws ② have been set by the factory. The setting allows free linear movement and a minimal rotation of the driving pins around their own axis.*

C) *Every 400 working hours we suggest removing the central point ③ and the driving pins to regrease them in order to create a thin film that avoids introductions of coolant into the body of the face driver.*

Note: *All above mentioned operations can be made with the face driver assembled on the machine without compromising its accuracy. The belleville spring washers ④ are preloaded and set by the factory by means of a screw ⑤ and do not require adjustment.*

Warning: *Before any operation, be sure the machine is in a safe condition.*



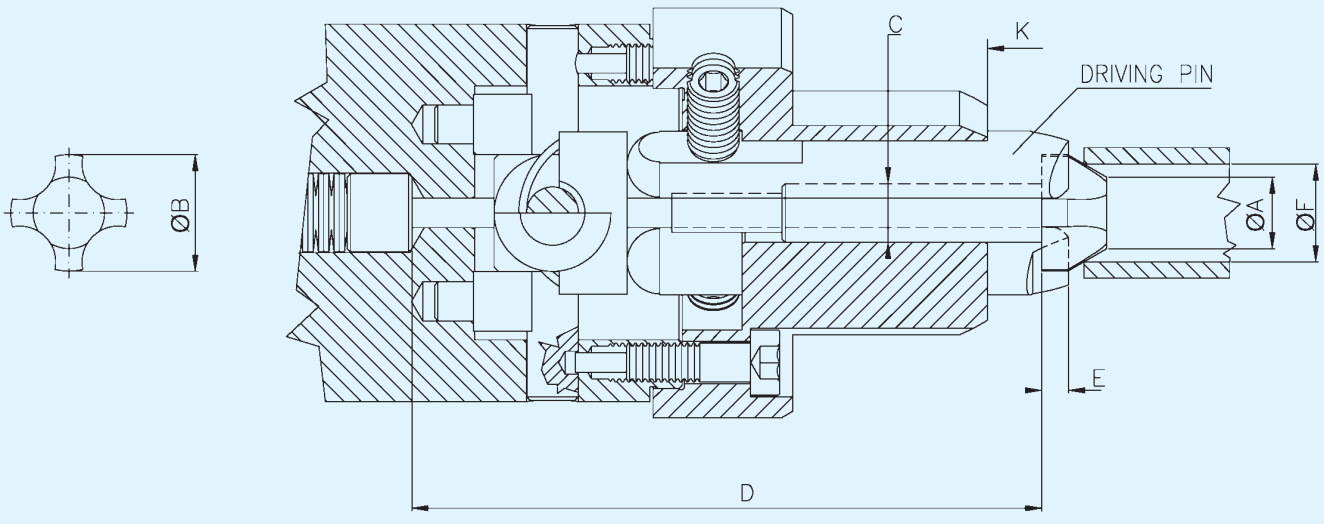
USING THE CENTER POINTS WITH SLOTS IN FACE DRIVERS OPERATED BY SPRINGS

USING:

When using the center points with slots, always check overall driving pin lenght. This must never be less than 3 mm of the lenght indicated in the catalogue.

When sharpening, driving pins can be shortened down to 3 mm of their original overall lenght.

Note: *If the normal center points are used, the driving pins can be shortened down to 6 mm.*



FACE DRIVER FOR TURNING

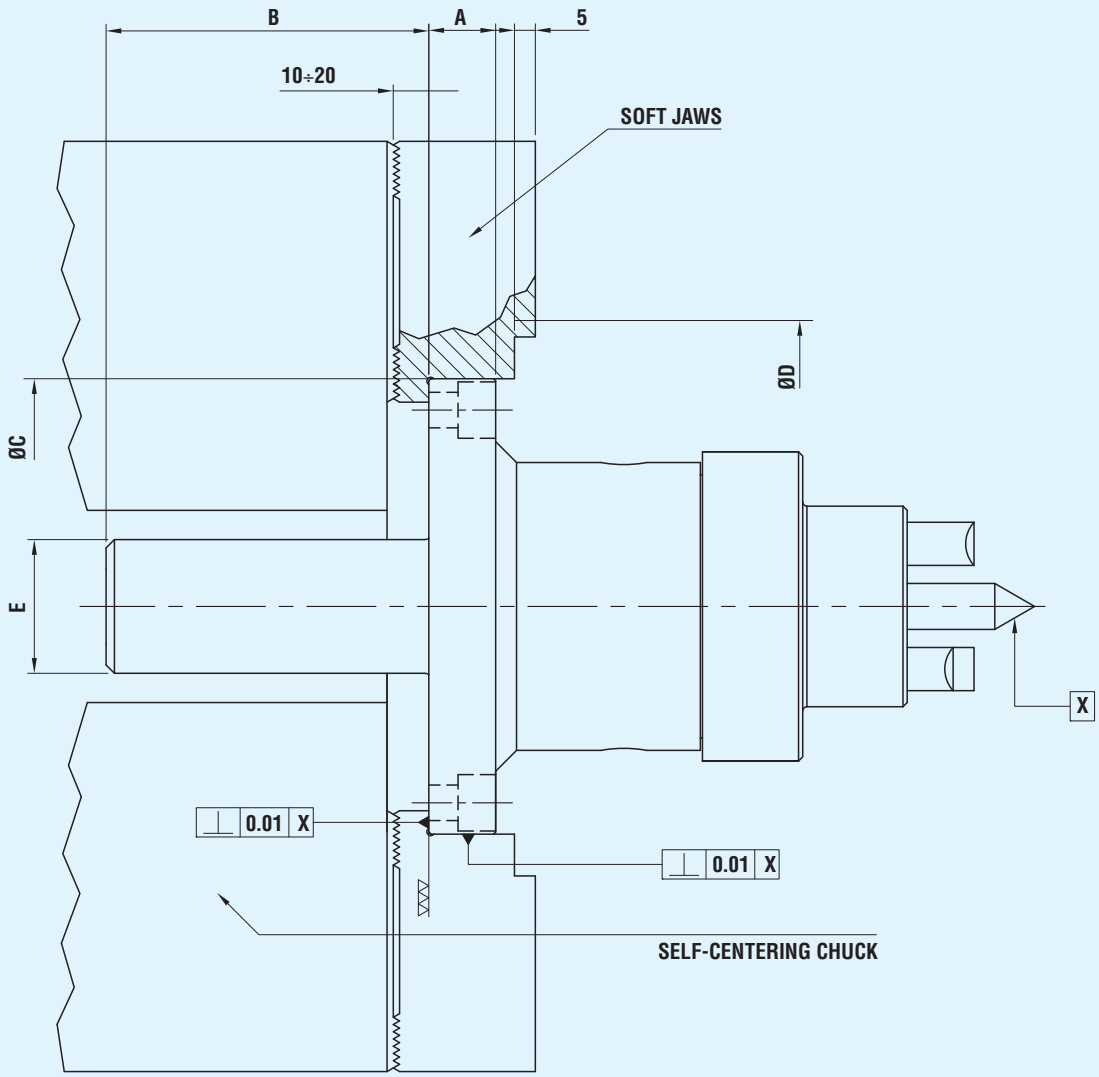
CLAMPING FACE DRIVERS WITH INTEGRAL FLANGE ON SELF-CENTERING CHUCK

SOFT JAWS:

* *Preliminary operation to take up the axial and radial slack of the self-centering chuck.*

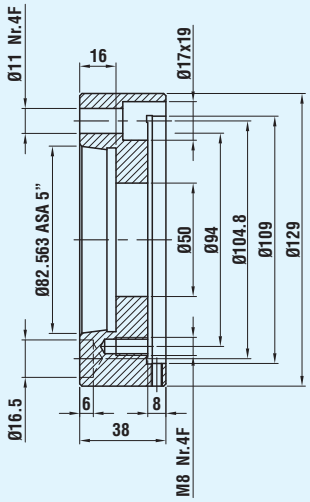
1st operation: machine the diameter D after clamping a round flange of suitable diameter in the three jaws.

2nd operation: Machine the diameter C after clamping the appropriate ring in the diameter D.

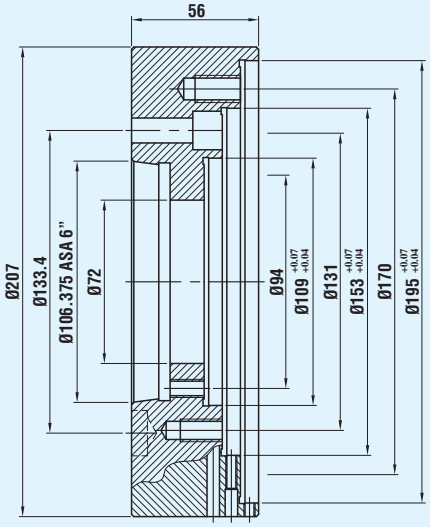


Face Driver	A	B	ØC	ØD	ØE
6/30, 5/20, 12/50, 15/55, 20/60	16	56	109	160	32
20/70	16	62	109	160	32
45/120	22	108	153	200	32

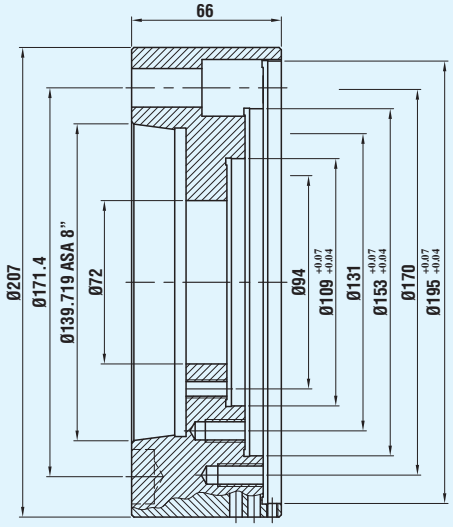
GROUND AND HARDENED



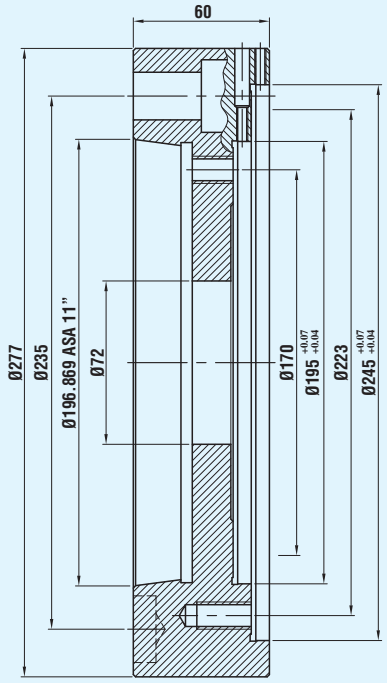
ASA 5" flange
CODE 070700558



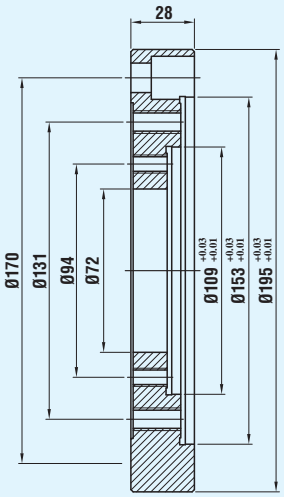
ASA 6" flange
CODE 070700551



ASA 8" flange
CODE 070700552



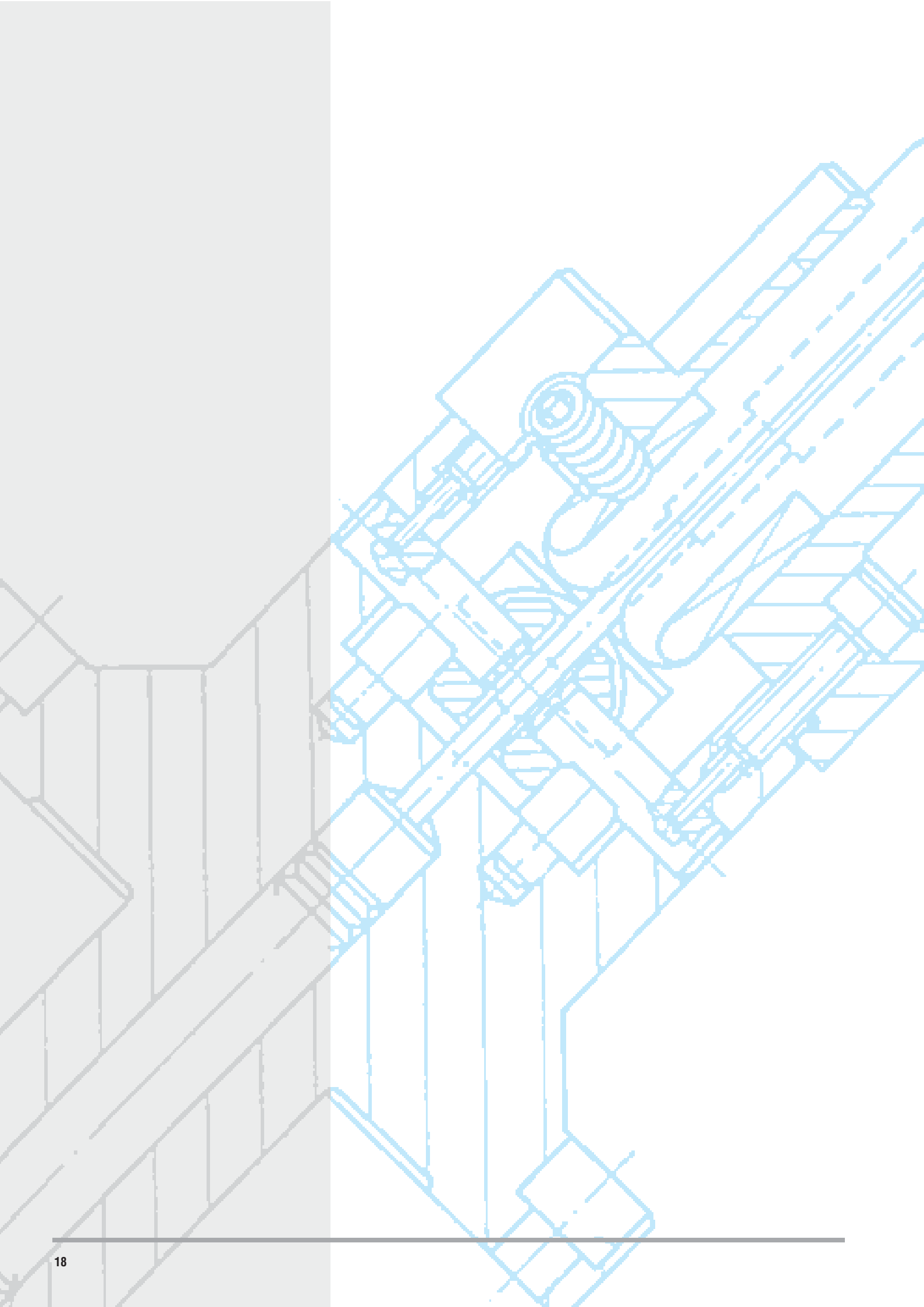
ASA 11" flange
CODE 070700559



Neutral flange
CODE 070700550

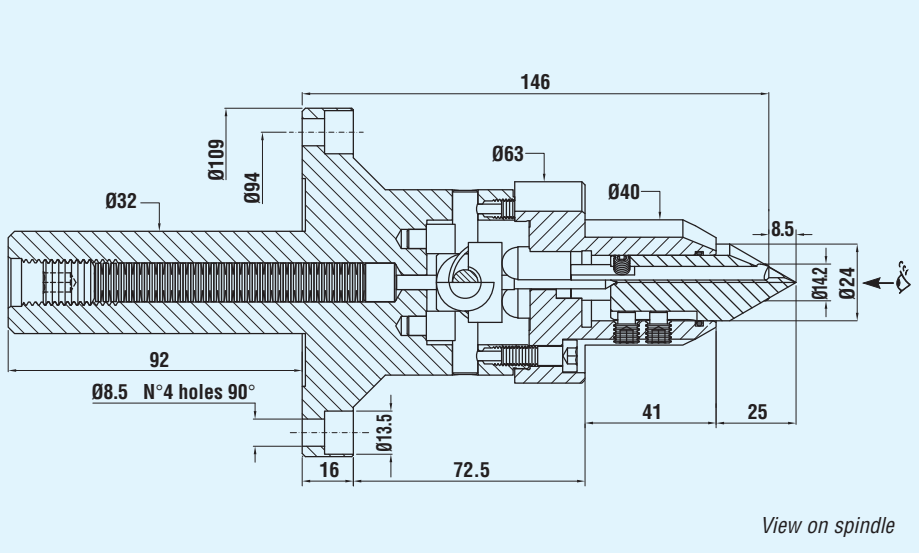
Note:
All flanges
are hardened and ground

FOR FURTHER AND MORE
DETAILED INFORMATION,
CONTACT OUR TECHNICAL OFFICE



FACE DRIVER 6/30 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING WITH INTEGRAL FLANGE



FEATURES:

This face driver is suitable for machining shafts of between 6 and 30 millimetres in diameter. Machining with large tools can also be carried out from the face driver side; the center point and the driving pins can be replaced without having to remove other face driver components.

FLANGED

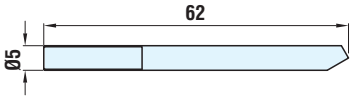
Code counterclockwise rotation	Code clockwise rotation
070760049	070760048

MORSE TAPER FITTING

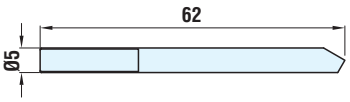
Code counterclockwise rotat.	Code clockwise rotat.	Taper
070752381	070752380	MT3
070752383	070752382	MT4
070752385	070752384	MT5
070752387	070752386	MT6

SPARE PARTS

Driving pins for 6/30 "special"



Counterclockwise rotation

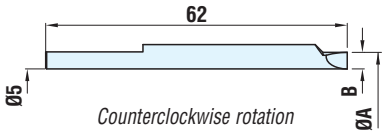


Clockwise rotation

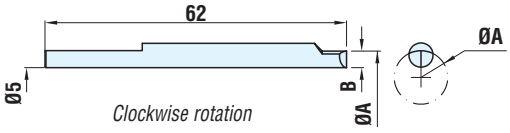
Code counterclockwise rotation	Code clockwise rotation
080845004	080845001

Reduced edge driving pins for 6/30 "special"

Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.



Counterclockwise rotation

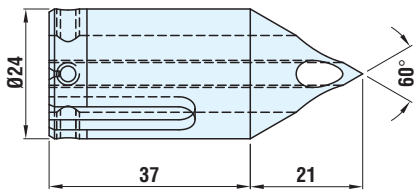


Clockwise rotation

Code	Rotat.	Ø A	B
090901007	Counterclockwise	7	1.4
090901008	"	8	1.9
090901009	"	9	2.4
090901010	"	10	2.9
090901011	"	11	3.4
090901012	"	12	3.9

Code	Rotat.	Ø A	B
090900007	Clockwise	7	1.4
090900008	"	8	1.9
090900009	"	9	2.4
090900010	"	10	2.9
090900011	"	11	3.4
090900012	"	12	3.9

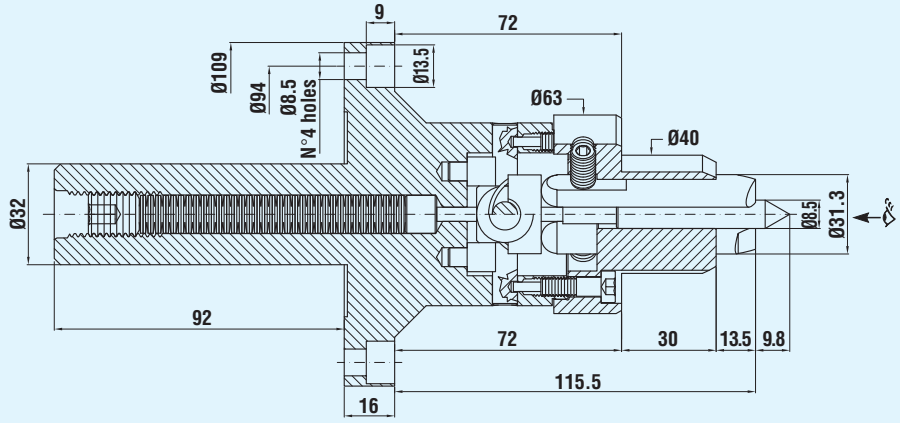
Center point supporting driving pins for 6/30 "special"



Code
072102762

FACE DRIVER 15/55 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING WITH INTEGRAL FLANGE



View on spindle

FEATURES:

This face driver is suitable for machining shafts of between 15 and 55 millimetres in diameter. Machining with large tools can also be carried out from the face driver side; the center point and the driving pins can be replaced without having to remove other face driver components.

FLANGED

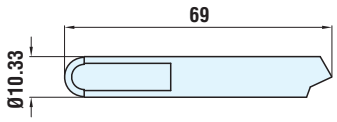
Code counterclockwise rotation	Code clockwise rotation
070752407	070752406

MORSE TAPER FITTING

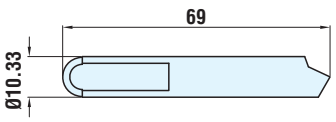
Code counterclockwise rotat.	Code clockwise rotat.	Taper
070752391	070752390	MT3
070752393	070752392	MT4
070752395	070752394	MT5
070752397	070752396	MT6

SPARE PARTS

Driving pins for 15/55 "special"



Counterclockwise rotation

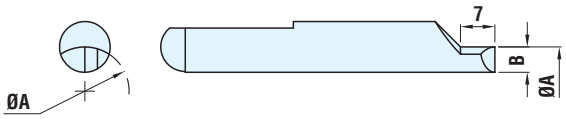


Clockwise rotation

Code counterclockwise rotation	Code clockwise rotation
080809002	080809003

Reduced edge driving pins for 15/55 "special"

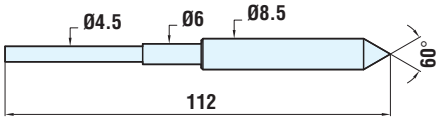
Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.



Code	Rotat.	Ø A	B
090909011	Counterclockwise	14	1.6
090909012	"	15	2.1
090909013	"	16	2.6
090909014	"	17	3.1
090909015	"	18	3.6
090909016	"	19	4.1
090909017	"	20	4.6
090909018	"	21	5.1
090909019	"	22	5.6
090909020	"	23	6.1
090909021	"	24	6.6
090909022	"	25	7.1
090909023	"	26	7.6
090909024	"	27	8.1
090909025	"	28	8.6

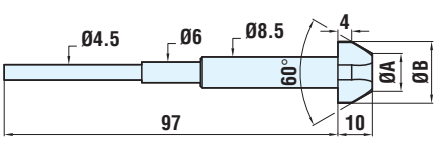
Code	Rotat.	Ø A	B
090909111	Clockwise	14	1.6
090909112	"	15	2.1
090909113	"	16	2.6
090909114	"	17	3.1
090909115	"	18	3.6
090909116	"	19	4.1
090909117	"	20	4.6
090909118	"	21	5.1
090909119	"	22	5.6
090909120	"	23	6.1
090909121	"	24	6.6
090909122	"	25	7.1
090909123	"	26	7.6
090909124	"	27	8.1
090909125	"	28	8.6

Center point for 15/55 "special"



Code
072102766

Center points with slots for 15/55 "special" *(for large centers or holes)*

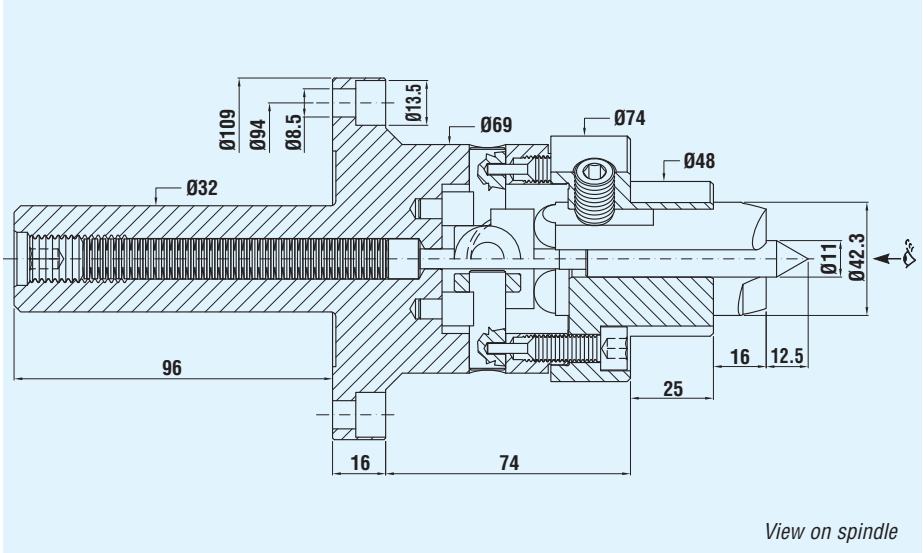


Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
171711015	5	12	7.5	10.5
171711016	8	15	10.5	13.5
171711017	11	18	13.5	16.5
171711019	14	21	16.5	19.5
171711020	17	24	19.5	22.5
171711022	20	27	22.5	25.5

For operating instructions, see page 15.

FACE DRIVER 20/70 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING WITH INTEGRAL FLANGE



View on spindle

FEATURES:

This face driver is suitable for machining shafts of between 20 and 70 millimetres in diameter. Machining with large tools can also be carried out from the face driver side; the center point and the driving pins can be replaced without having to remove other face driver components.

FLANGED

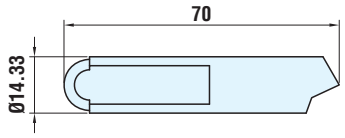
Code counterclockwise rotation	Code clockwise rotation
070760028	070760030

MORSE TAPER FITTING

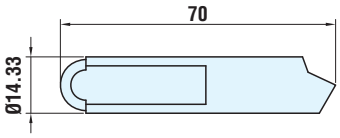
Code counterclockwise rotat.	Code clockwise rotat.	Taper
070752366	070752365	MT4
070752368	070752367	MT5
070752370	070752369	MT6

SPARE PARTS

Driving pins for 20/70 "special"



Counterclockwise rotation

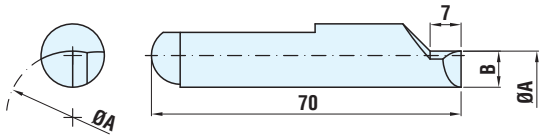


Clockwise rotation

Code counterclockwise rotation	Code clockwise rotation
080809004	080809005

Reduced edge driving pins for 20/70 "special"

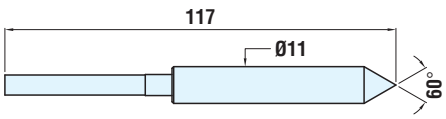
Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.



Code	Rotat.	Ø A	B
090909219	Counterclockwise	19	2.7
090909220	"	20	3.2
090909221	"	21	3.7
090909222	"	22	4.2
090909223	"	23	4.7
090909224	"	24	5.2
090909225	"	25	5.7
090909226	"	26	6.2
090909227	"	27	6.7
090909228	"	28	7.2
090909229	"	29	7.7
090909230	"	30	8.2
090909231	"	31	8.7
090909232	"	32	9.2
090909233	"	33	9.7
090909234	"	34	10.2
090909235	"	35	10.7
090909236	"	36	11.2

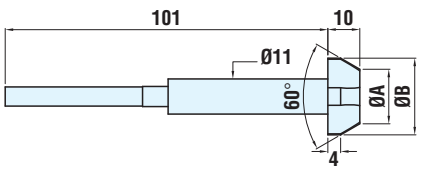
Code	Rotat.	Ø A	B
090909319	Clockwise	19	2.7
090909320	"	20	3.2
090909321	"	21	3.7
090909322	"	22	4.2
090909323	"	23	4.7
090909324	"	24	5.2
090909325	"	25	5.7
090909326	"	26	6.2
090909327	"	27	6.7
090909328	"	28	7.2
090909329	"	29	7.7
090909330	"	30	8.2
090909331	"	31	8.7
090909332	"	32	9.2
090909333	"	33	9.7
090909334	"	34	10.2
090909335	"	35	10.7
090909336	"	36	11.2

Center point for 20/70 "special"



Code
072102756

Center points with slots for 20/70 "special" *(for large centers or holes)*

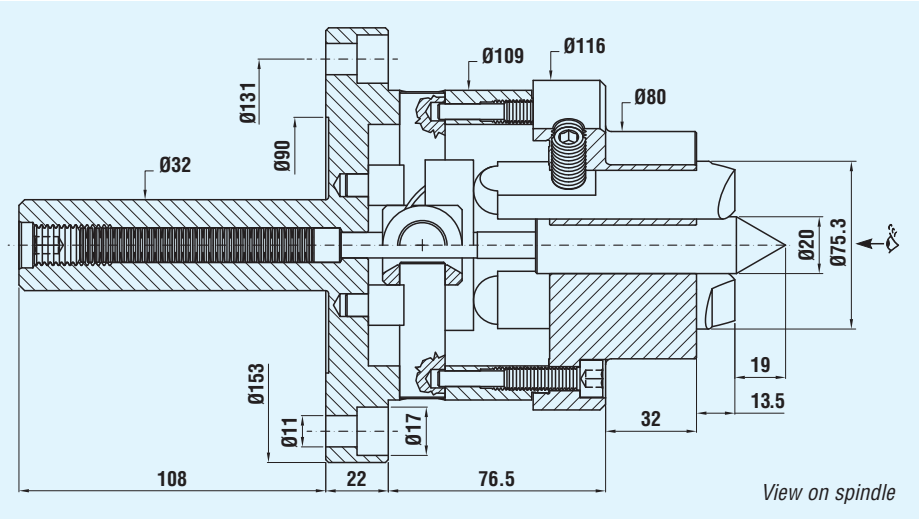


Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
171712010	8	15	10.5	13.5
171712011	11	18	13.5	16.5
171712012	14	21	16.5	19.5
171712013	17	24	19.5	22.5
171712014	20	27	22.5	25.5
171712015	23	30	25.5	28.5
171712016	26	33	28.5	31.5
171712017	29	36	31.5	34.5

For operating instructions, see page 15.

FACE DRIVER 45/120 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING WITH INTEGRAL FLANGE



FEATURES:

This face driver is suitable for machining shafts of between 45 and 120 millimetres in diameter. Machining with large tools can also be carried out from the face driver side; the center point and the driving pins can be replaced without having to remove other face driver components.

FLANGED

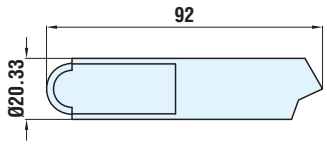
Code counterclockwise rotation	Code clockwise rotation
070760032	070760034

MORSE TAPER FITTING

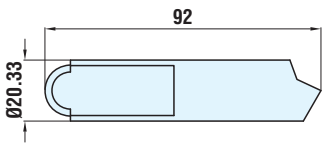
Code counterclockwise rotat.	Code clockwise rotat.	Taper
070750755	070750756	MT5
070751065	070751066	MT6

SPARE PARTS

Driving pins for 45/120 "special"



Counterclockwise rotation

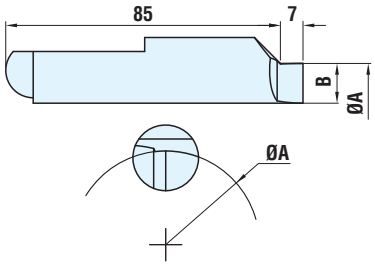


Clockwise rotation

Code counterclockwise rotation	Code clockwise rotation
080845014	080845015

Reduced edge driving pins for 45/120 "special"

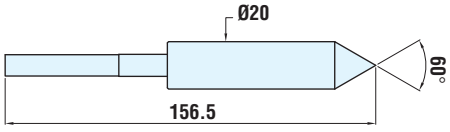
Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.



Code	Rotat.	Ø A	B
090945244	Counterclockwise	44	4.8
090945245	"	45	5.3
090945246	"	46	5.8
090945247	"	47	6.3
090945248	"	48	6.8
090945249	"	49	7.3
090945250	"	50	7.8
090945251	"	51	8.3
090945252	"	52	8.8
090945253	"	53	9.3
090945254	"	54	9.8
090945255	"	55	10.3
090945256	"	56	10.8
090945257	"	57	11.3
090945258	"	58	11.8
090945259	"	59	12.3
090945260	"	60	12.8
090945261	"	61	13.3
090945262	"	62	13.8
090945263	"	63	14.3
090945264	"	64	14.8
090945265	"	65	15.3

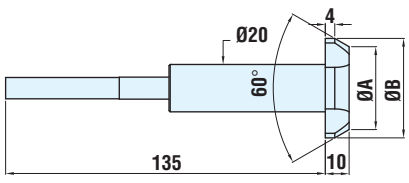
Code	Rotat.	Ø A	B
090945344	Clockwise	44	4.8
090945345	"	45	5.3
090945346	"	46	5.8
090945347	"	47	6.3
090945348	"	48	6.8
090945349	"	49	7.3
090945350	"	50	7.8
090945351	"	51	8.3
090945352	"	52	8.8
090945353	"	53	9.3
090945354	"	54	9.8
090945355	"	55	10.3
090945356	"	56	10.8
090945357	"	57	11.3
090945358	"	58	11.8
090945359	"	59	12.3
090945360	"	60	12.8
090945361	"	61	13.3
090945362	"	62	13.8
090945363	"	63	14.3
090945364	"	64	14.8
090945365	"	65	15.3

Center point for 45/120 "special"



Code
072102758

Center points with slots for 45/120 "special" *(for large centers or holes)*

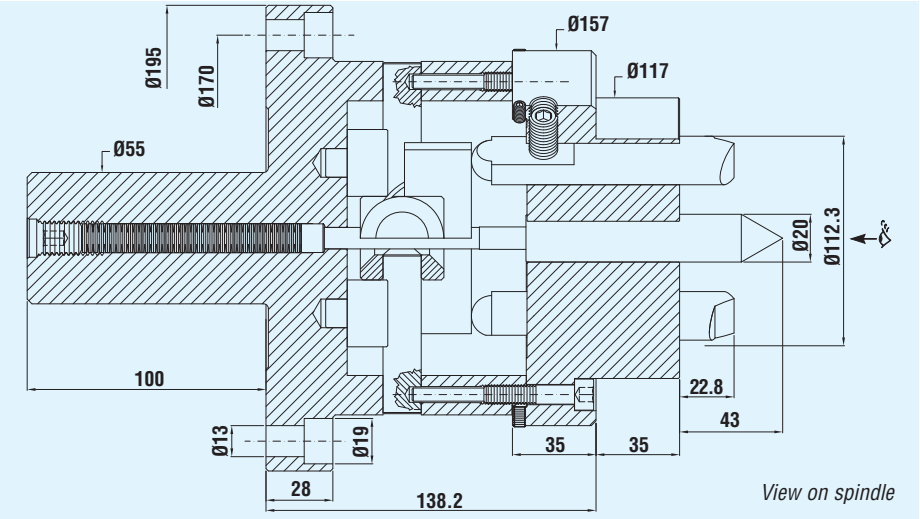


Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
171713020	14	21	16.5	19.5
171713021	17	24	19.5	22.5
171713022	20	27	22.5	25.5
171713023	23	30	25.5	28.5
171713024	26	33	28.5	31.5
171713025	29	36	31.5	34.5
171713026	32	39	34.5	37.5
171713027	35	42	37.5	40.5
171713028	38	45	40.5	43.5
171713029	41	48	43.5	46.5
171713030	44	51	46.5	49.5

For operating instructions, see page 15.

FACE DRIVER 100/220 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING WITH INTEGRAL FLANGE



FEATURES:

This face driver is suitable for machining shafts of between 100 and 220 millimetres in diameter. Machining with large tools can also be carried out from the face driver side; the center point and the driving pins can be replaced without having to remove other face driver components.

FLANGED

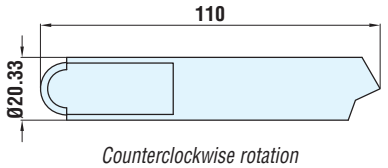
Code counterclockwise rotation	Code clockwise rotation
070760008	070760017

MORSE TAPER FITTING

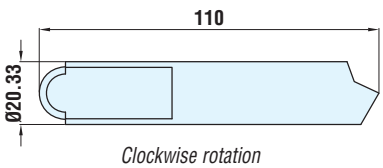
Code counterclockwise rotat.	Code clockwise rotat.	Taper
070751259	070751260	MT6

SPARE PARTS

Driving pins for 100/220 "special"



Counterclockwise rotation

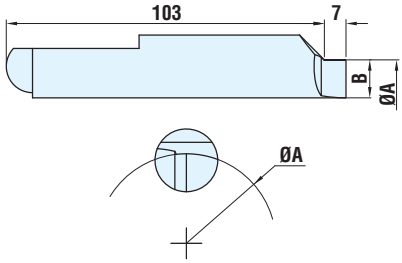


Clockwise rotation

Code counterclockwise rotation	Code clockwise rotation
080810212	080810213

Reduced edge driving pins for 100/220 "special"

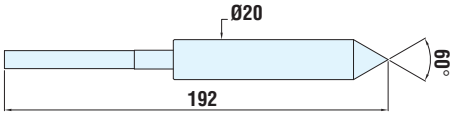
Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.



Code	Rotat.	Ø A	B
090900084	Counterclockwise	84	6.2
090900089	"	89	8.7
090900094	"	94	11.2
090900099	"	99	13.7

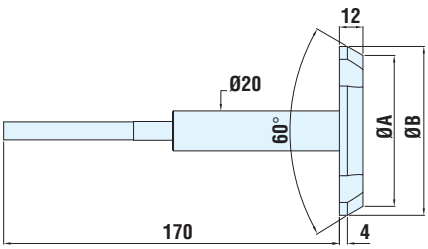
Code	Rotat.	Ø A	B
090901084	Clockwise	84	6.2
090901089	"	89	8.7
090901094	"	94	11.2
090901099	"	99	13.7

Center point for 100/220 "special"



Code
072102739

Center points with slots for 100/220 "special" *(for large centers or holes)*

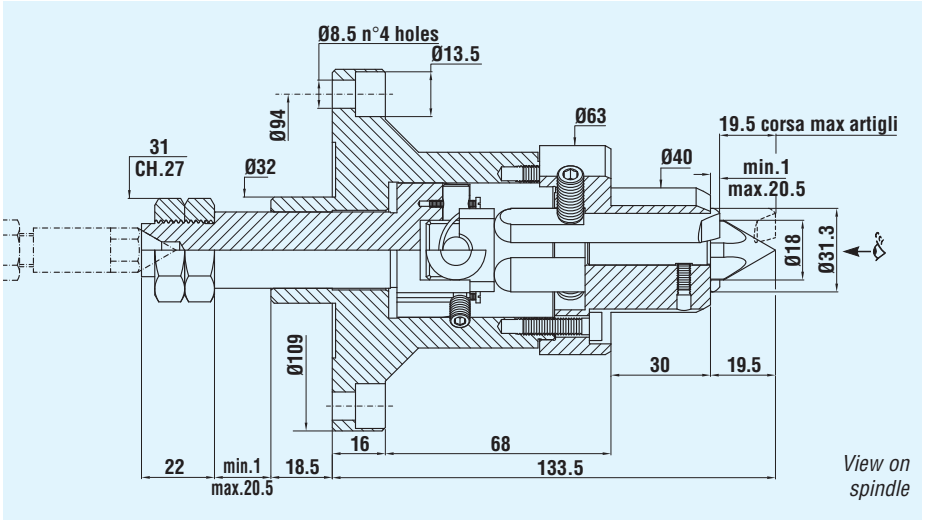


Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
171714001	17	26	19.5	24
171714002	21.5	30.5	24	28.5
171714003	26	35	28.5	33
171714004	30.5	39.5	33	37.5
171714005	35	44	37.5	42
171714006	39.5	48.5	42	46.5
171714007	44	53	46.5	51
171714008	48.5	57.5	51	55.5
171714009	53	62	55.5	60
171714010	57.5	66.5	60	64.5
171714011	62	71	64.5	69
171714012	66.5	75.5	69	73.5
171714013	71	80	73.5	78
171714014	75.5	84.5	78	82.5
171714015	80	89	82.5	87
171714016	84.5	93.5	87	91.5
171714017	89	98	91.5	96
171714018	93.5	102.5	96	100.5

For operating instructions, see page 15.

FACE DRIVER 15/55 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING, FLANGED, WITH WORK POSITIONING REFERRED TO THE CENTRE OF THE WORKPIECE, OPERATED BY HYDRAULIC CYLINDER



FEATURES:

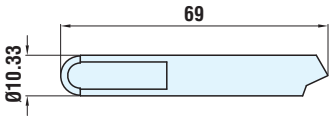
This face driver with interchangeable fixed centre point hydraulically operated, is suitable for machining shafts of between 15 and 55 mm. in diameter. Because of the high manufacturing standard this face driver can handle workpiece concentricity errors in turning otherwise achieved with a pre-grinding operation.

FLANGED

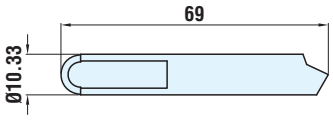
Code counterclockwise rotation	Code clockwise rotation
070752411	070752410

SPARE PARTS

Driving pins for 15/55 "special"



Counterclockwise rotation

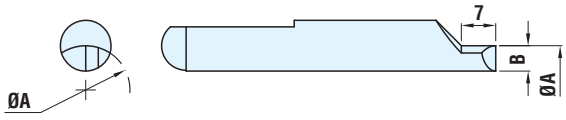


Clockwise rotation

Code counterclockwise rotation	Code clockwise rotation
080809002	080809003

Reduced edge driving pins for 15/55 "special"

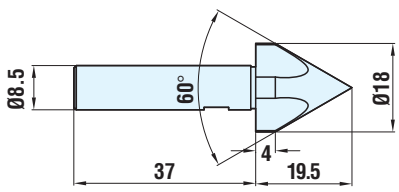
Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.



Code	Rotat.	Ø A	B
090909011	Counterclockwise	14	1.6
090909012	"	15	2.1
090909013	"	16	2.6
090909014	"	17	3.1
090909015	"	18	3.6
090909016	"	19	4.1
090909017	"	20	4.6
090909018	"	21	5.1
090909019	"	22	5.6
090909020	"	23	6.1
090909021	"	24	6.6
090909022	"	25	7.1
090909023	"	26	7.6
090909024	"	27	8.1
090909025	"	28	8.6

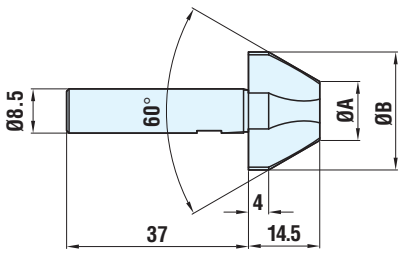
Code	Rotat.	Ø A	B
090909111	Clockwise	14	1.6
090909112	"	15	2.1
090909113	"	16	2.6
090909114	"	17	3.1
090909115	"	18	3.6
090909116	"	19	4.1
090909117	"	20	4.6
090909118	"	21	5.1
090909119	"	22	5.6
090909120	"	23	6.1
090909121	"	24	6.6
090909122	"	25	7.1
090909123	"	26	7.6
090909124	"	27	8.1
090909125	"	28	8.6

FIXED Center point for 15/55 "special"



Code
072102769

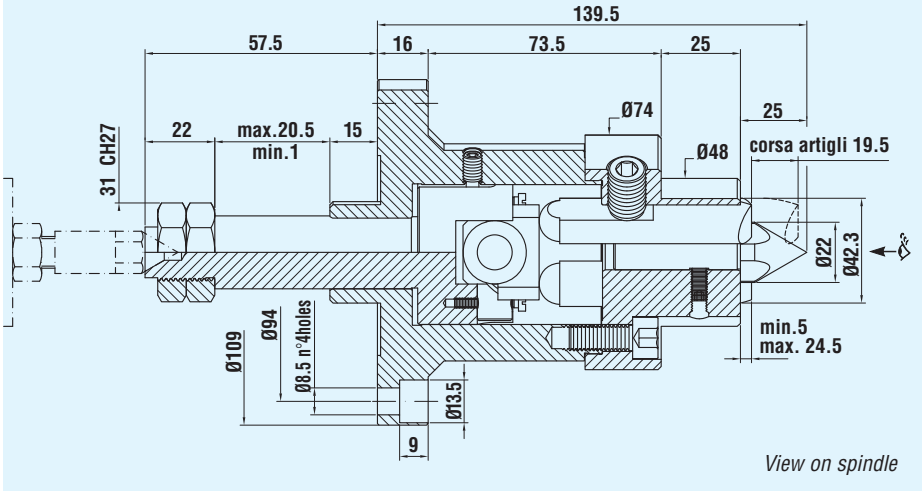
Center point with slots for 15/55 "special" *(for large centers or holes)*



Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
171711018	12	24	15	23
171711021	18	30	21	26

FACE DRIVER 20/70 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING, FLANGED, WITH WORK POSITIONING REFERRED TO THE CENTRE OF THE WORKPIECE, OPERATED BY HYDRAULIC CYLINDER



View on spindle

FEATURES:

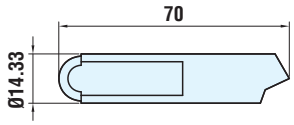
This face driver with interchangeable fixed centre point hydraulically operated, is suitable for machining shafts of between 20 and 70 millimetres in diameter. Because of the high manufacturing standard this face driver can handle workpiece concentricity errors in turning otherwise achieved with a pre-grinding operation.

FLANGED

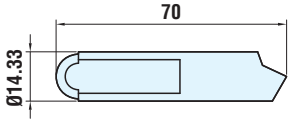
Code counterclockwise rotation	Code clockwise rotation
070760043	070760042

SPARE PARTS

Driving pins for 20/70 "special"



Counterclockwise rotation

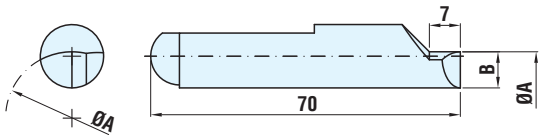


Clockwise rotation

Code counterclockwise rotation	Code clockwise rotation
080809004	080809005

Reduced edge driving pins for 20/70 "special"

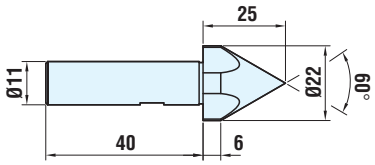
Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.



Code	Rotat.	Ø A	B
090909219	Counterclockwise	19	2.7
090909220	"	20	3.2
090909221	"	21	3.7
090909222	"	22	4.2
090909223	"	23	4.7
090909224	"	24	5.2
090909225	"	25	5.7
090909226	"	26	6.2
090909227	"	27	6.7
090909228	"	28	7.2
090909229	"	29	7.7
090909230	"	30	8.2
090909231	"	31	8.7
090909232	"	32	9.2
090909233	"	33	9.7
090909234	"	34	10.2
090909235	"	35	10.7
090909236	"	36	11.2

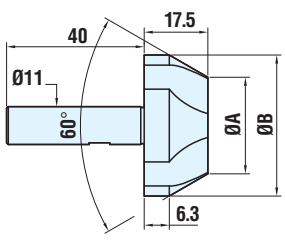
Code	Rotat.	Ø A	B
090909319	Clockwise	19	2.7
090909320	"	20	3.2
090909321	"	21	3.7
090909322	"	22	4.2
090909323	"	23	4.7
090909324	"	24	5.2
090909325	"	25	5.7
090909326	"	26	6.2
090909327	"	27	6.7
090909328	"	28	7.2
090909329	"	29	7.7
090909330	"	30	8.2
090909331	"	31	8.7
090909332	"	32	9.2
090909333	"	33	9.7
090909334	"	34	10.2
090909335	"	35	10.7
090909336	"	36	11.2

FIXED center point for 20/70 "special"



Code
072102771

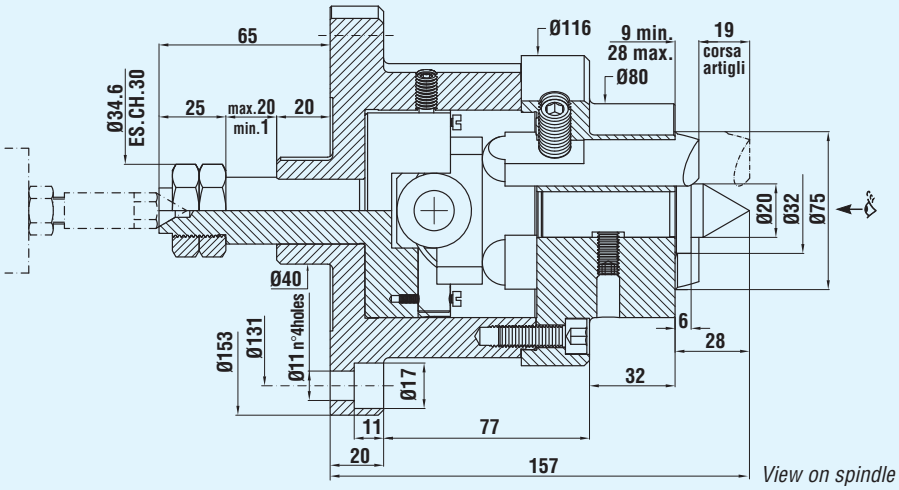
FIXED Center point with slots for 20/70 "special" *(for large centers or holes)*



Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
179200114	17	30	19	29
179200116	23	36	25	35

FACE DRIVER 45/120 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING, FLANGED, WITH WORK POSITIONING REFERRED TO THE CENTRE OF THE WORKPIECE, OPERATED BY HYDRAULIC CYLINDER



FEATURES:

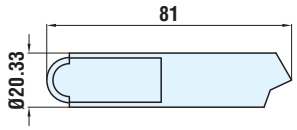
This face driver with interchangeable fixed centre point hydraulically operated, is suitable for machining shafts of between 45 and 120 millimetres in diameter. Because of the high manufacturing standard this face driver can handle workpiece concentricity errors in turning otherwise achieved with a pre-grinding operation.

FLANGED

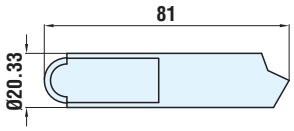
Code counterclockwise rotation	Code clockwise rotation
070760045	070760044

SPARE PARTS

Driving pins for 45/120 "special"



Counterclockwise rotation

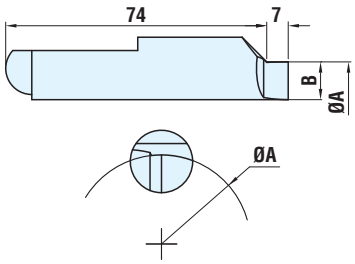


Clockwise rotation

Code counterclockwise rotation	Code clockwise rotation
080845017	080845016

Reduced edge driving pins for 45/120 "special"

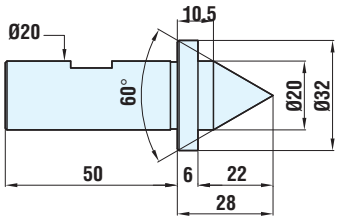
Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.



Code	Rotat.	Ø A	B
090945444	Counterclockwise	44	4.8
090945445	"	45	5.3
090945446	"	46	5.8
090945447	"	47	6.3
090945448	"	48	6.8
090945449	"	49	7.3
090945450	"	50	7.8
090945451	"	51	8.3
090945452	"	52	8.8
090945453	"	53	9.3
090945454	"	54	9.8
090945455	"	55	10.3
090945456	"	56	10.8
090945457	"	57	11.3
090945458	"	58	11.8
090945459	"	59	12.3
090945460	"	60	12.8
090945461	"	61	13.3
090945462	"	62	13.8
090945463	"	63	14.3
090945464	"	64	14.8
090945465	"	65	15.3

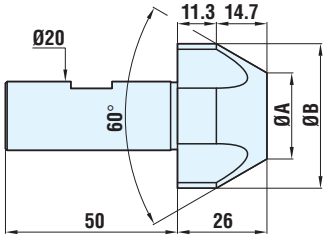
Code	Rotat.	Ø A	B
090945544	Clockwise	44	4.8
090945545	"	45	5.3
090945546	"	46	5.8
090945547	"	47	6.3
090945548	"	48	6.8
090945549	"	49	7.3
090945550	"	50	7.8
090945551	"	51	8.3
090945552	"	52	8.8
090945553	"	53	9.3
090945554	"	54	9.8
090945555	"	55	10.3
090945556	"	56	10.8
090945557	"	57	11.3
090945558	"	58	11.8
090945559	"	59	12.3
090945560	"	60	12.8
090945561	"	61	13.3
090945562	"	62	13.8
090945563	"	63	14.3
090945564	"	64	14.8
090945565	"	65	15.3

FIXED center point for 45/120 "special"



Code
072920104

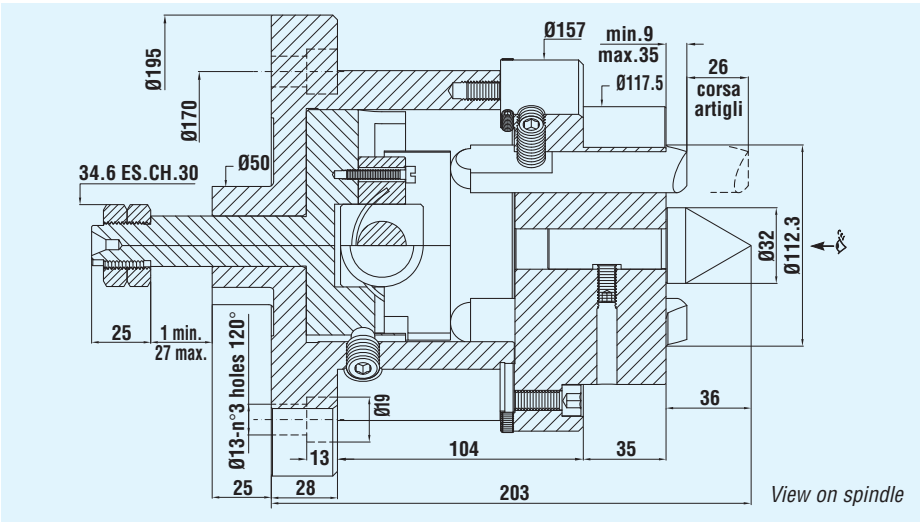
FIXED Center points with slots for 45/120 "special" *(for large centers or holes)*



Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
171713031	15	32	18	31
171713032	25	42	28	41
171713033	35	52	38	51
171713034	45	62	48	61
171713035	55	72	58	71

FACE DRIVER 100/220 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING, FLANGED, WITH WORK POSITIONING REFERRED TO THE CENTRE OF THE WORKPIECE, OPERATED BY HYDRAULIC CYLINDER



FEATURES:

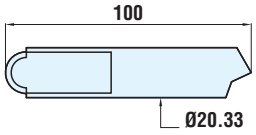
This face driver with interchangeable fixed centre point hydraulically operated, is suitable for machining shafts of between 100 and 220 millimetres in diameter. Because of the high manufacturing standard this face driver can handle workpiece concentricity errors in turning otherwise achieved with a pre-grinding operation.

FLANGED

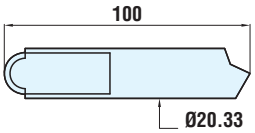
Code counterclockwise rotation	Code clockwise rotation
070760046	070760047

SPARE PARTS

Driving pins for 100/220 "special"



Counterclockwise rotation



Clockwise rotation

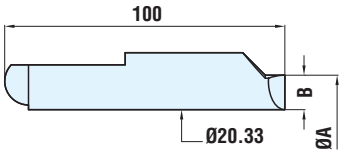
Code counterclockwise rotation	Code clockwise rotation
080810215	080810214

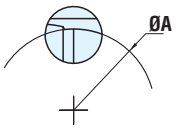
Reduced edge driving pins for 100/220 "special"

Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.

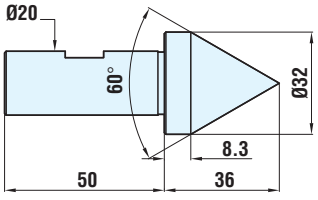
Code	Rotat.	Ø A	B
090909084	Counterclockwise	84	6.3
090909089	"	89	8.8
090909094	"	94	11.3
090909099	"	99	13.8

Code	Rotat.	Ø A	B
090909184	Clockwise	84	6.3
090909189	"	89	8.8
090909194	"	94	11.3
090909199	"	99	13.8



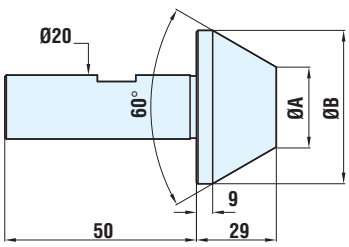


Fixed center point for 100/220 "special"



Code
072102765

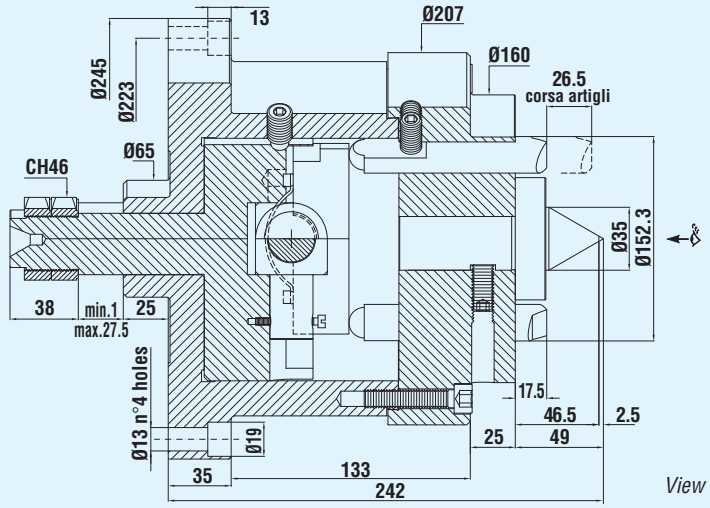
Fixed center points with slots for 100/220 "special" *(for large centers or holes)*



Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
171714019	25	48	28	47
171714020	42	65	39	64
171714021	60	83	57	82
171714022	78	101	75	100

FACE DRIVER 180/300 "SPECIAL" FOR TURNING

FACE DRIVER FOR TURNING, FLANGED, WITH WORK POSITIONING REFERRED TO THE CENTRE OF THE WORKPIECE, OPERATED BY HYDRAULIC CYLINDER



View on spindle

FEATURES:

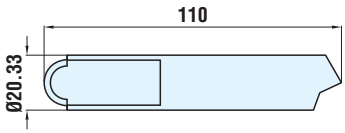
This face driver with interchangeable fixed centre point hydraulically operated, is suitable for machining shafts of between 180 and 300 millimetres in diameter. Because of the high manufacturing standard this face driver can handle workpiece concentricity errors in turning otherwise achieved with a pre-grinding operation.

FLANGED

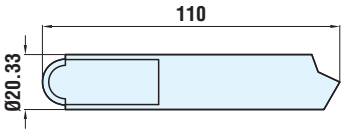
Code counterclockwise rotation	Code clockwise rotation
070760050	070760051

SPARE PARTS

Driving pins for 180/300 "special"



Counterclockwise rotation



Clockwise rotation

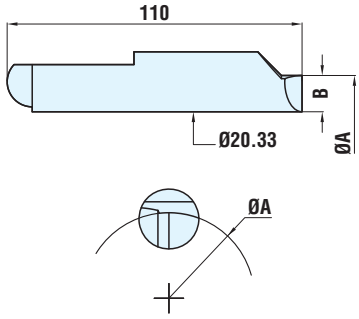
Code counterclockwise rotation	Code clockwise rotation
080810212	080810213

Reduced edge driving pins for 180/300 "special"

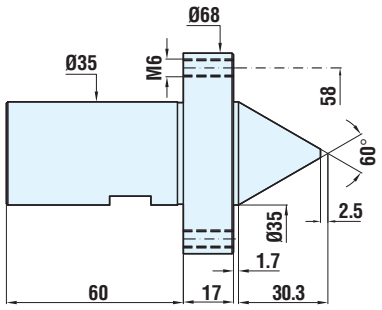
Reduced edge driving pins enable machining from the face driver side of diameters that are too small to be turned by standard size driving pins assembled on the face driver.

Code	Rotat.	Ø A	B
090900084	Counterclockwise	124	6.2
090900089	"	129	8.7
090900094	"	134	11.2
090900099	"	139	13.7

Code	Rotat.	Ø A	B
090901084	Clockwise	124	6.2
090901089	"	129	8.7
090901094	"	134	11.2
090901099	"	139	13.7



Fixed center point for 180/300 "special"



Code
072102763

Fixed center point with slots for 180/300 "special" *(for large centers or holes)*

Available on request

FACE DRIVER FOR GRINDING

"FRB" face drivers and live centers for grinding application can meet roundness tolerance within 1.5 micron and eccentricity tolerance within 2.5 micron to drive non hardened shafts and hardened shafts up to HRC 63.
For load parameters see under mentionend instructions.

***Example:** for shafts in the diameter range from 5 mm to 9 mm, a 90 Kg axial thrust from live centre's side is enough. The face driver has an integrated balance-type self-compensating system (this is "FRB" patented system, which is also used on face drivers for shaft turning).*

This system enables highly sensitive self-compensation of the driving pins. As a result the face driver has considerable drive and concentricity capability on the shaft.

INSTRUCTIONS FOR SELECTING AXIAL LOAD PARAMETERS ON FACE DRIVERS AND LIVE CENTRES

FOR SHAFTS		AXIAL THRUST	
		On driving pins	On live center
FROM Ø	TO Ø	KG	KG
5	9	50 ÷ 80	70 ÷ 110
10	15	60 ÷ 100	90 ÷ 150
16	30	70 ÷ 150	100 ÷ 220
31	50	100 ÷ 200	150 ÷ 300
51	100	150 ÷ 250	220 ÷ 370
101	200	200 ÷ 350	300 ÷ 800

***NOTE:** The above values are purely a guide-line and may vary according to grinding wheel contact area and type of material being machined.*

Thrust check

To check the thrust you need a load cell (see our web site) or a dynamometer; if you don't have any of these measuring instruments, you can obtain thrust values in kg by multiplying the area of the pneumatic or hydraulic cylinder by the pressure of the cylinder in bar or atmospheres with the following formula:

Formula: $r^2 \times 3.14 \times p = T$

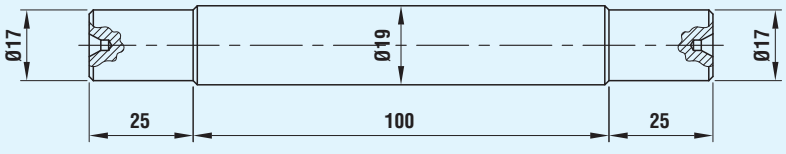
r: *radius (in cm)*
p: *pressure (in bar o atm)*
T: *thrust (kg)*

DRIVING PIN FACE PLATE CENTERING SHAFT

Instructions for centering the driving pins face plate

The centering shaft is used to center the face driver's centre point within 2 thousandths, putting the centering shaft between face driver and live centre in the same axial load conditions as those of the piece to be machined.

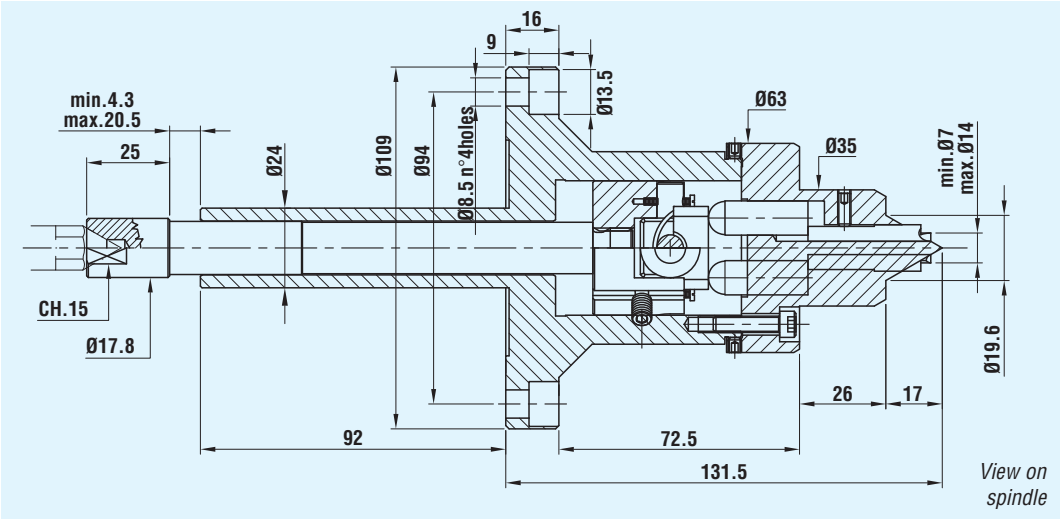
You then use an Allen wrench to turn the eight dowels around the driving pin face plate, while watching the micrometer-comparator positioned on the face driver side of the centering shaft.



CODE 012920001

FACE DRIVER FOR GRINDING Ø 7/25

OPERATED BY PNEUMATIC OR HYDRAULIC CYLINDER



FLANGED

Code
070921072

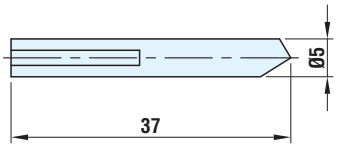
MORSE TAPER FITTING

Code	Taper
070921048	MT4
070922048	MT5
070923048	MT6

SPARE PARTS

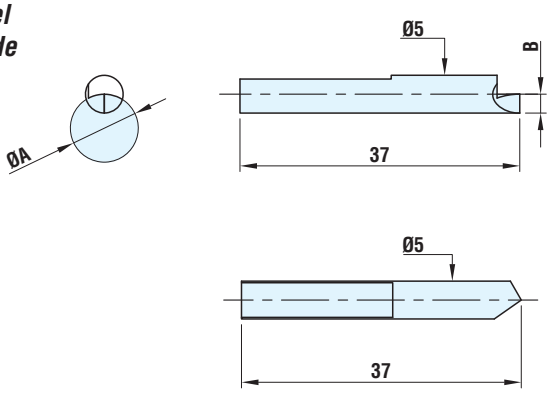
Driving pins for driving shafts from Ø7 to Ø25

Code
080920001



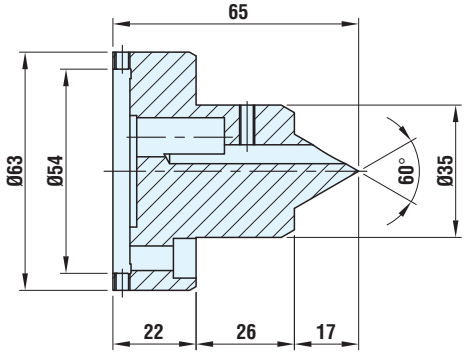
Reduced edge driving pins with hard metal added for driving shafts from Ø7 to Ø25, lowered to permit the wheel to get out on face driver side

Code	Ø A	B
091920007	7	1.5
091920008	8	2
091920009	9	2.5
091920010	10	3
091920012	12	4



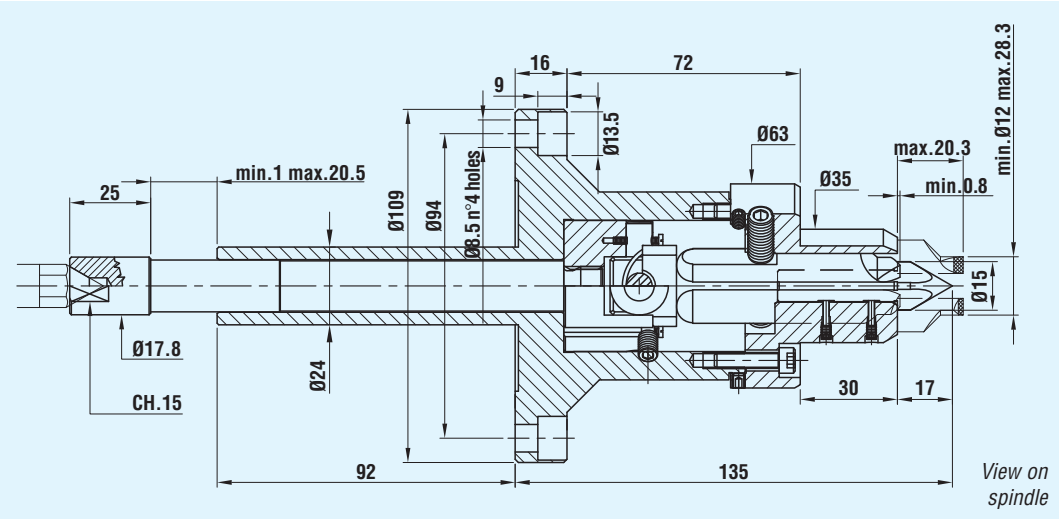
Driving pins face plate for shafts from Ø7 to Ø25

Code
072921101



FACE DRIVER FOR GRINDING Ø 12/70

OPERATED BY PNEUMATIC OR HYDRAULIC CYLINDER



FLANGED

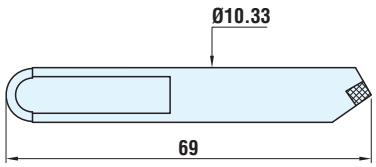
Code
070921066

MORSE TAPER FITTING

Code	Taper
070921042	MT4
070922042	MT5
070923042	MT6

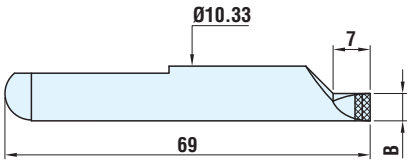
SPARE PARTS

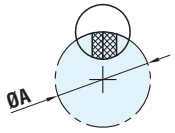
Driving pins with added hard metal for driving shafts from Ø12 to Ø70



Code
080920003

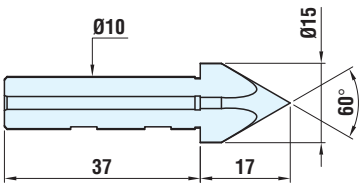
Reduced edge driving pins with hard metal added for driving shafts from Ø12 to Ø70, lowered to permit the wheel to get out on face driver side





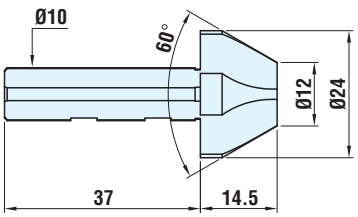
Code	Ø A	B
091920112	12	2.20
091920114	14	3.20
091920116	16	4.20
091920118	18	5.20
091920120	20	6.20
091920122	22	7.20
091920124	24	8.20
091920126	26	9.20

Central point for shafts from Ø12 to Ø70 with centres from Ø2 to Ø14



Code
072920102

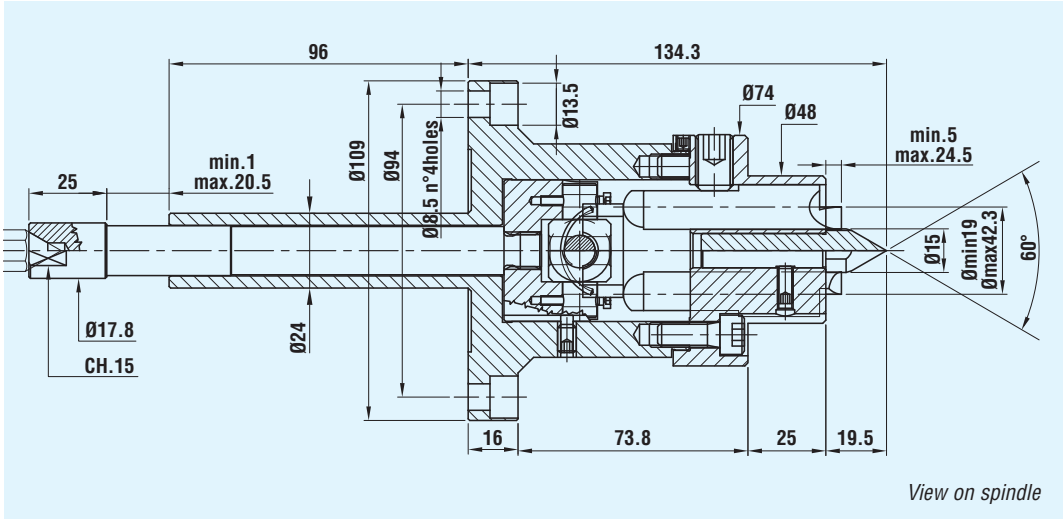
Central point with slots for shafts from Ø17 to Ø70 with centres or holes from Ø14 to Ø23



Code
179200101

FACE DRIVER FOR GRINDING Ø 20/100

OPERATED BY PNEUMATIC OR HYDRAULIC CYLINDER



FLANGED

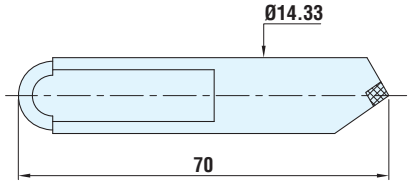
Code
070921090

MORSE TAPER FITTING

Code	Taper
070921082	MT4
070922082	MT5
070923082	MT6

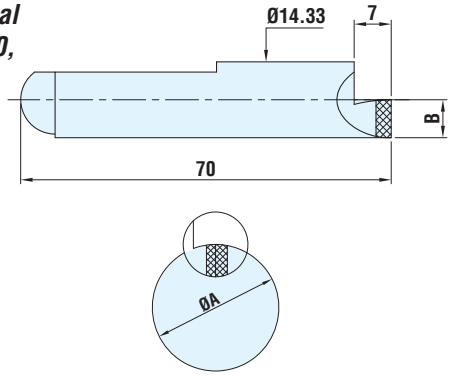
SPARE PARTS

Driving pins with added hard metal for driving shafts from Ø20 to Ø100



Code
080920004

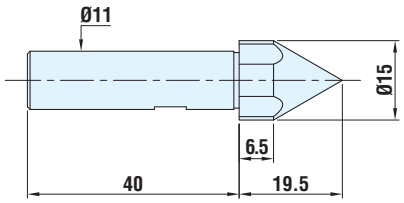
Reduced edge driving pins with hard metal added for driving shafts from Ø20 to Ø100, lowered to permit the wheel to get out on face driver side



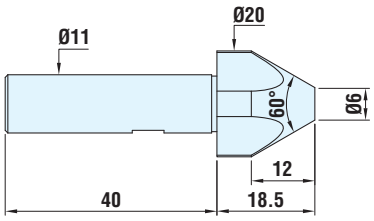
Code	Ø A	B
091920219	19	2.70
091920222	22	4.20
091920224	24	5.20
091920226	26	6.20
091920228	28	7.20
091920232	32	9.20
091920236	36	11.20

FIXED Center point with slots

(for large centers or holes)

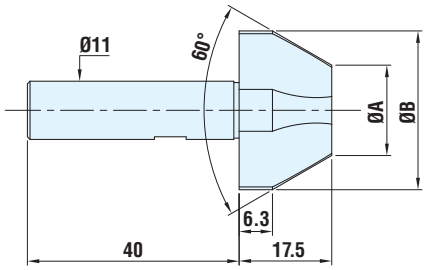


Code
072920103



Code
179200112

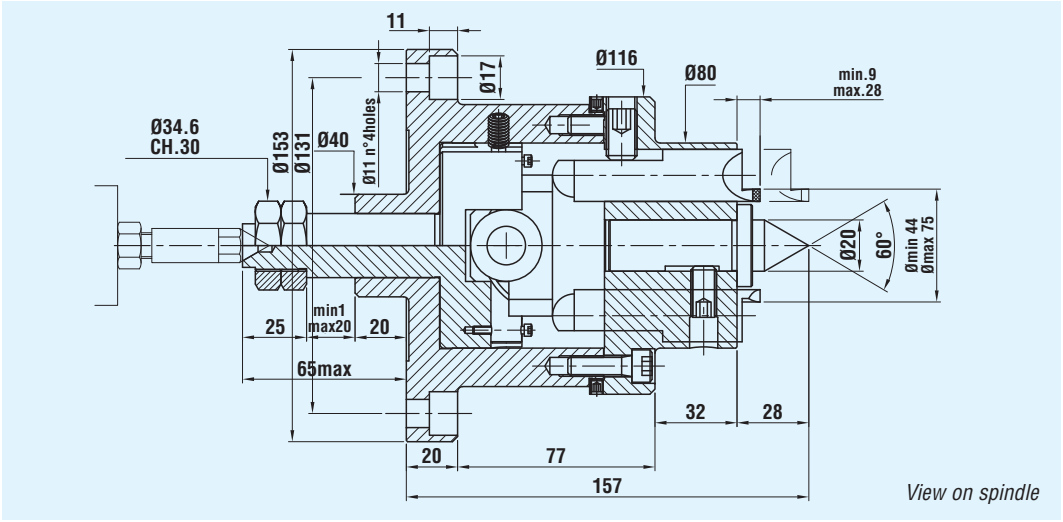
Central point with slots for shafts from Ø17 to Ø70 with centres or holes from Ø14 to Ø23



Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
179200114	17	30	19	29
179200116	23	36	25	35

FACE DRIVER FOR GRINDING Ø 45/150

OPERATED BY PNEUMATIC OR HYDRAULIC CYLINDER



View on spindle

FLANGED

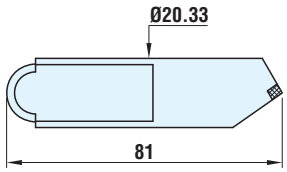
Code
070921098

MORSE TAPER FITTING

Code	Taper
070921094	MT5
070922094	MT6

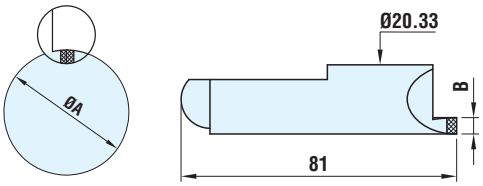
SPARE PARTS

Driving pins with added hard metal for driving shafts from Ø45 to Ø150



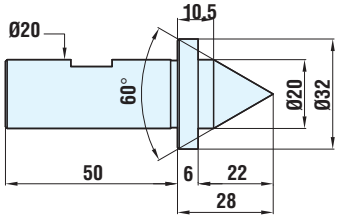
Code
080920005

Reduced edge driving pins with hard metal added for driving shafts from Ø45 to Ø150, lowered, to permit the wheel to get out on face driver side



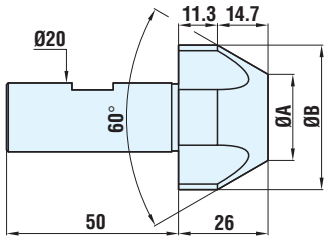
Code	Ø A	B
091920344	44	4.8
091920350	50	7.8
091920355	55	10.3
091920360	60	12.8
091920365	65	15.3

Central point for shafts from Ø45 to Ø150 with centers from Ø3 to Ø22



Code
072920104

Central point with slots for shafts from Ø45 to Ø150 with centers

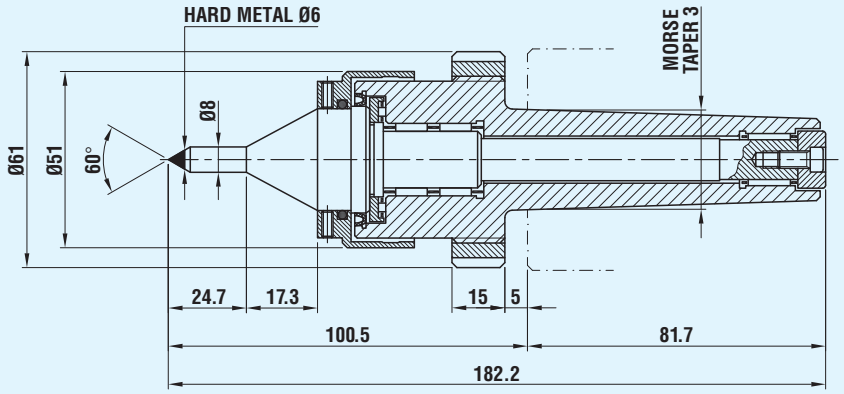


Code centre points with slots	Dimensions points with slots		For centers or "F" holes	
	Ø A	Ø B	from Ø	to Ø
171713031	15	32	18	31
171713032	25	42	28	41
171713033	35	52	38	51
171713034	45	62	48	61
171713035	55	72	58	71

LIVE CENTER FOR GRINDING

MORSE TAPER 3

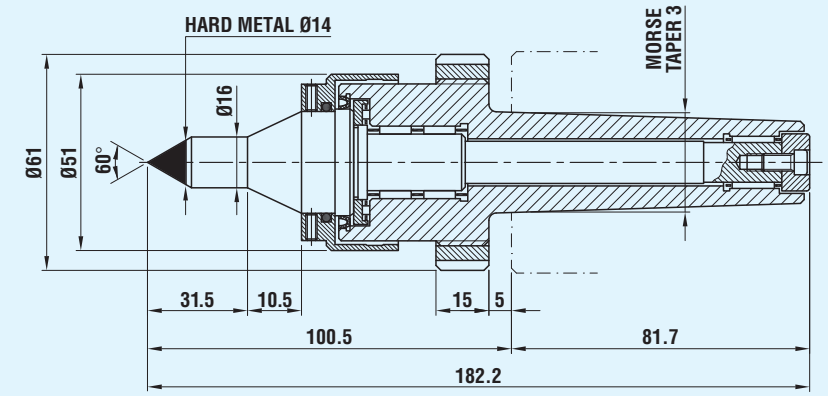
CODE 010921101



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
700	20	5000

with tolerances:
roundness < .0015
eccentricity < .0025

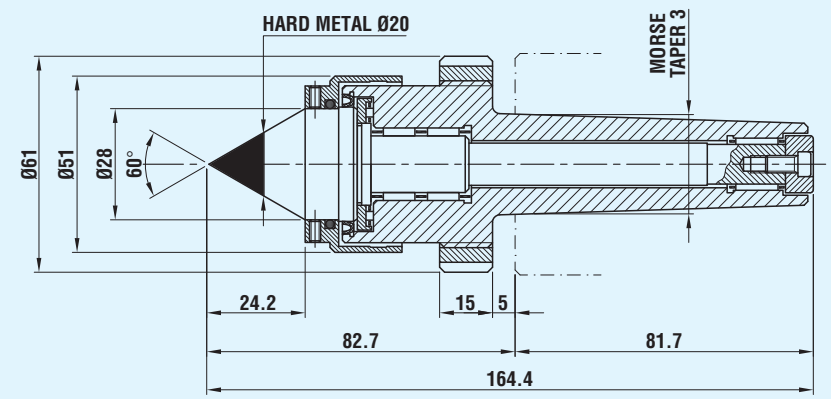
CODE 010922101



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
700	60	5000

with tolerances:
roundness < .0015
eccentricity < .0025

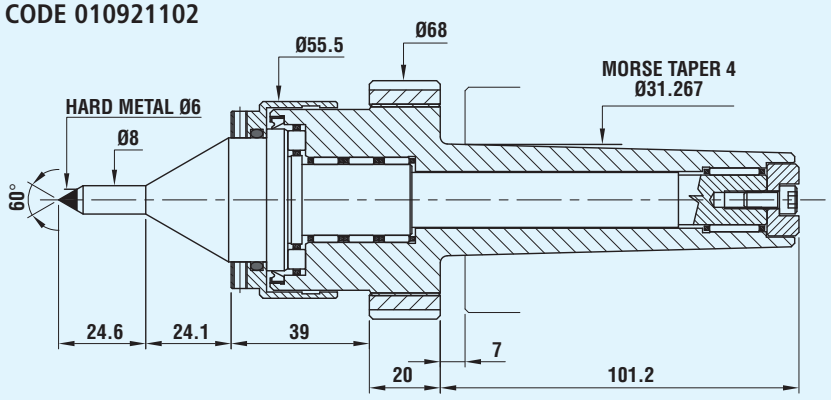
CODE 010923101



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
700	150	5000

with tolerances:
roundness < .0015
eccentricity < .0025

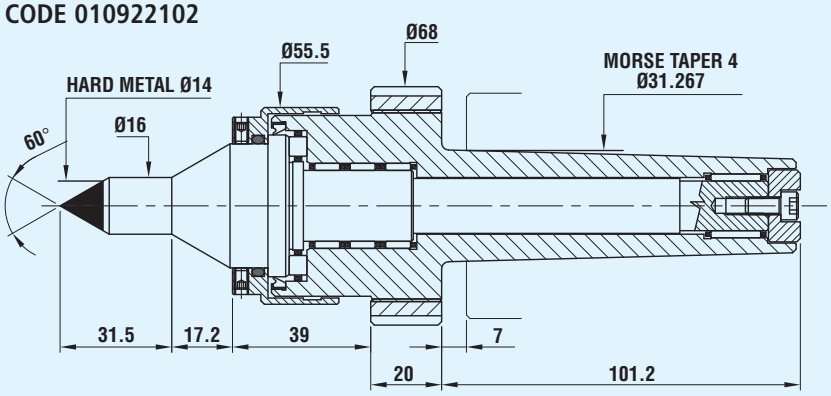
CODE 010921102



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
900	20	4000

with tolerances:
roundness < .0015
eccentricity < .0025

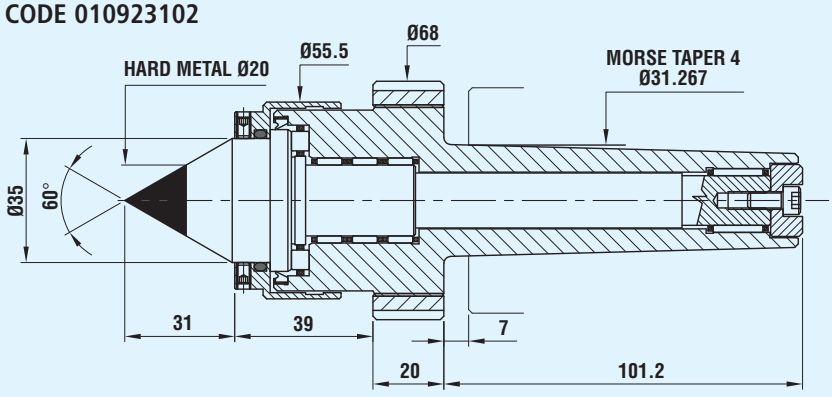
CODE 010922102



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
900	60	4000

with tolerances:
roundness < .0015
eccentricity < .0025

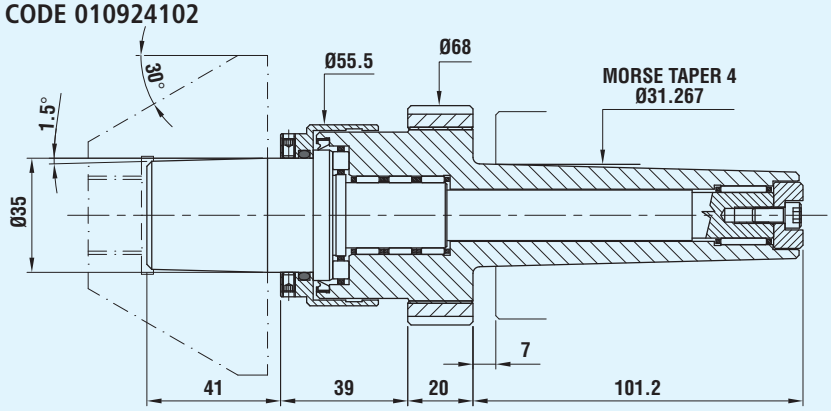
CODE 010923102



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
900	850	4000

with tolerances:
roundness < .0015
eccentricity < .0025

CODE 010924102



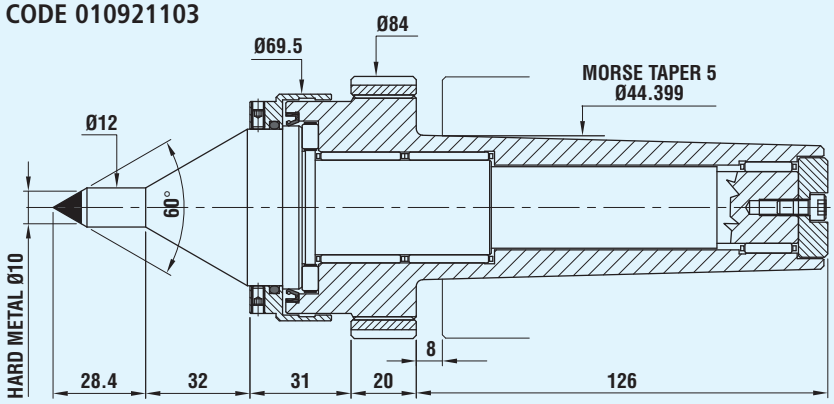
Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
900	850	4000

with tolerances:
roundness < .0015
eccentricity < .0025

LIVE CENTER FOR GRINDING

MORSE TAPER 5

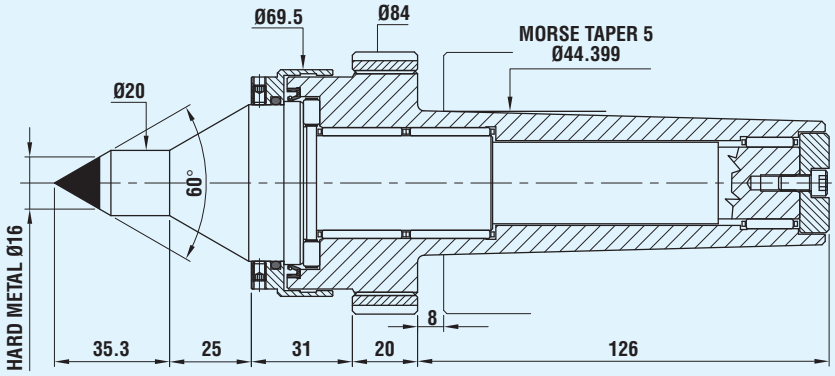
CODE 010921103



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
1200	60	3000

with tolerances:
roundness < .0015
eccentricity < .0025

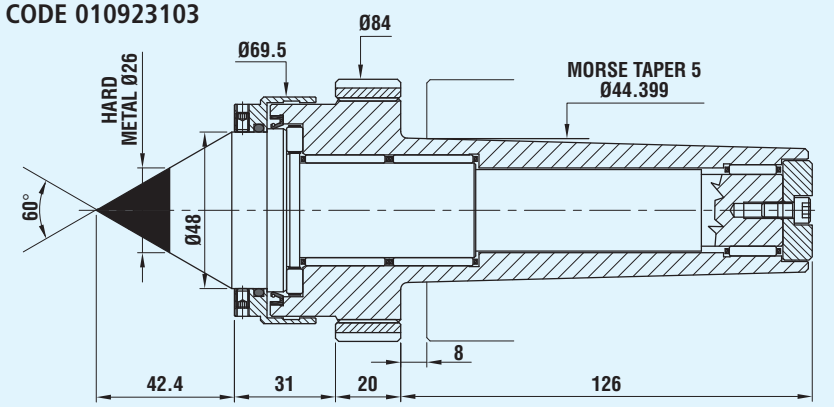
CODE 010922103



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
1200	250	3000

with tolerances:
roundness < .0015
eccentricity < .0025

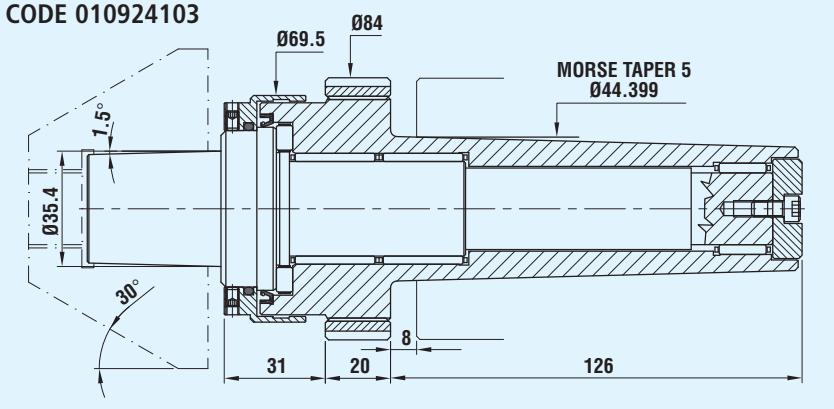
CODE 010923103



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
1200	1800	3000

with tolerances:
roundness < .0015
eccentricity < .0025

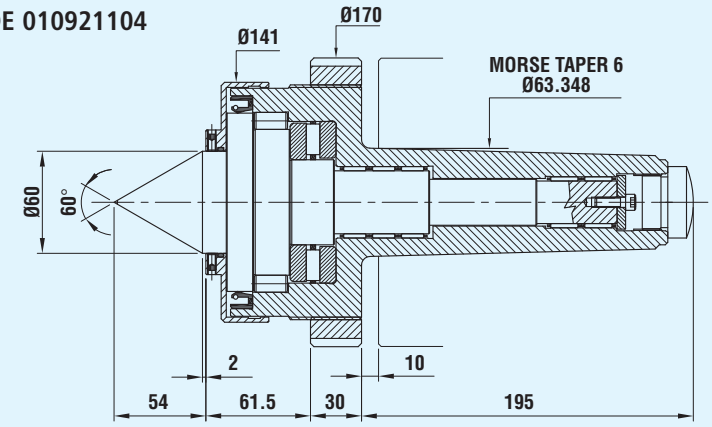
CODE 010924103



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
1200	1800	3000

with tolerances:
roundness < .0015
eccentricity < .0025

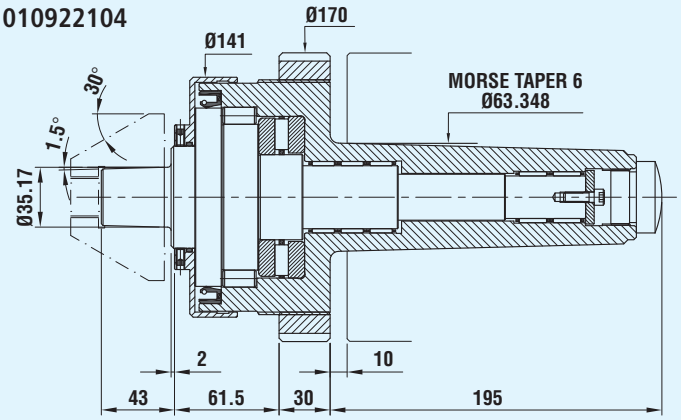
CODE 010921104



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
14700	12000	500

with tolerances:
roundness < .0030
eccentricity < .0050

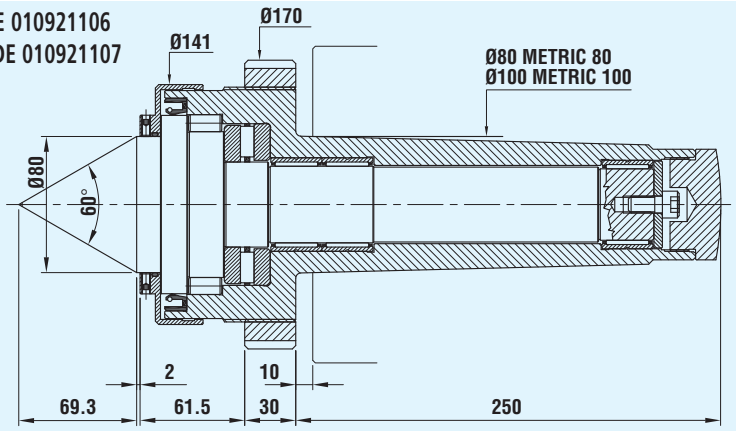
CODE 010922104



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
14700	12000	500

with tolerances:
roundness < .0030
eccentricity < .0050

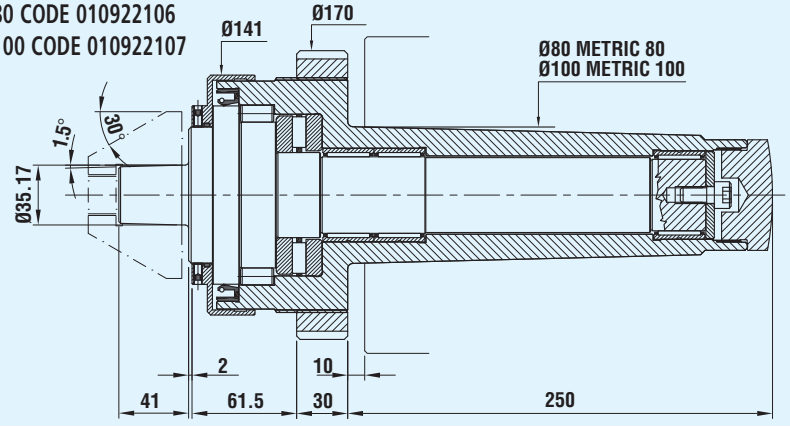
M80 CODE 010921106
M100 CODE 010921107



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
14700	22000	500

with tolerances:
roundness < .0030
eccentricity < .0050

M80 CODE 010922106
M100 CODE 010922107



Max axial load Kg.	Max radial load (Workpiece weight) Kg.	Max speed r.p.m.
14700	22000	500

with tolerances:
roundness < .0030
eccentricity < .0050

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- with integral shaft for turning shafts
- with head carrying integral shaft

Dead centers with extraction nut for turning shafts
- with interchangeable center and extraction nut for turning shafts and pipes

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CATALOGUE N°
2

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