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Tools for moulding — Components of compression and injection moulds and diecasting dies — List of equivalent terms and symbols

Outillage de moulage — Composants des moulages par compression, moules d'injection et moules pour fonderie sous pression — Termes et symboles

Reference number
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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

This second edition cancels and replaces the first edition (ISO 12165:2000) which has been technically revised.

The main change compared to the previous edition is the addition of the reference to ISO 16915.

In addition to text written in two of the three official ISO languages (English and French), this document gives text in German and Swedish. This text is published under the responsibility of the member bodies for Germany (DIN) and Sweden (SIS) and is given for information only. Only the text given in the official languages can be considered as ISO text.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Tools for moulding — Components of compression and injection moulds and diecasting dies — List of equivalent terms and symbols

1 Scope

This document specifies the terms generally in use for components of compression and injection moulds and diecasting dies. The function of these components is shown in Figure 1 to Figure 30.

NOTE The figures are given as examples.

The purpose of this document is to introduce coherent terms in professional terminology particularly with regard to the use in CAD (Computer Aided Drafting).

Various symbols are specified for simplified representation on technical drawings.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Nomenclature for components

4.1 Plates

Table 1 gives the equivalent terms related to plates in English, French, German and Swedish and provides for each listed component, the key and the reference of the figure where this component is shown and the reference of ISO standard of this component, when it exists.

Table 1 — Nomenclature related to plates

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
clamping plate, overhanging with centring recess	semelle débordante avec logement pour bague de centrage	Aufspannplatte, überstehend mit Zentrierausdrehung	fästplatta, överhängande, med centreringsursvarvning	11	1	ISO 6753-2
clamping plate, overhanging without centring recess	semelle débordante sans logement pour bague de centrage	Aufspannplatte, überstehend ohne Zentrierausdrehung	fästplatta, överhängande, utan centreringsursvarvning	11	2	ISO 6753-2
clamping plate, flush with centring recess	semelle non débordante avec logement pour bague de centrage	Aufspannplatte, bündig mit Zentrierausdrehung	fästplatta, utan överhäng, med centreringsursvarvning	11	3	ISO 6753-2
clamping plate, flush without centring recess	semelle non débordante sans logement pour bague de centrage	Aufspannplatte, bündig ohne Zentrierausdrehung	fästplatta, utan överhäng, utan centreringsursvarvning	11	4	ISO 6753-2
cavity plate, fixed half	plaque porte-empreinte, partie fixe	Formplatte, feste Seite	formplatta fast sida	11	5	ISO 6753-2
cavity plate, moving half	plaque porte-empreinte, partie mobile	Formplatte, bewegliche Seite	formplatta rörlig sida	11	6	ISO 6753-2
intermediate plate	plaque intermédiaire	Zwischenplatte	stödplatta	11	7	ISO 6753-2
ejector retainer plate	plaque d'éjection	Auswerferhalteplatte	utstötarfästplatta	11	8	ISO 6753-2
ejector base plate	contre-plaque d'éjection	Auswerfergrundplatte	utstötargrundplatta	11	9	ISO 6753-2
riser	tasseau	Leisten	linjal	11	10	ISO 6753-2

4.2 Accessories

Table 2 gives the equivalent terms of accessoires in English, French, German and Swedish and provides for each listed component, the key and the reference of the figure where this component is shown and the reference of ISO standard of this component, when it exists.

Table 2 — Nomenclature related to accessories

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
ejector rod	queue d'éjection	Auswerferbolzen	utstötarbult	16, 21, 25	11	
seating washer	repos d'éjection	Anschlagscheibe	anslagsbricka	16	12	
distance disc	entretoise	Distanzscheibe	distansbricka	17, 21	14	
compression spring, round cross section	ressort de compression, section ronde	Druckfeder, runder Querschnitt	tryckfjäder med rund trådprofil	16	15	
spring plunger	vis à bille	federndes Druckstück	kulstopp	16	16	
locating guide pillar, shouldered	colonne de guidage avec plot de centrage	Führungssäule, abgesetzt, mit Zentrieransatz	styrpelare med bakstyrning	16, 23, 25, 26	17	ISO 8017
guide pillar, shouldered	colonne de guidage sans plot de centrage	Führungssäule, abgesetzt, ohne Zentrieransatz	styrpelare utan bakstyrnining	23	18	ISO 8017
angle pin	doigt de démoulage	Schrägsäule	snedpinne	16, 30	19	ISO 8404
guide pillar	colonne de guidage	Führungssäule	styrpelare	16, 20	20	ISO 8017
locating guide bush, headed	bague de guidage avec plot de centrage	Führungsbuchse mit Zentrieransatz	styrbussning med centreringstapp	18, 21, 22, 25	21	ISO 8018
guide bush, headed	bague de guidage sans plot de centrage	Führungsbuchse ohne Zentrieransatz	styrbussning utan centreringstapp	18, 23, 24	22	
guide sleeve	douille de guidage	Führungshülse	styrhylsa	18, 26	23	
hexagon socket set screw	vis à six pans creux sans tête	Gewindestift mit Innensechskant	stoppskruv med sexkantshål	16, 23	24	ISO 4028
core pin	broche	Kernstift	kärnstift	20, 22, 24	25	
ball bearing guide bush	bague de guidage à bille	Kugelführungsbuchse	linjärt rullningslager	16, 25	26	
lifting eye bolt	anneau de levage	Ringschraube	lyftögleskruv	22	27	ISO 3266
countersunk socket head screw	vis à tête fraisée à six pans creux	Senkschraube mit Innensechskant	sänkskruv med sexkantshål	17, 21	28	ISO 10642
support pillar	pilier d'entretoisement	Stützrolle	stödkuts	16, 25	29	ISO 10073
disc spring	ressort à disques	Tellerfeder	tallriksfjäder	16	30	
locating element, round	plot de centrage	Zentriereinheit, rund	centreringsenhet, rund	16, 17, 21	31	ISO 8406
centring sleeve	douille de centrage	Zentrierhülse	centreringshylsa	16, 18, 22, 26	32	ISO 9449
locating ring, moving half	bague de centrage, partie mobile	Zentrierflansch, bewegliche Seite	centreringsring, rörlig sida	16, 17, 25	33	ISO 10907

Table 2 *(continued)*

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
locating ring, fixed half	bague de centrage, partie fixe	Zentrierflansch, feste Seite	centreringsring, fast sida	16, 17, 25	34	ISO 10907
hexagon socket head cap screw	vis à tête cylindrique à six pans creux	Zylinderschraube mit Innensechskant	sexkanthålsskruv	16, 17, 18, 19	35	ISO 4762
dowel pin	goupille cylindrique	Zylinderstift	styrpinne (härdad cylindrisk pinne)	16, 25	36	ISO 8734

4.3 Components for gating

Table 3 gives the equivalent terms of components for gating in English, French, German and Swedish and provides for each listed component, the key and the reference of the figure where this component is shown and the reference of ISO standard of this component, when it exists.

Table 3 — Nomenclature related to components for gating

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
sprue bush	buse d'injection	Angießbuchse	ingötsbussning	16, 20, 22, 29	37	ISO 10072
sprue puller insert	arrache carotte	Angußhaltebuchse	görturdragarbussing	20	38	ISO 16915
heated nozzle, single probe	buse chaude	beheizte Angießdüse, Einfachanschnitt	varmgötsdysa	17, 18	39	
distributor bushing, unheated	reçu de buse de presse non chauffé	Zwischenbuchse, unbeheizt	inloppsbussning, kall	18, 19, 26	40	
filter cartridge	cartouche filtrante	Filtereinsatz	filterinsats	21, 26	41	
hot runner manifold block, straight bar	bloc chaud en ligne	Heißkanal-Verteilerblock, Balkenform	varmkanalblock, balkform	18, 21, 24, 26	42	
pneumatic nozzle	buse pneumatique	Pneumatik-Düse	pneumatiskt munstycke	25	44	
pneumatic needle valve	obturateur pneumatique	Pneumatik-Nadelventil	pneumatiskt munstycke	18	45	
spacer disc	cale	Stützscheibe	stödbricka	24, 26	46	
torpedo	busette d'injection	Düsentorpedo	munstyckstorped	26	47	
melt chamber bush	douille pré-chambre	Vorkammerbuchse	förkammarbussning	19, 29	48	

4.4 Components for cooling/heating

Table 4 gives the equivalent terms of components for cooling/heating in English, French, German and Swedish and provides for each listed component, the key and the reference of the figure where this component is shown and the reference of ISO standard of this component, when it exists.

Table 4 — Nomenclature related to components for cooling/heating

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
connection housing	embase pour connecteur	Anschlußgehäuse	anslutningskåpa	18, 21	51	
shut-off nipple, with valve	raccord rapide avec valve automatique	Verschlußnippel mit Ventil	anslutningsnippel med ventil	17, 25	52	
pressure transducer	capteur de pression	Druckaufnehmer	direkt tryckgivare	18	54	
heater band	collier chauffant	Heizmanschette	värmemanschett	24, 26	55	
cartridge heater, cylindrical	cartouche chauffante, cylindrique	Heizpatrone, zylindrisch	värmepatron, cylindrisk	19	56	
cartridge heater, tapered	cartouche chauffante, conique	Heizpatrone, konisch	värmepatron, konisk	24, 26	57	
cavity pressure transducer	capteur de pression	Kraftaufnehmer (Meßlasche)	indirekt tryckgivare	17	58	
tubular heater	résistance chauffante hélicoïdale	Ringheizkörper	ringformad värmare	16	59	
hose clip	collier de serrage	Schlauchschelle	slangklämma	17	60	
hose nipple, straight	raccord intermédiaire	Schlauchtülle, gerade	slangnippel, rak	16	61	
hose nipple, 45° design	raccord intermédiaire coudé à 45°	Schlauchtülle, 45° abgewinkelt	slangnippel, 45°	19	62	
spiral core	serpentin de refroidissement	Spiralkern	spiralkärna	17, 23, 25	63	
cooling tube	tube de refroidissement	Temperierrohr	kylrör	19, 26	64	
rubber hose	tuyau souple	Temperierschlauch	temperingsslang	17	65	
thermocouple	thermocouple	Thermofühler	temperaturgivare	16	66	
shut-off coupling with valve, straight	coupleur rapide avec valve automatique	Verschlußkupplung mit Ventil, gerade	snabbkoppling med backventil, rak	16, 26	67	
shut-off coupling with valve, 45° design	coupleur rapide coudé à 45°	Verschlußkupplung mit Ventil, 45° abgewinkelt	snabbkoppling, 45°, med backventil	17	68	
thermal insulating sheet	feuille d'isolation thermique	Wärmeisolierplatte	värmeskyddsplatta	17, 21, 26	70	ISO 15600
extension nipple	coupleur mouliste long	Verlängerungsnippel	förlängningsnippel	25	71	
hexagon socket pipe plug	bouchon fileté à six pans creux	Verschlußschraube	sexkanthålspropp	21	72	
sealing plug	bouchon de fermeture	Verschlußstopfen	tätningsplugg	73	25	

Table 4 *(continued)*

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
O-ring	joint torique	O-Ring	O-ring	17, 20, 21, 26	74	ISO 3601

4.5 Components for ejection, knock-out operations

Table 5 gives the equivalent terms of components for ejection, knock-out operations in English, French, German and Swedish and provides for each listed component, the key and the reference of the figure where this component is shown and the reference of ISO standard of this component, when it exists.

Table 5 — Nomenclature related to components for ejection, knock-out operations

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
ejector sleeve	éjecteur tubulaire	Auswerferhülse	rörutstötare	17, 20, 22	75	ISO 8405
ejector pin, cylindrical head	éjecteur à tête cylindrique	Auswerferstift, zylindrischer Kopf	utstötare med cylindriskt huvud	16, 17, 20, 22	76	ISO 6751
shouldered ejector pin with cylindrical head	éjecteur à tête cylindrique, épaulé	Auswerferstift, zylindrischer Kopf und abgesetzter Schaft	utstötare med ansats och cylindriskt huvud	24	77	ISO 8694
ejector pin, conical head	éjecteur à tête conique	Auswerferstift, kegeliger Kopf	utstötare med koniskt huvud	16	78	
flat ejector pin	éjecteur lame	Flachauswerfer	bladutstötare	18	79	ISO 8693
accelerated knock-out	accélérateur d´éjection	Beschleunigungswippe	accelerationsvippa	16	80	
threaded core blank	ébauche de noyau fileté	Gewindekern	gängad kärna	19, 21	81	
taper roller bearing	roulement à rouleaux coniques	Kegelrollenlager	koniskt rullager	21	82	
latch locking unit	crochet de moule	Klinkenzug	klinklås	16, 19, 20	83	
parallel key	clavette	Paßfeder	plattkil	21	85	
grooved ball bearing	roulement à billes rainuré	Rillenkugellager	spårkullager	21	86	
guided ejector pull back device	système de rappel d'éjection	Rückzug-Führungsvorrichtung für Auswerferplatten	återföringsstyrningsutrustning för utstötarplatta	22	88	
ejector coupling device, pneumatic	coupleur pneumatique	Auswerferkupplung, pneumatisch	pneumatisk utstötarkoppling	26	89	
helical spindle	tige filetée	Antriebsspindel	drivspindel	21	90	
helical nut	écrou à pas rapide	Antriebsmutter	drivmutter	21	91	
gear wheel	pignon	Stirnrad	kugghjul	21	92	
extension rod	doigt de prolongation	Verlängerungsbolzen	förlängningsdorn	24	93	
two-stage ejector	éjecteur bi-étagé	Zweistufen-Auswerfer	tvåstegsutstötare	17, 24, 26	94	
intermediate gear wheel	pignon intermédiaire	Zwischenrad	mellankugghjul	21	95	
rack	crémaillère	Zahnstange	kuggstång	19	96	

4.6 Further particular parts for moulds and dies

Table 6 gives the equivalent terms of further particular parts for moulds and dies in English, French, German and Swedish and provides for each listed component, the key and the reference of the figure where this component is shown and the reference of ISO standard of this component, when it exists.

Table 6 — Nomenclature related to further particular parts for moulds and dies

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
stripper bushing	bague dévêtisseuse	Abstreifbuchse	utstötarring	19, 20, 26	97	
stripper plate	plaque dévêtisseuse	Abstreifplatte	avstrykarplatta	19, 22, 26	98	
sprue puller plate	plaque dévêtisseuse des canaux d'injection dans moule trois plaques	Angußabstreiferplatte	götavrivarplatta	23	99	
runner distribution plate	plaque de répartition des canaux d'injection	Angußverteilerplatte	götfördelarplatta	23	100	
sprue puller pin	arrache carotte	Angußhaltestift	göturdragarpinne	23	101	ISO 16915
link piece	bride	Anschlagplatte	utstötarbrygga	25	102	
guide strip	barre conductrice des tiroirs	Backenführungsleiste	backstyrning	19	104	
split retainer plate	plaque de base des tiroirs	Backengrundplatte	backgrundplatta	19	105	
chase bolster	plaque de serrage des tiroirs	Backenschließplatte	backlåsplatta	19	106	
limitation bolt	limitateur de course	Begrenzungsbolzen	begränsningsbult	23	107	
wear pad	plaquette d'usure	Druckplatte	tryckplatta	16	110	
jaw actuator	activateur de tiroir	Entriegelungsstück	backföring	19	111	
slider	coulisseau	Schieber	slid	16	113	
split	tiroir	Backe	back	19, 23	114	
cavity insert, fixed half	empreinte rapportée, partie fixe	Einsatz, feste Seite	forminsats, fast sida	17, 18, 22	115	
cavity insert, movable half	empreinte rapportée, partie mobile	Einsatz, bewegliche Seite	forminsats, rörlig sida	18	116	
core	noyau	Kern	kärna	22	117	
guide strip	barre de guidage	Führungsleiste	styrlist	23	118	
retaining plate	plaque porte-noyau	Halteplatte	hållarplatta	16, 23	119	
pilot threaded bushing	guide pour système de filetage	Leitgewindebuchse	ledgängad bussning	21	120	
return pin	rappel anticipé d'éjection	Rückdruckstift	återförarpinne	22, 26	121	
slanted ejector	système de démoulage	Schrägauswerfer	snedutstötare	20, 25	122	
hexagon socket head shoulder screw	vis de centrage à tête cylindrique à six pans creux et à bout fileté réduit	Zylinderkopfschrauben mit Innensechskant und Ansatzschaft	ansatsskruv med sexkantshål	16	124	ISO 7379

Table 6 *(continued)*

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
plug baffle	déflecteur	Umlenksteg	baffel	18	125	

5 Nomenclature of particular parts for diecasting

Table 7 gives the equivalent terms of particular parts for diecasting in English, French, German and Swedish and provides for each listed component, the key and the reference of the figure where this component is shown and the reference of ISO standard of this component, when it exists.

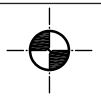
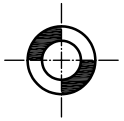
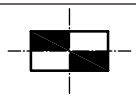
Table 7 — Nomenclature related to particular parts for diecasting

Designation				Relevant Figure	Relevant key	ISO reference
English	French	German	Swedish			
sprue spreader	éclateur	Angußverteiler	motplugg	27	126	
transfer pin	système de couplage	Auswerferbolzen	utstötarstång	27	127	
sprue bush	buse d'injection	Angießbuchse	ingötsbussning	28	128	ISO 10072
cooling ring	anneau de refroidissement	Kühlring	kylmantel	27, 28, 29	129	
core-pulling coupling	noix d´accouplement de tire-noyau	Kernzugkupplung	hydraulstångskoppling	30	130	
coupling spigot	coupleur	Kupplungszapfen	hydraulstångskoppling i slid	30	131	
sprue puller	arrache carotte	Angusshaltebuchsen	spridare	30	132	ISO 16915

6 Symbols used for mould design (simplified representation for technical drawings)

Table 8 gives the symbols used for mould design for simplified representation for technical drawings.

Table 8 — Symbols used for mould design

Term				Graphical symbol[a]
English	French	German	Swedish	
parting level	plan de joint	Trennebene	delningsplan	
first parting level	premier plan de joint	1. Trennebene	1:a verktygsdelning	
second parting level	deuxième plan de joint	2. Trennebene	2:a verktygsdelning	
third parting level	troisième plan de joint	3. Trennebene	3:e verktygsdelning	
ejector pin	éjecteur	Auswerferstift	utstötare	
ejector sleeve	éjecteur tubulaire	Auswerferhülse	rörutstötare	
flat ejector pin	éjecteur lame	Flachauswerfer	bladutsötare	

[a] These graphical symbols should be used exclusively in design drawings for injection and compression moulds and diecasting dies.

7 Summary of typical mould base configurations

See Figure 1 to Figure 6.

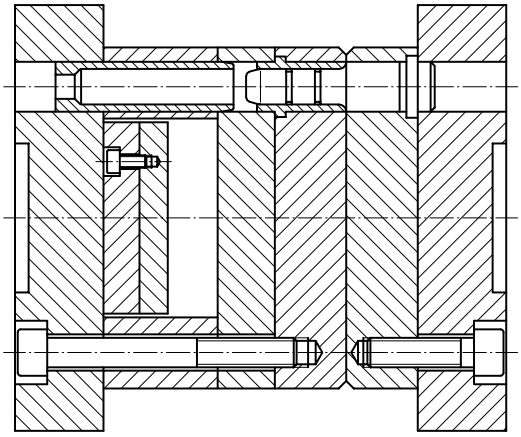


Figure 1 — Standard mould

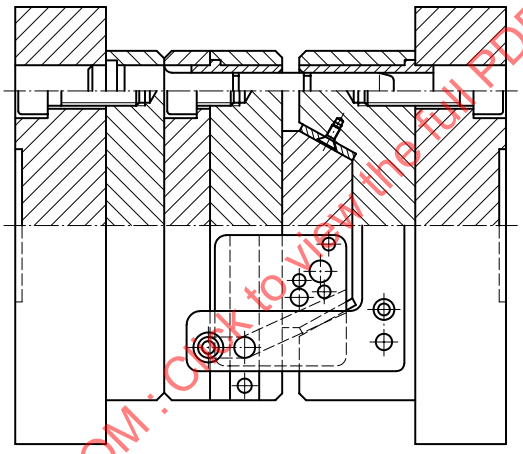


Figure 2 — Split mould

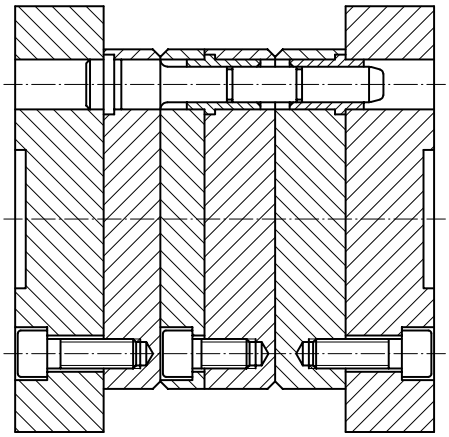


Figure 3 — Stripper plate

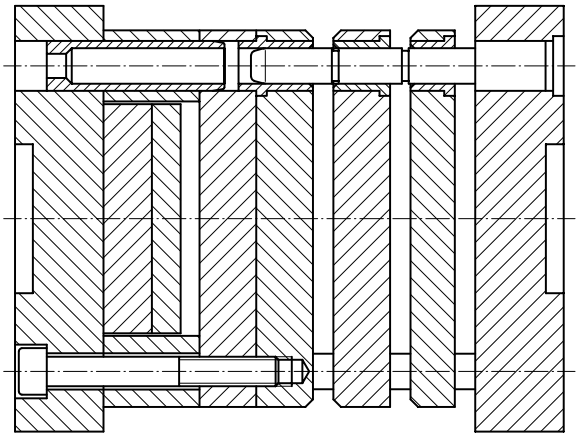


Figure 4 — Three-plate mould

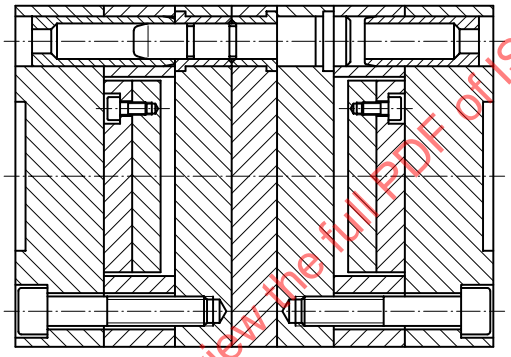


Figure 5 — Stack mould

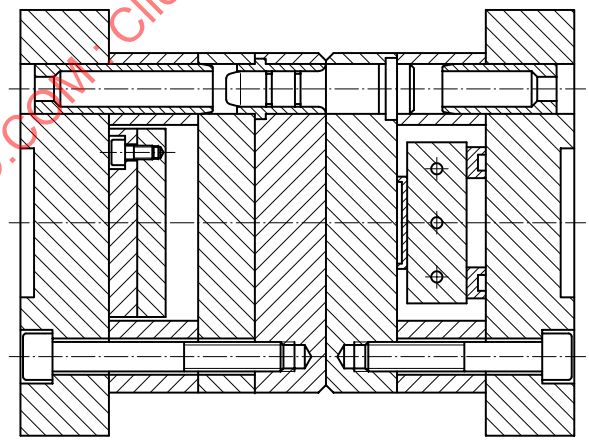


Figure 6 — Hot-runner mould

8 Types of clamping plate

See Figure 7 to Figure 11.

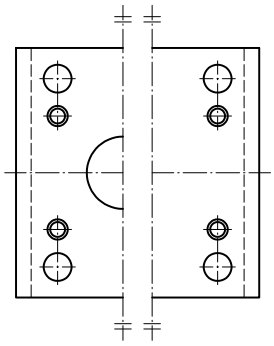


Figure 7 — Overhanging in longitudinal direction

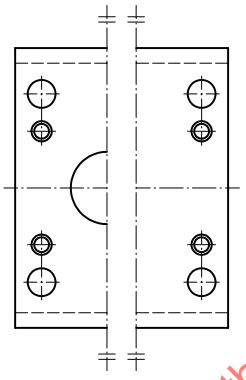


Figure 8 — Overhanging in lateral direction

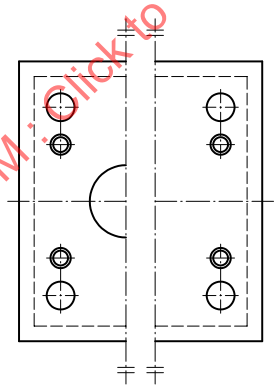


Figure 9 — Overhanging on all sides

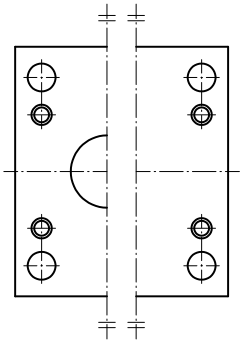
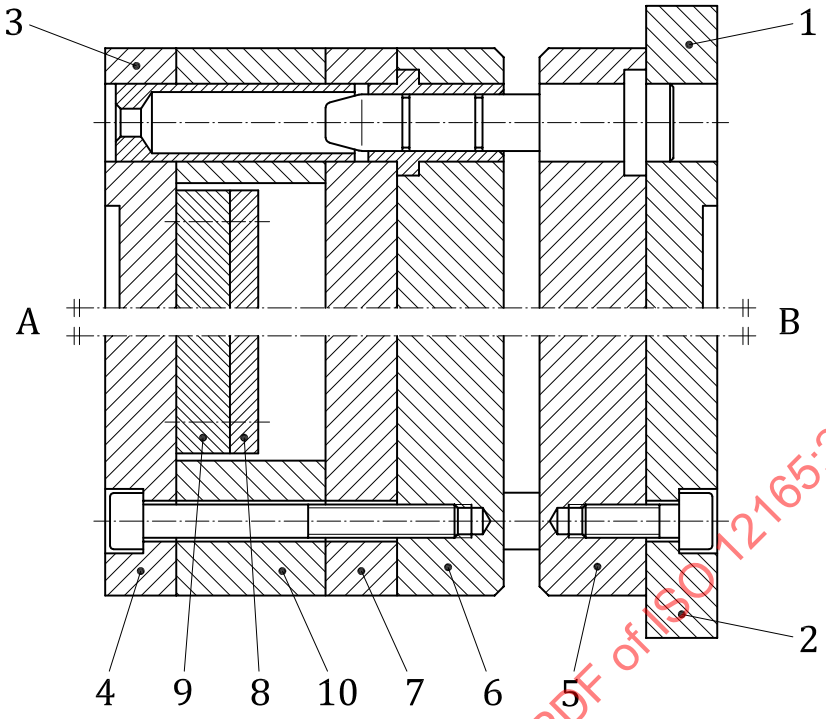


Figure 10 — Flush on all sides



Key

A moveable half

B fixed half

Figure 11 — Standard mould

9 Mounting positions for risers or riser segments

See Figure 12 to Figure 15.

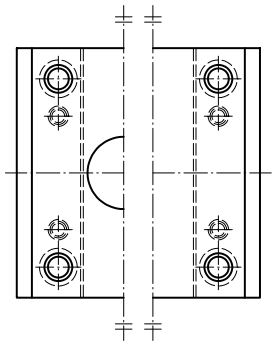


Figure 12 — Longitudinal risers

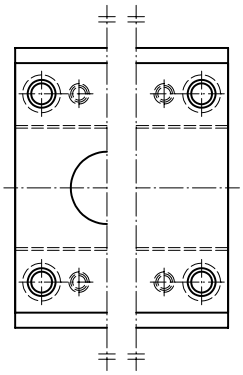


Figure 13 — Lateral risers

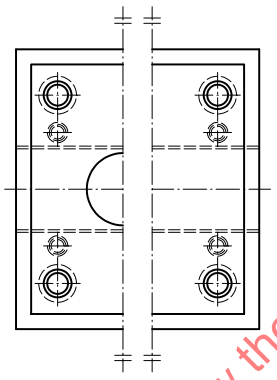


Figure 14 — Lateral risers

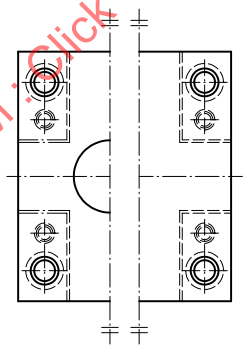


Figure 15 — Riser segments

10 Various designs of injection mould

See Figure 16 to Figure 26.

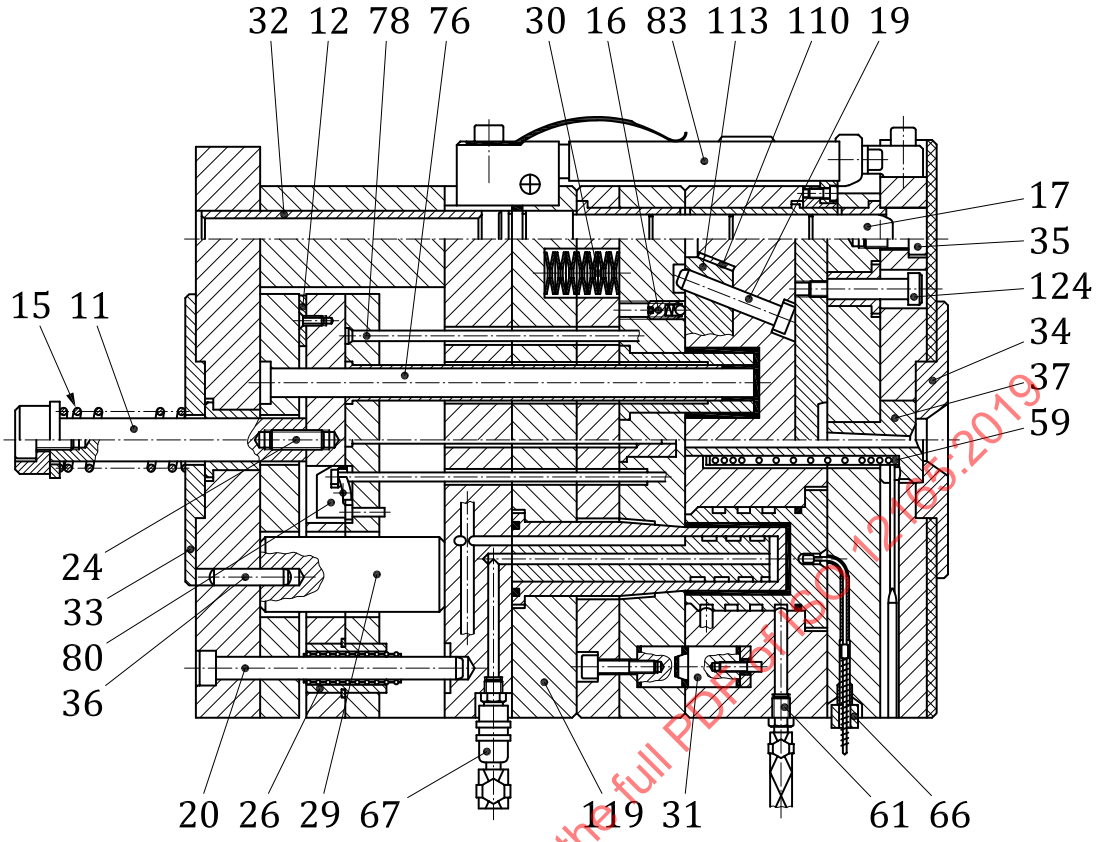


Figure 16

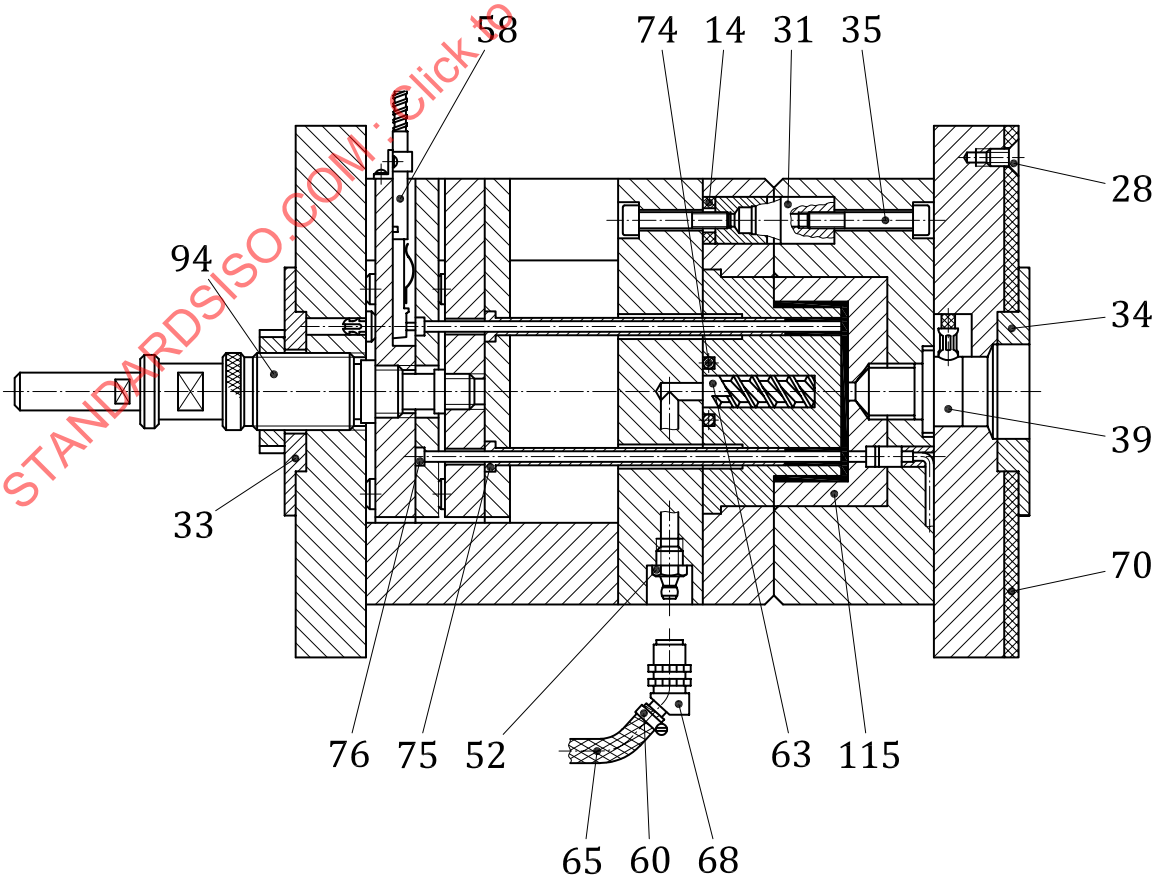


Figure 17

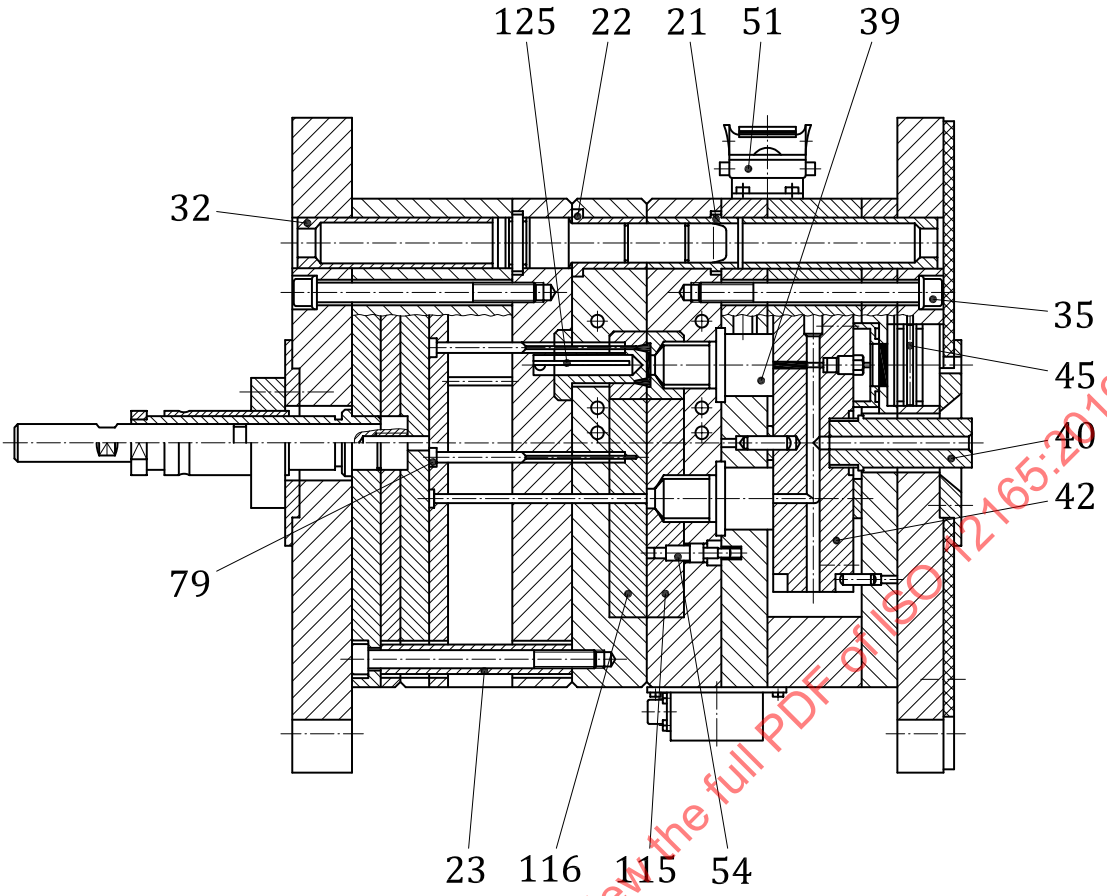


Figure 18

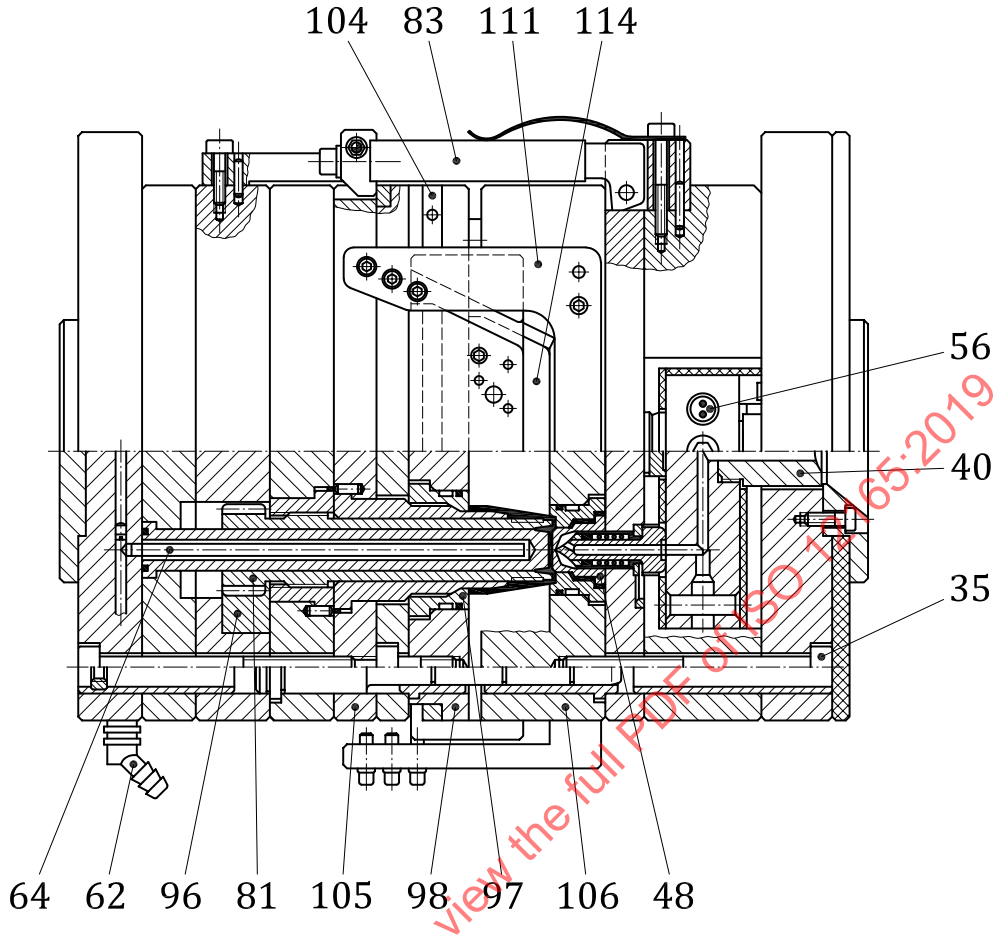


Figure 19

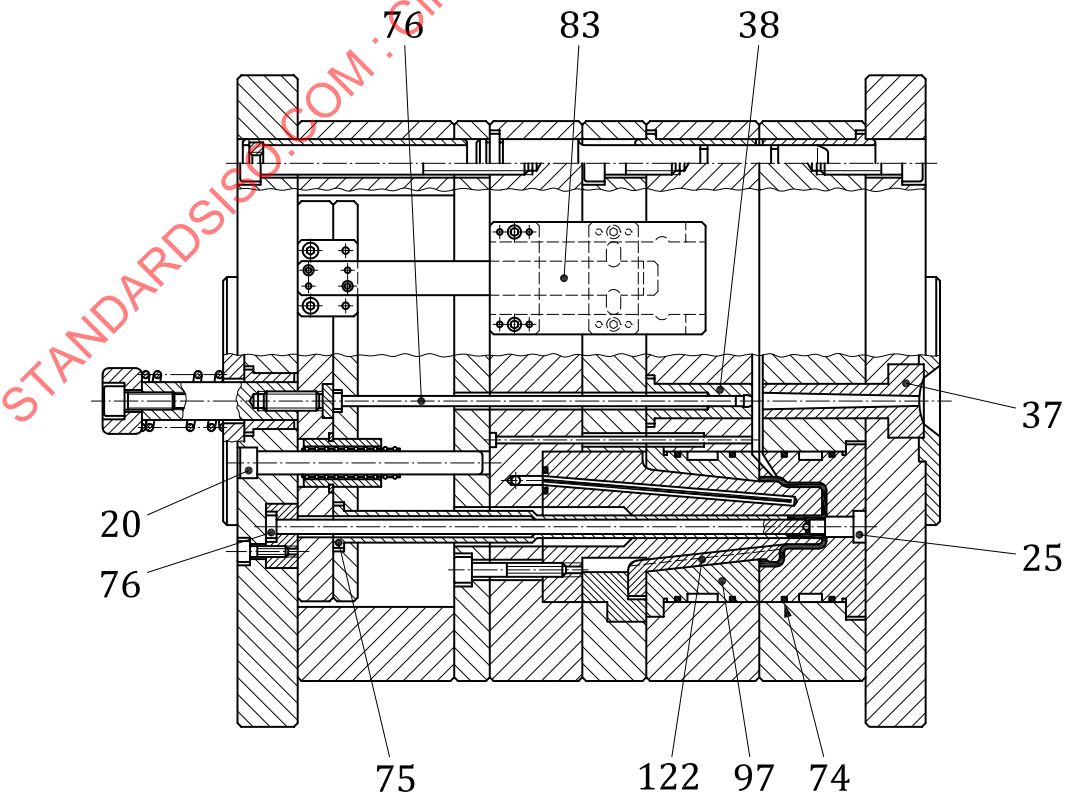


Figure 20

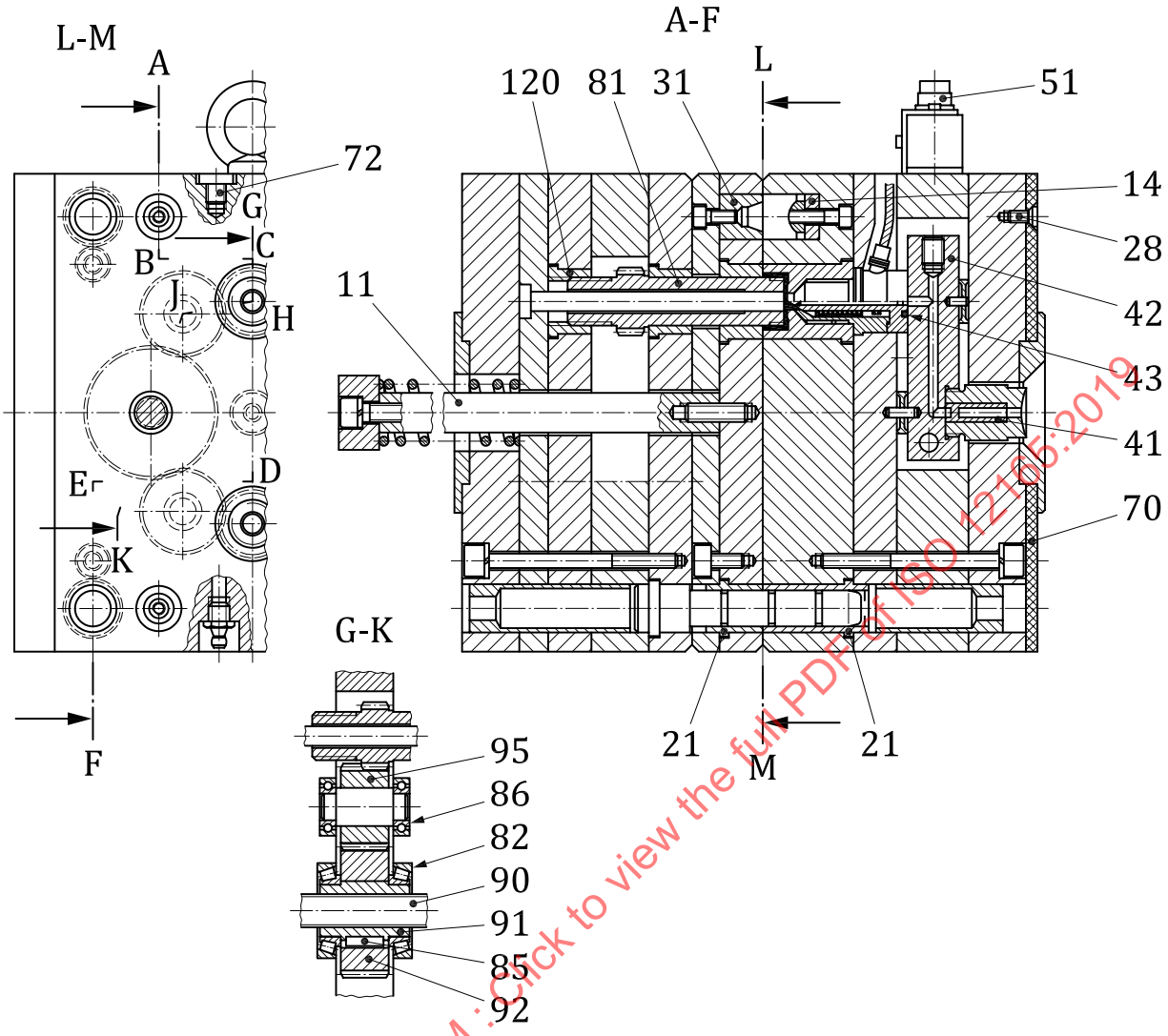


Figure 21