CUSCINETTI A RULLI CILINDRICI NEL SETTORE SIDERURGICO

CYLINDRICAL ROLLER BEARINGS FOR THE STEEL MILL INDUSTRY

ROULEMENTS A ROULEAUX CYLINDRIQUES SECTEUR SIDERURGIQUE

2004/09

CUSCINETTI A RULLI CILINDRICI NEL SETTORE SIDERURGICO

Con questa documentazione si integrano le informazioni già disponibili sui nostri cataloghi, trattando specificatamente le soluzioni **FARO** inerenti una vasta gamma di applicazioni nel campo dell'industria siderurgica.

Sono qui elencati gli esempi più significativi:

- **cuscinetti per linea d'asse**
- **rotelle per carrelli dei forni di agglomerazione del minerale**
- **rotelle e rulli di contrasto per convogliatori**
- **cuscinetti per laminatoi**
- **cuscinetti per colata continua**
- **controrulli per spianatrici e raddrizzatrici per lamiera**
- **cuscinetti per cordatrici tubolari.**

Le pagine seguenti mostrano alcuni esempi di ciò che **FARO** ha avuto modo di realizzare in questo settore.

FARO mette la propria esperienza al servizio del cliente e si dichiara disponibile alla progettazione e alla realizzazione di soluzioni ottimali personalizzate in collaborazione con l'utilizzatore.

CYLINDRICAL ROLLER BEARINGS FOR THE STEEL MILL INDUSTRY

The intent of this brochure is to add and complete the information already part of our catalogues, with the aim of specifically highlight **FARO** technical approach to the wide range of bearings application for the steel mill industry.

Listed below are the most significant examples to cover:

- **support bearings for long shafting**
- **rollers for sintering furnace installations**
- **coil conveyor wheels**
- **roll neck bearings**
- **bearings for continuous casting**
- **back up rollers for levelers / straightener**
- **bearings for tubular roping machines**

The following examples are to show what **FARO** has actually engineered and produced for those specific applications.

FARO is always available to both oem and end users to proactively custom make optimized bearing solutions.

ROULEMENTS A ROULEAUX CYLINDRIQUES SECTEUR SIDERURGIQUE

Le but de cette brochure est de compléter les informations figurant déjà dans nos catalogues, en mettant l'accent sur l'approche technique de **FARO** concernant la vaste gamme d'applications des roulements dans le domaine de l'industrie sidérurgique.

Ci-dessous quelques exemples les plus significatifs :

- **roulements pour lignes d'axes**
- **roulements pour chariots de four pour agglomération de minéraux**
- **roulements et rouleaux de convoyeurs**
- **roulements de laminoirs**
- **roulements pour coulée continue**
- **galets pour planeuses et redresseuses à tôles**
- **roulements pour machines à cintrer les tubes.**

Les pages suivantes montrent quelques exemples de ce que **FARO** peut réaliser dans ce domaine.

FARO met sa propre expérience au service du client et se tient à sa disposition pour l'étude et la réalisation de solutions optimales personnalisées en collaboration avec l'utilisateur.

CUSCINETTI A RULLI CILINDRICI PER LINEA D'ASSE

Alcuni esempi di dimensioni dei cuscinetti FARO per linea d'asse sono indicati nell'allegata tabella.
I cuscinetti elencati sono perfettamente intercambiabili con gli analoghi tipi di produzione straniera essendo garantita l'identità delle dimensioni di ingombro, delle dimensioni delle fresature di fissaggio, del valore del gioco radiale e di ogni altro dettaglio costruttivo.
Le gabbie di guida dei rulli sono di tipo massiccio, realizzate in bronzo, interamente lavorate con macchina utensile, in uno o in due pezzi, chiodate, a seconda delle esigenze.

Le tolleranze di esecuzione del cuscinetto sono in conformità alle norme AFBMA.

I valori delle capacità di carico sono calcolati secondo le norme internazionali **ISO 281/I** e **ISO 76.**

Per soddisfare particolari esigenze di montaggio i cuscinetti possono essere forniti sia con fori e canali di lubrificazione, sia con dimensioni delle fresature di fissaggio diverse da quelle indicate.

Cuscinetti speciali con dimensioni diverse da quelle indicate possono essere forniti a richiesta.

SUPPORT CYLINDRICAL ROLLER BEARINGS FOR LONG SHAFTING

The bearing data table is here enclosed.
The listed types are perfectly interchangeable with those offered by other bearing companies, matching overall boundary dimension and equivalent internal construction.
Roller cages are made of brass material, machined, one solid or two pcs, riveted, according to the specific need/application.

The manufacturing tolerances are in accordance to AFBMA standards.

Static and dynamic load carrying capacity values have been calculated according to standard **ISO 281/I** and **ISO 76**.

In order to facilitate mounting practices, the bearing can be equipped with lubrification holes and channel, or with dimensionally modified key slots.

Bearings with specially dimensions can be furnished upon request.

FARO S.p.A.
INDUSTRIALE

ROULEMENTS A ROULEAUX CYLINDRIQUES POUR LIGNES D'AXES

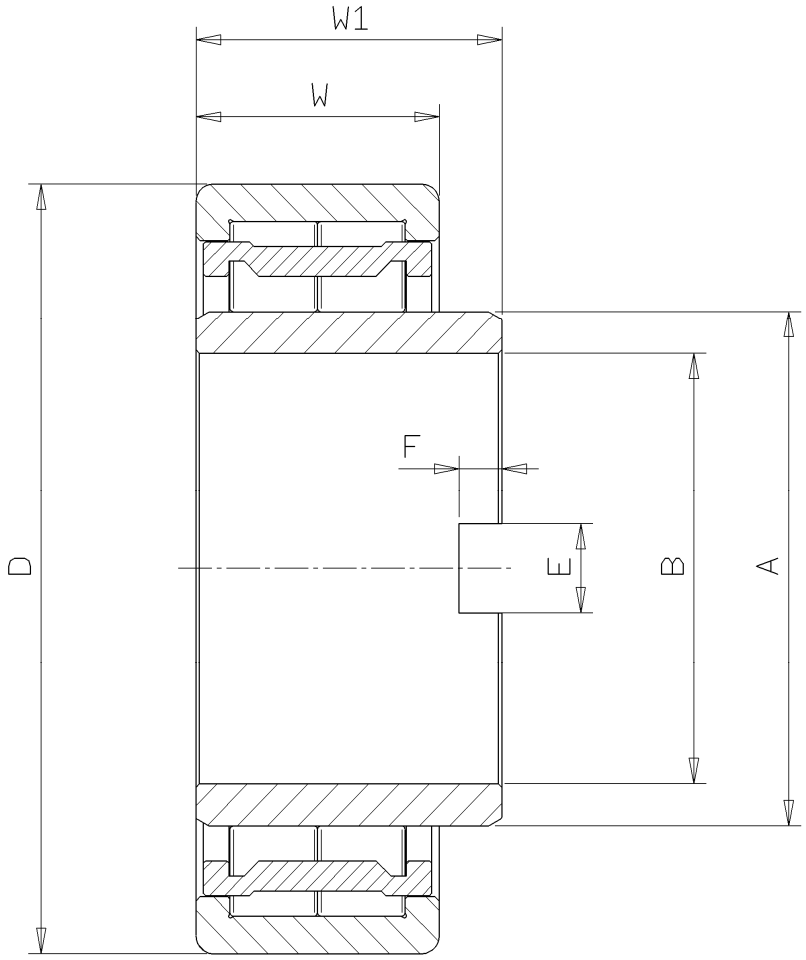
Quelques exemples de dimensions des roulements FARO pour ligne d'axe sont indiqués dans le tableau ci-joint.
Les roulements énumérés sont parfaitement interchangeables avec les modèles analogues proposés par la concurrence tout en garantissant les mêmes dimensions d'encombrement, les mêmes dimensions de fraisage, les mêmes valeurs de jeu radial ainsi que les autres détails d'usinage.

Les cages de guidage des rouleauxs sont réalisées en bronze massif, entièrement lavées à la machine, dans une ou deux caisses, clouées, selon les exigences.

Les tolérances d'exécution du roulement sont conformes aux normes AFBMA. Les valeurs des capacités de charge sont calculées selon les normes internationales **ISO 281/I** e **ISO 76**.

Pour répondre aux normes particulières de montage, les roulements peuvent être fournis soit avec de la graisse, soit avec un dispositif de graissage venant de l'extérieur.

Les roulements spéciaux de dimensions différentes de celles indiquées peuvent être fournis à la demande.



Rif. FARO	Altri Rif.	B mm	D mm	W mm	W1 mm	A mm	C N	E mm	F mm
2.0378	5218-17	88,92	160	52,38	63,50	107,00	245,200	22,73	8,86
2.0379	5219-16	95,27	170	55,56	69,85	113,33	282,000	25,90	9,65
2.0380	5220-16	101,62	180	60,32	76,20	120,80	293,300	25,90	9,65
2.0381	5222-18	114,32	200	69,85	82,55	132,74	414,200	29,08	9,65
2.0382	5224-16	120,67	215	76,20	88,90	144,90	494,300	29,08	9,65
2.0383	5226-17	130,20	230	79,37	92,07	154,74	536,000	25,90	9,65
2.0384	5226-24	130,00	230	79,37	117,47	154,74	536,000	25,90	9,65
2.0385	5226-29	125,41	230	79,37	190,50	154,74	536,000	25,90	9,65
2.0386	5228-14	138,11	250	82,55	130,17	168,20	633,400	35,43	9,95
2.0387	5228-16	139,70	250	82,55	95,25	168,40	633,400	35,43	12,83
2.0388	5230-16	150,83	270	88,90	104,77	181,20	750,000	38,73	12,83
2.0389	5230-22	150,83	270	88,90	219,07	161,20	750,000	38,73	12,83
2.0390	5232-16	152,42	290	98,42	114,30	193,30	844,500	39,67	12,70
2.0391	5236-17	177,82	320	107,95	127,00	215,75	994,700	45,08	11,38
2.0392	5244-20	219,10	400	133,35	158,75	265,20	1523,000	38,60	11,38

FARO S.p.A.
INDUSTRIALE

ROTELLE PER CARRELLI DEI FORNI DI AGGLOMERAZIONE DEL MINERALE

I forni di agglomerazione del minerale sono alimentati da una catena continua di carrelli.
I carrelli scorrono su rotaie e sono guidati da rotelle con un bordo laterale.
Il movimento è trasmesso ai carrelli da due ruote dentate che poste all'estremità del convogliatore ingranano con i rulli di spinta che sono i più soggetti alla fatica.

Le rotelle possono essere prodotte in dimensioni diverse in accordo alle specifiche esigenze di applicazione.

I disegni seguenti mostrano alcuni esempi di rulli di spinta e rotelle con bordo laterale di guida, impiegati in un forno di agglomerazione prodotto dalla LURGI Gmbh.
Cuscinetti speciali per forma e dimensioni possono essere forniti a richiesta.

FARO S.p.A.
INDUSTRIALE

ROLLERS FOR SINTERING FURNACE INSTALLATIONS

The sintering furnace is fed by a continuous line of carts that transport the minerals. The carts run on tracks guided by one flange roller wheel, with the motion transmitted via tooth wheel which, positioned at the end of the line, connects with the pushing wheel, thus becoming the most fatigue prone.

Roller wheels with special dimensions can be furnished upon request.

The enclosed prints show roller wheels with one flange, manufactured for a synthetic line made by Lurgi Gmbh.

ROULEMENTS POUR CHARIOTS DE FOURS POUR AGGLOMERATION DE MINERAUX

Les fours pour agglomération de minéraux sont alimentés par des chaînes de chariots qui roulent sur rails à bords latéraux.
Le mouvement est transmis aux chariots par deux roues dentées qui entrainent les rouleaux.

Les rouleaux sont réalisés sur demande pour s'adapter aux différentes éxigences spécifiques du client.

Les dessins suivants montrent quelques exemples de rouleaux à poussée latérale avec bords de guidage utilisés dans un four pour agglomération produit par LURGI Gmbh.
Des rouleaux spéciaux peuvent être réalisés sur demande.

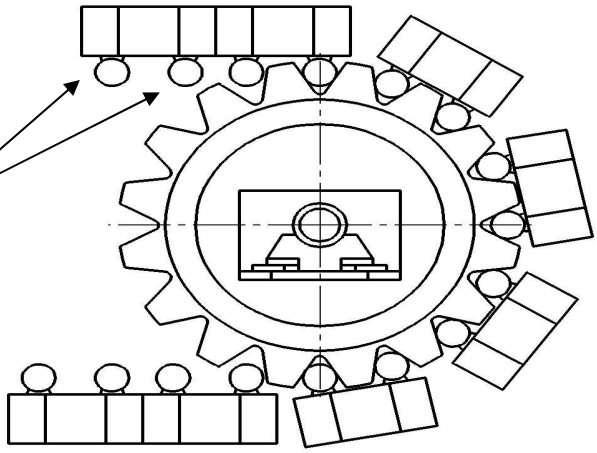
ACCIAIERIA
STELL MILL
ACIERIE

PREPARAZIONE MINERALE
MINERAL SETTING
PREPARATION MINERALE

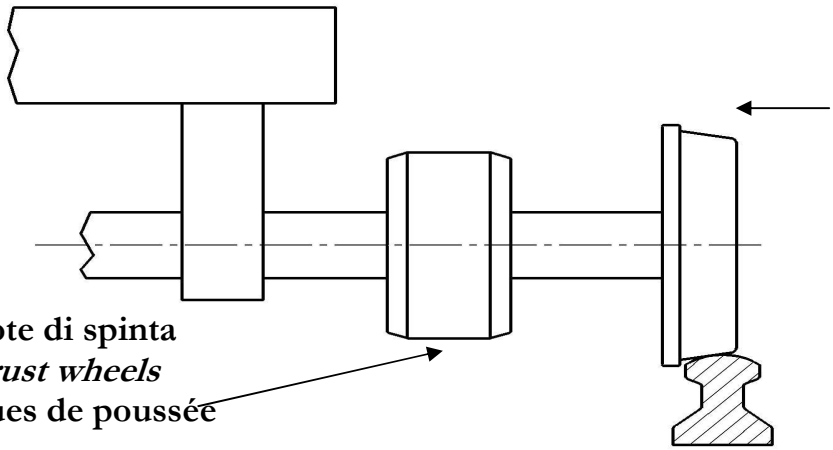
Impianti di agglomerazione (tipo LURGI)
Convogliatore continuo a moto lento per forno

Sintering plant (type LURGI)
Continuous conveyor with slow motion for furnace

Installation d'agglomeration (type LURGI). Convoyeur en continu à mouvement lent pour four



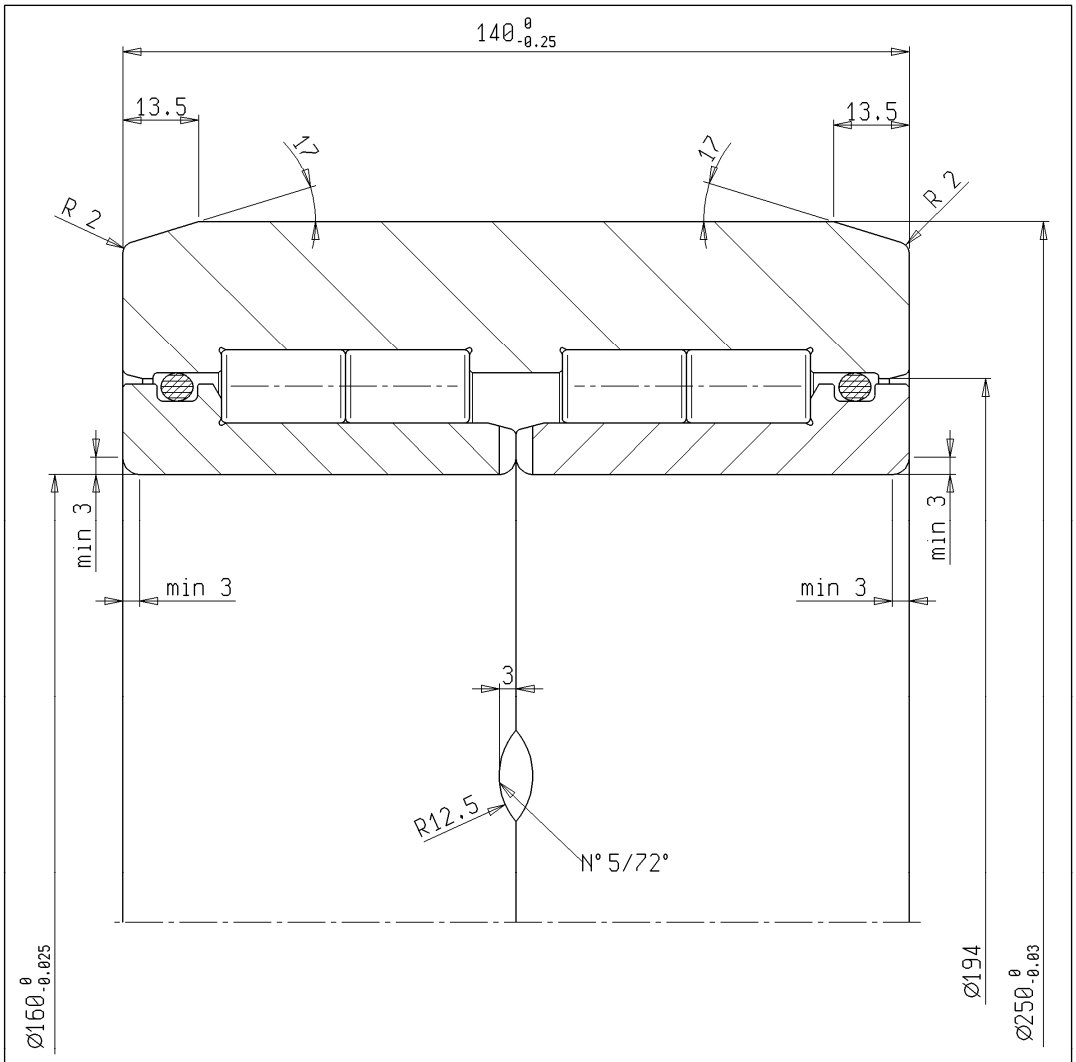
Ruote di spinta
Thrust wheels
Roues de poussée



Ruote di supporto sono folli
Support wheels are idles
Roues de support elles sont folles

Ruote di spinta
Thrust wheels
Roues de poussée

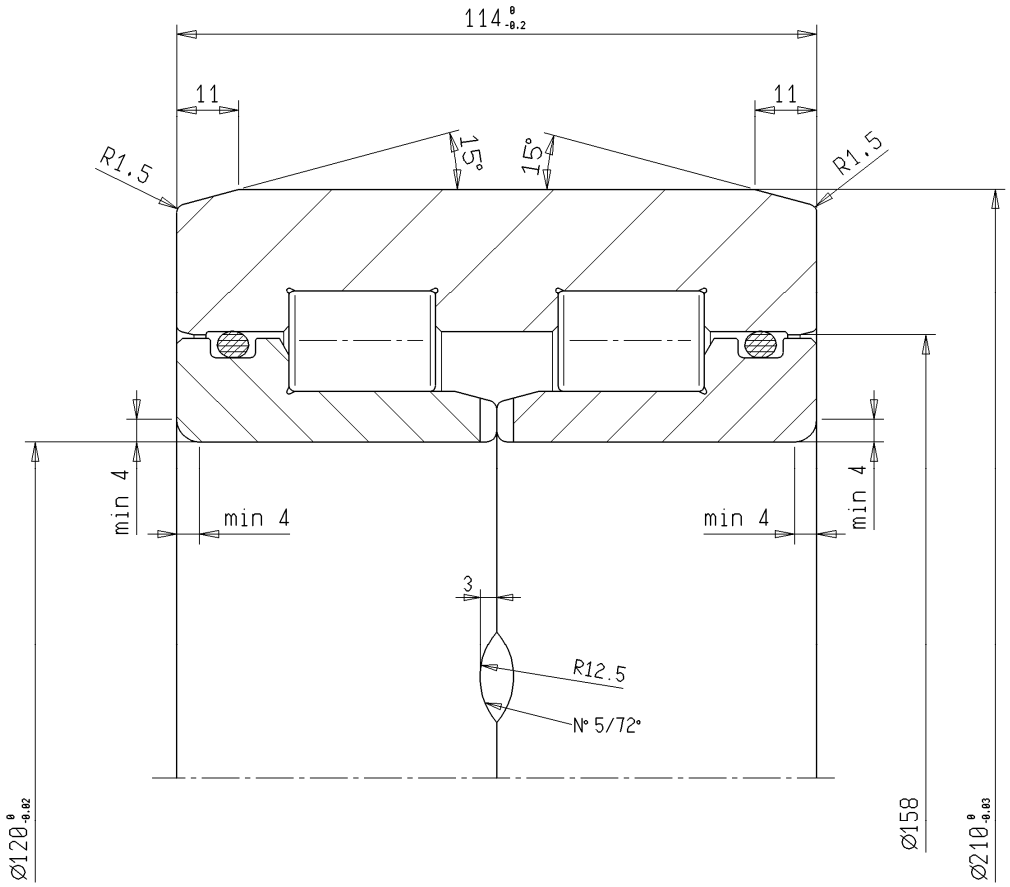
Lavorano solo quando sono afferrate dalla ruota dentata di comando.
They worked only when they are grasped by the control gear.
Elles travaillent seulement quand elles sont saisies par la roue dentée de commande



FRzuII= 455.000 N
FRozuII= 645.000 N

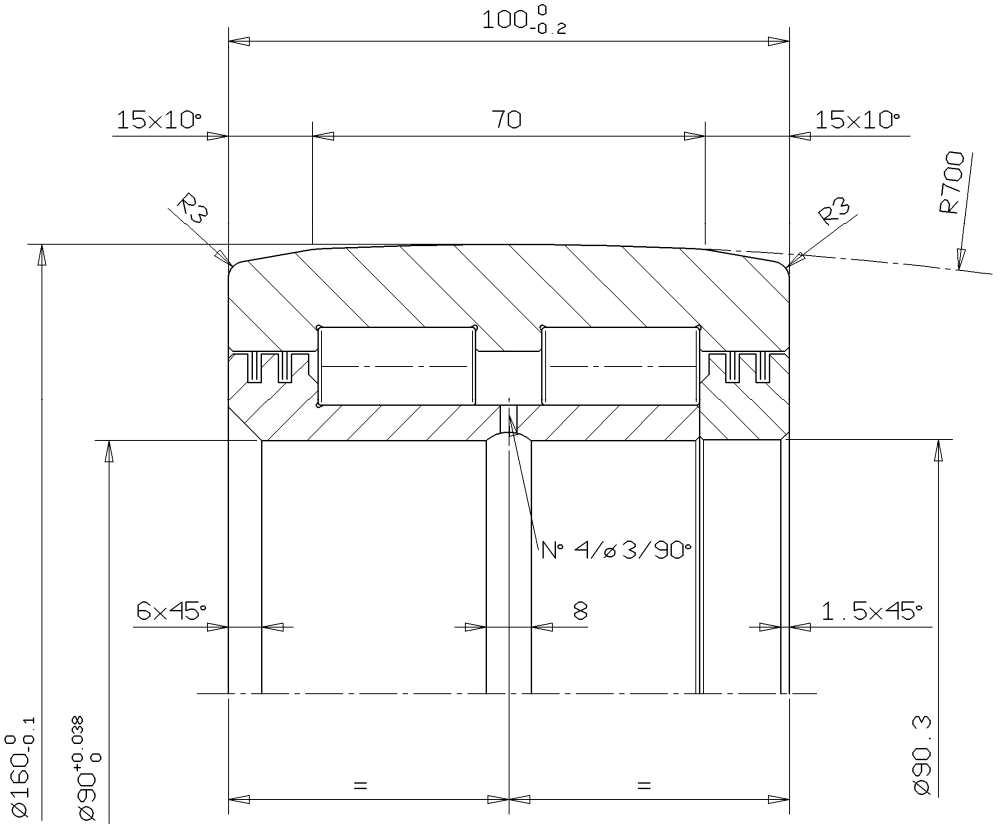
DATI TECNICI	G.RAD. 0.070/0.120	G.ASS.	CLASSE DI PRECISIONE PO	
	FATTORI DI CARICO			V.max
	CUSCINETTO sec.ISO		RULLO	① OLIO
	DIN. ISO 281	STAT. ISO 76	DINAMICO Cw / STATICO Cow	② GRASSO
RADIALE	1.030.000 N	2.080.000 N	650.000 N / 1.200.000 N	① ____ g/m
ASSIALE	____ N	____ N	____ N / ____ N	② ____ g/m

	1999	DATA	FIRMA	FORMATO	RIF. BNTB326247/HB1
FARO S.p.A INDUSTRIALE	DIS.	15/07	SENSIBILE	A4	DISEGNO N° 2.2436
	VISTO			SCALA	DENOMINAZIONE ROTELLA
	CONTR.			1:1	



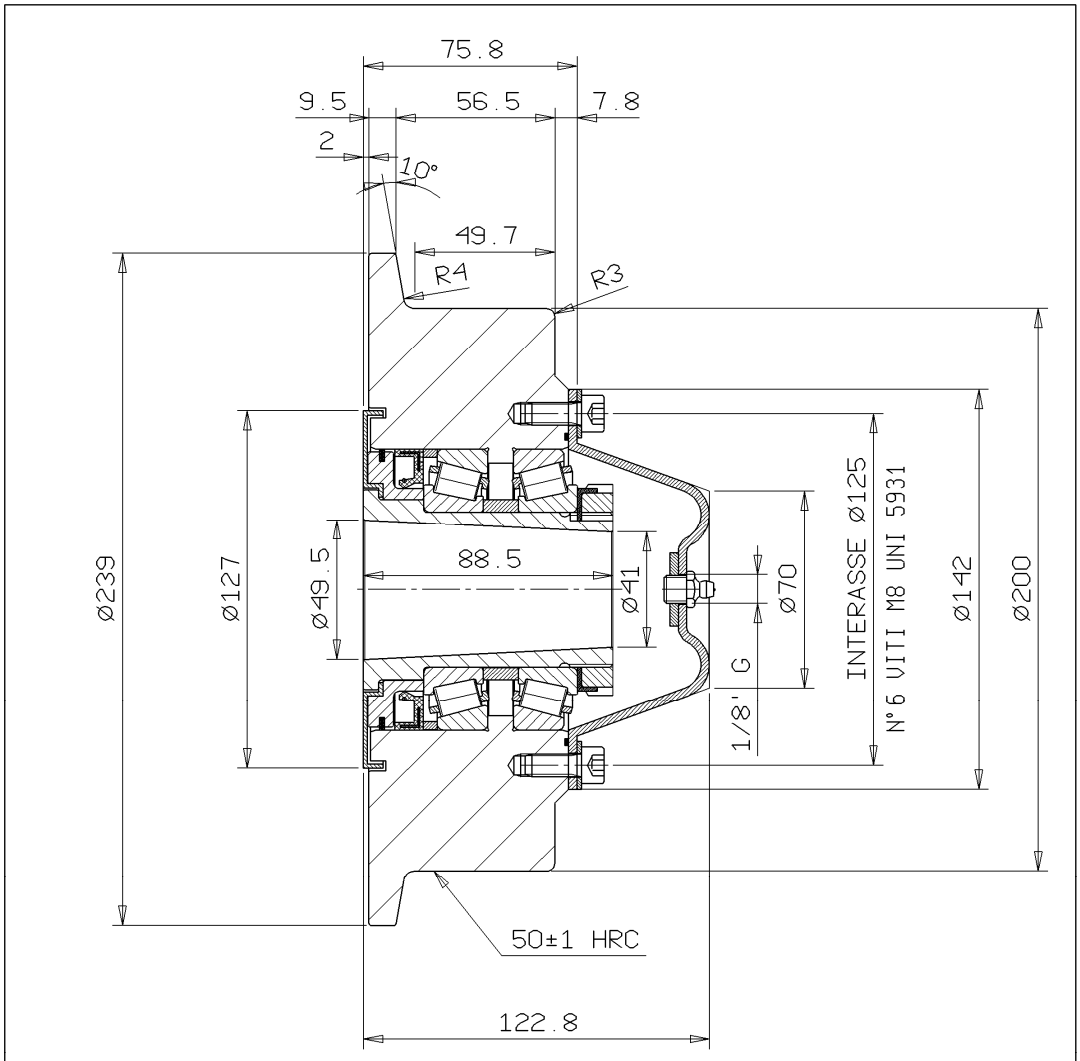
DATI TECNICI	G.RAD. 0.050/0.090	G.ASS.	CLASSE DI PRECISIONE PO	
	FATTORI DI CARICO			V.max
	CUSCINETTO sec.ISO		RULLO	① OLIO
	DIN. ISO 281	STAT. ISO 76	DINAMICO Cw / STATICO Cow	② GRASSO
RADIALE	550.000 N	915.000 N	369.000 N / 540.000 N	① ____ g/m
ASSIALE	____ N	____ N	____ N / ____ N	② ____ g/m

	1999	DATA	FIRMA	FORMATO	RIF. 319181/HB2 (spec. 343385)
FARO S.p.A INDUSTRIALE	DIS.	12/07	SENSIBILE	A4	DISEGNO N° 2.2435
	VISTO			SCALA	DENOMINAZIONE ROTELLA
	CONTR.			1:1	



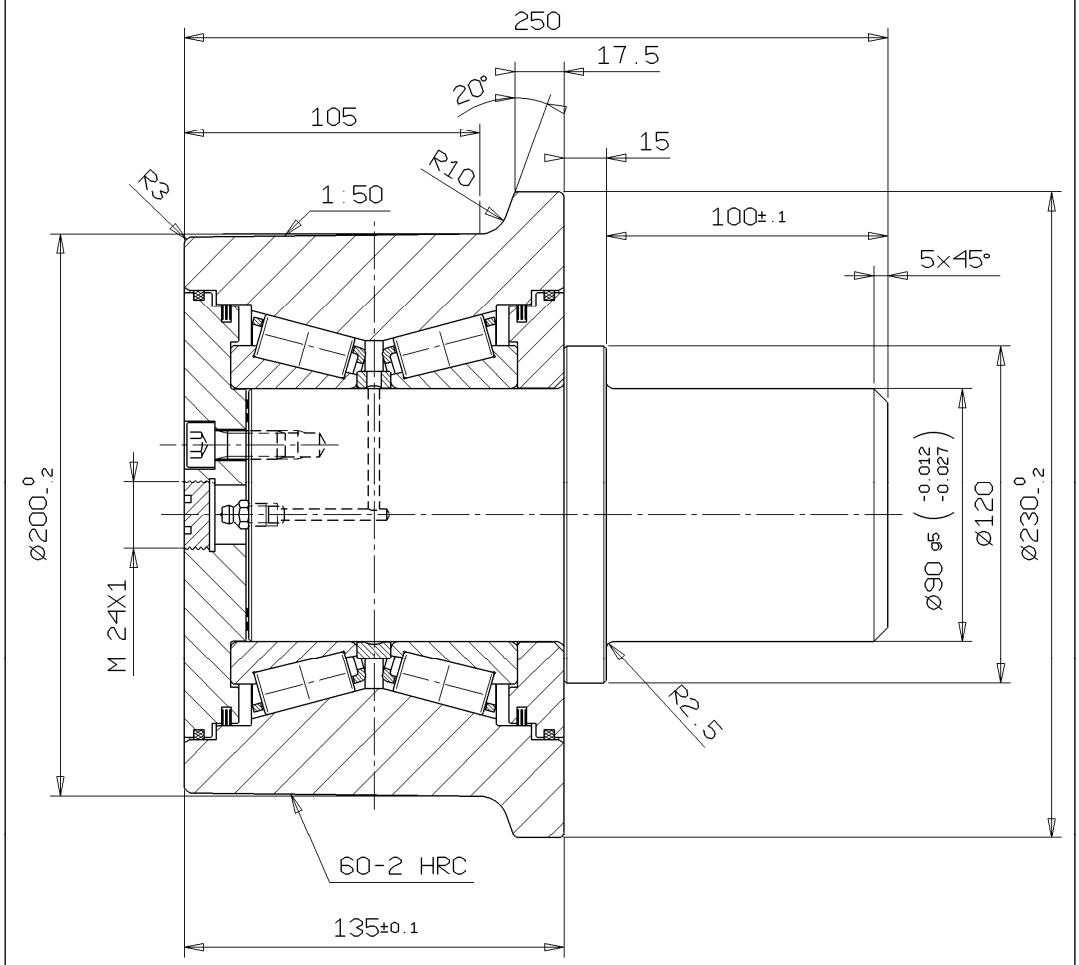
TECHNICAL DATA	RAD.CL. 0.050/0.085	AX.CL.	PRECISION CLASS	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	412.000 N	775.400 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

FARO S.p.A INDUSTRIALE		DATE	SIGNAT.	SIZE	REF.
	1995				
	DRWG.	02/02	EVELI	A4	DRAWING No 2.0991 C
	SEE			SCALE	DENOMINATION WHEEL
	CHECK.			1:1	



TECHNICAL DATA	RAD.CL.	AX.CL.	PRECISION CLASS	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	100.000 N	191.000 N	90.000 N / 185.000 N	① ____ g/m
AXIAL	____ N	____ N	____ N / ____ N	② ____ g/m

FARO S.p.A INDUSTRIALE	2000	DATE	SIGNAT.	SIZE	REF.
	DRWG.	19/05	SENSIBILE	A4	DRAWING No 2.0221
	SEE			SCALE	DENOMINATION WHEEL WITH CONICAL BUSH
	CHECK.			1:2	



FRZULL = 167.000 N FROZULL = 262.000 N

TECHNICAL DATA	RAD.CL.	AX.CL. 0.030/0.050	PRECISION CLASS P0	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	N	N	322.500 N / 567.000 N	① g/m
AXIAL	N	N	N / N	② g/m

FARO S.p.A INDUSTRIALE	1998	DATE	SIGNAT.	SIZE	REF. 77446
	DRWG.	17/04	SENSIBILE	A4	DRAWING No 2.4002
	SEE			SCALE	DENOMINATION WHEEL
	CHECK.			1:2	

ROTELLE E RULLI DI CONTRASTO PER CONVOGLIATORI

La principale caratteristica di questa serie di cuscinetti è l'elevato spessore dell'anello esterno, adatto per sopportare le alte pressioni specifiche che derivano dall'impiego di questi cuscinetti come rulli di pressione, seguitori di camme, rotelle di convogliatori etc.

Altre caratteristiche di questi cuscinetti sono :

- Anello esterno liscio o con bordo di guida che ha solitamente una bombatura sull'esterno per migliorare le condizioni di funzionamento in presenza di carichi gravosi ed eliminare concentrazioni di carico sui bordi dell'anello.
- Anello interno con fori e canali di adduzione del lubrificante.
- Ralle rettificate che insieme ai lamierini di tenuta in acciaio montati forzati su uno degli anelli formano un sistema di tenuta a labirinto.
  Una delle ralle laterali può essere di tipo chiuso per permettere il montaggio dei cuscinetti in testa d'albero.
  In casi particolari la rotella può essere fornita con gabbia metallica.
- Tolleranze di esecuzione secondo la classe normale (**DIN 620**).
- Le capacità di carico vengono indicate secondo le **ISO 281** e **ISO 76** come cuscinetto, aggiungendo i valori **Cw** e **Cow** da utilizzare nell'impiego come rotella.

I disegni seguenti mostrano alcuni esempi di rotelle e rulli realizzati da **FARO**.

Cuscinetti speciali per forma e dimensioni possono essere forniti a richiesta.

COIL CONVEYOR WHEELS

The most important characteristic of this bearing line is the very pronounced outer ring thickness, which is required to withstand the very high radial load pressure they are subjected to when used as track rollers, conveyor wheels, cam followers etc…

Other bearing features are:

- No flange or one flange outer rings with crowning profile to avoid or minimize edge loading.
- Inner ring with lubrification holes and channel.
- Outboard washers are grinded which, in addition to metallic lamellar rings press fit into one ring, create a very effective labyrinth sealing system. One of the washer can be of a close type so to allow the bearing mounting at the head shaft. When required, conveyor wheel equipped with metallic cage can be furnished.
- Manufacturing tolerances are according to the class "normal" (**Din 620**).
- The indicated load carrying capacity values have been calculated according to standard **ISO 281/I** AND **ISO76** as a bearing, with adding the **Cw** and **Cow** values, when used as a wheel.

The enclosed examples have all been produced by **FARO**.

Conveyor wheel with special dimensions can be furnished upon request.

GALETS ET CONTRE-ROULEAUX DE CONTRASTE POUR CONVOYEUR

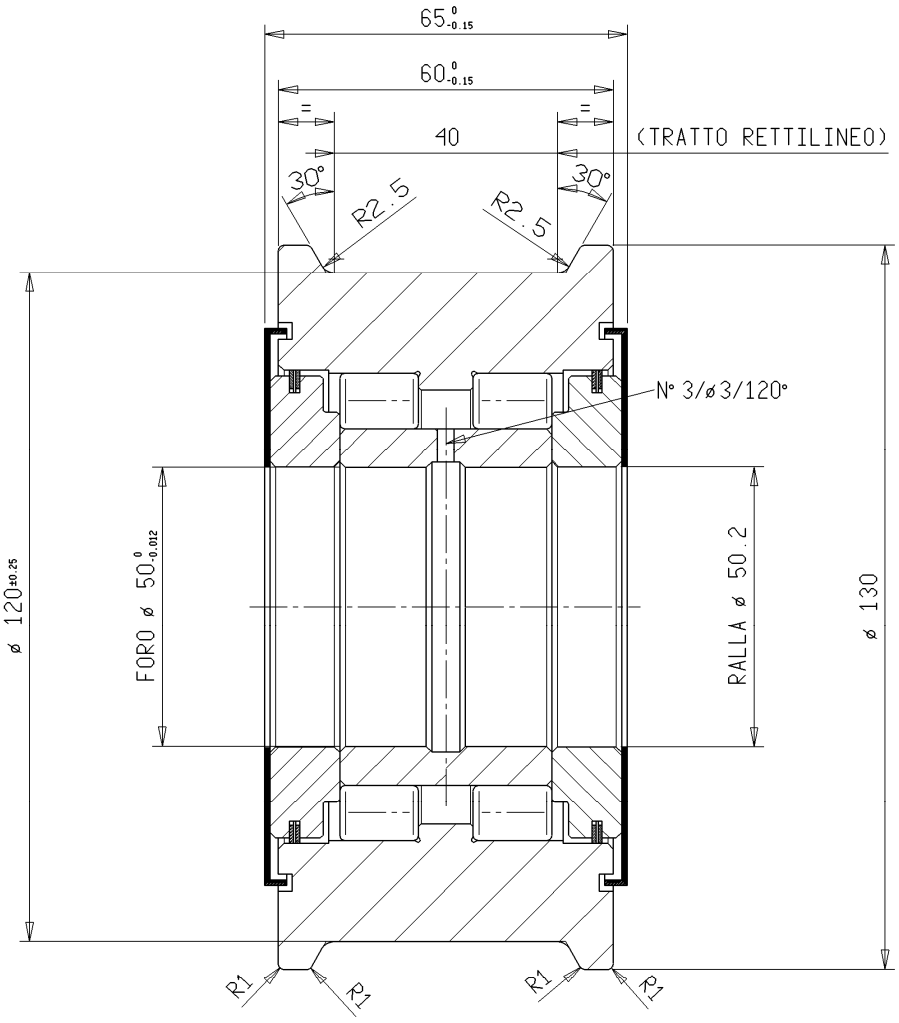
La principale caractéristique de cette série de coussinets est la forte épaisseur de la bague extérieure apte à supporter des pressions spécifiques élevées dues à des utilisations tel que le convoyage.

Les caractéristiques de ces galets sont les suivantes:

- Bague extérieure lisse ou avec bord de guidage qui habituellement est bombé sur l'extérieur pour améliorer les conditions de fonctionnement lors de fortes charges et les concentrations de charge.
- Butées en acier trempé rectifié.
- Une des butées latérales peut être du type fermé pour permettre le montage des galets par l'extrémité de l'arbre.
- Dans certain cas le galet peut être fourni avec une cage métallique.
- Les tollérances d'exécution selon la classification (**DIN 620**).
- Les capacités de charges sont indiquées selon les normes (**ISO 281** et **ISO 76**) en ajoutant les valeurs (**Cw** et **Cow**) à utiliser comme coussinet.

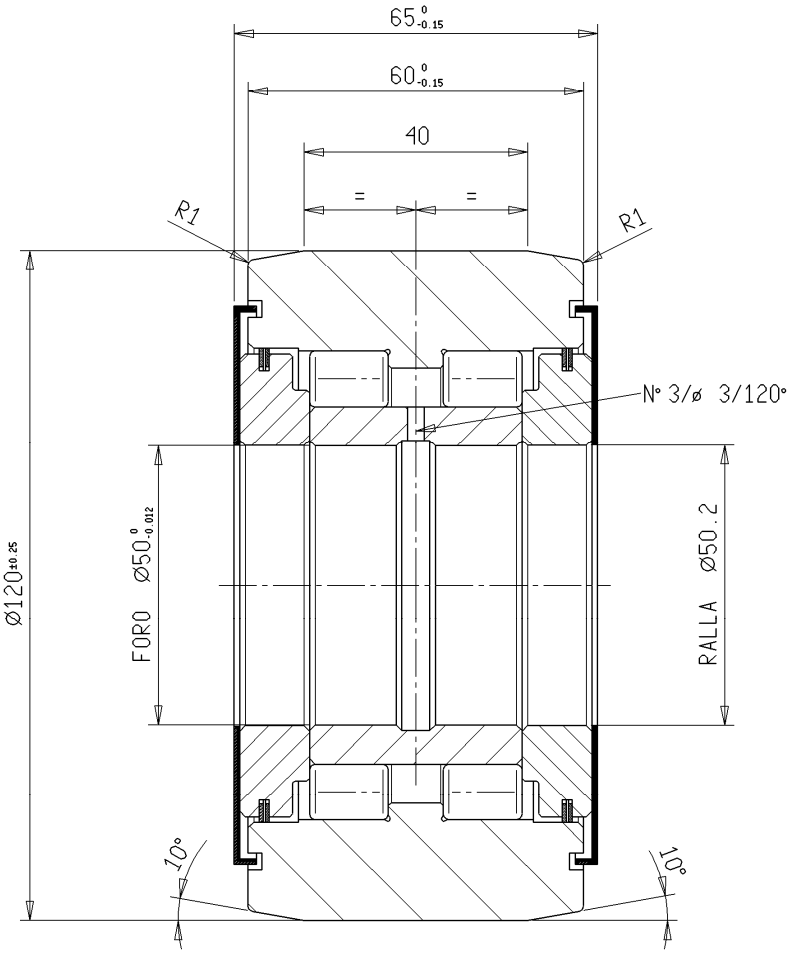
Les dessins suivant montrent quelques exemples de galets et rouleaux réalisés par **FARO**.

Des galets spéciaux peuvent être réalisés sur demande.



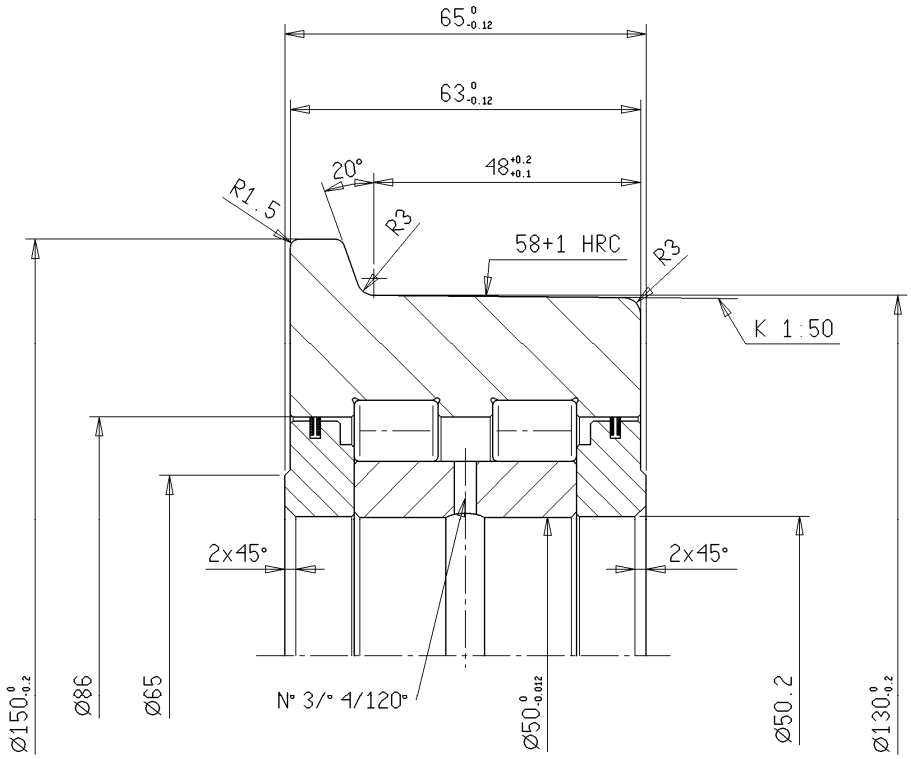
TECHNICAL DATA	RAD.CL. 0.030/0.060	AX.CL.	PRECISION CLASS P0	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	151.300 N	237.500 N	107.000 N / 157.000 N	① ____ g/m
AXIAL	____ N	____ N	____ N / ____ N	② ____ g/m

	1998	DATE	SIGNAT.	SIZE	REF.
FARO S.p.A INDUSTRIALE	DRWG.	10/07	SENSIBILE	A4	DRAWING No 2.2406
	SEE			SCALE	DENOMINATION WHEEL
	CHECK.			1:1	



TECHNICAL DATA	RAD.CL. 0.030/0.060	AX.CL.	PRECISION CLASS P0	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	151.300 N	237.500 N	107.000 N / 157.000 N	① ____ g/m
AXIAL	____ N	____ N	____ N / ____ N	② ____ g/m

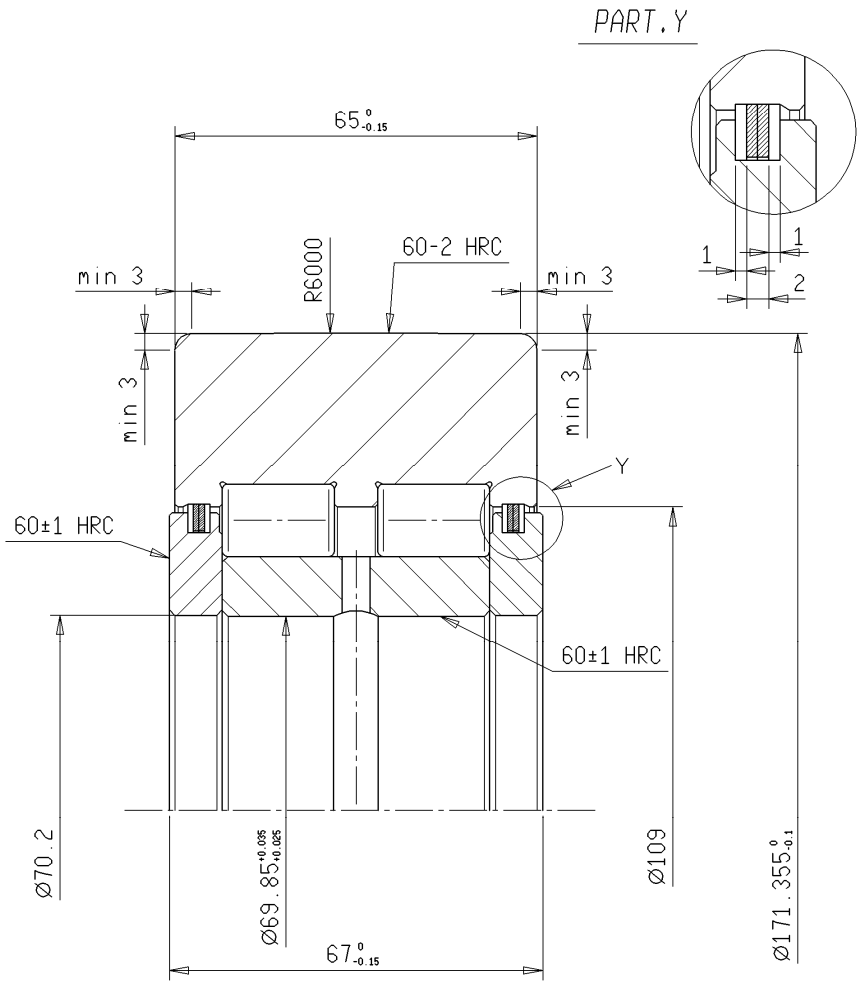
	1998	DATE	SIGNAT.	SIZE	REF.
FARO S.p.A INDUSTRIALE	DRWG.	13/07	SENSIBILE	A4	DRAWING No 2.2407
	SEE			SCALE	DENOMINATION WHEEL
	CHECK.			1:1	



FRzull= 45.000 N

TECHNICAL DATA	RAD.CL. 0.030/0.060	AX.CL.	PRECISION CLASS P0	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	187.000 N	270.000 N	138.000 N / 185.000 N	① g/m
AXIAL	N	N	N / N	② g/m

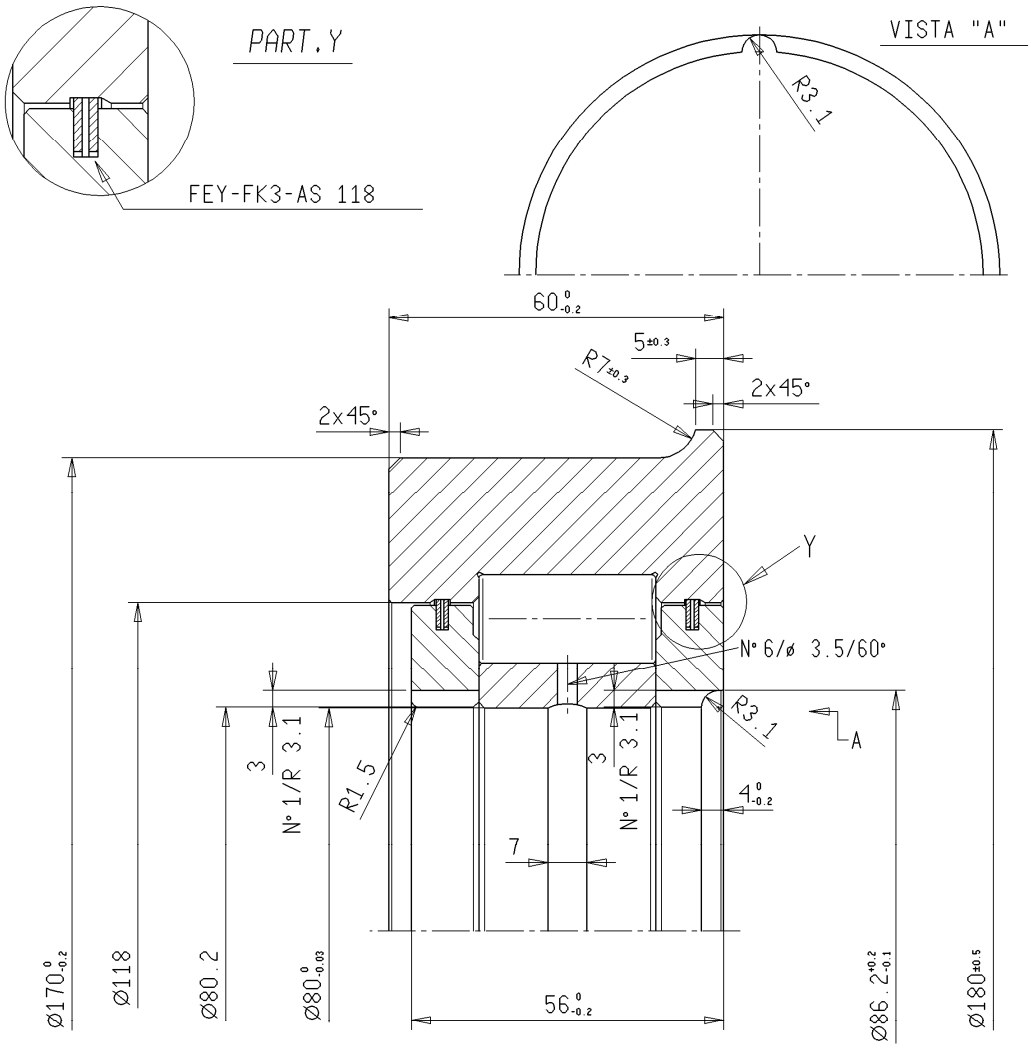
FARO S.p.A INDUSTRIALE	1999	DATE	SIGNAT.	SIZE	REF.
	DRWG.	14/01	SENSIBILE	A4	DRAWING No 2.2417
	SEE			SCALE	DENOMINATION WHEEL
	CHECK.			1:1	



Fr zull= 200.000 N Fro zull= 320.000 N

TECHNICAL DATA	RAD.CL. 0.050/0.085	AX.CL.	PRECISION CLASS	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	285.200 N	453.000 N	214.000 N / 330.00 N	① ____ g/m
AXIAL	____ N	____ N	____ N / ____ N	② ____ g/m

FARO S.p.A INDUSTRIALE	2000	DATE	SIGNAT.	SIZE	REF.
	DRWG.	28/07	SENSIBILE	A4	DRAWING No 2.2483
	SEE			SCALE	DENOMINATION CONVEYOR
	CHECK.			1:1	WHEEL

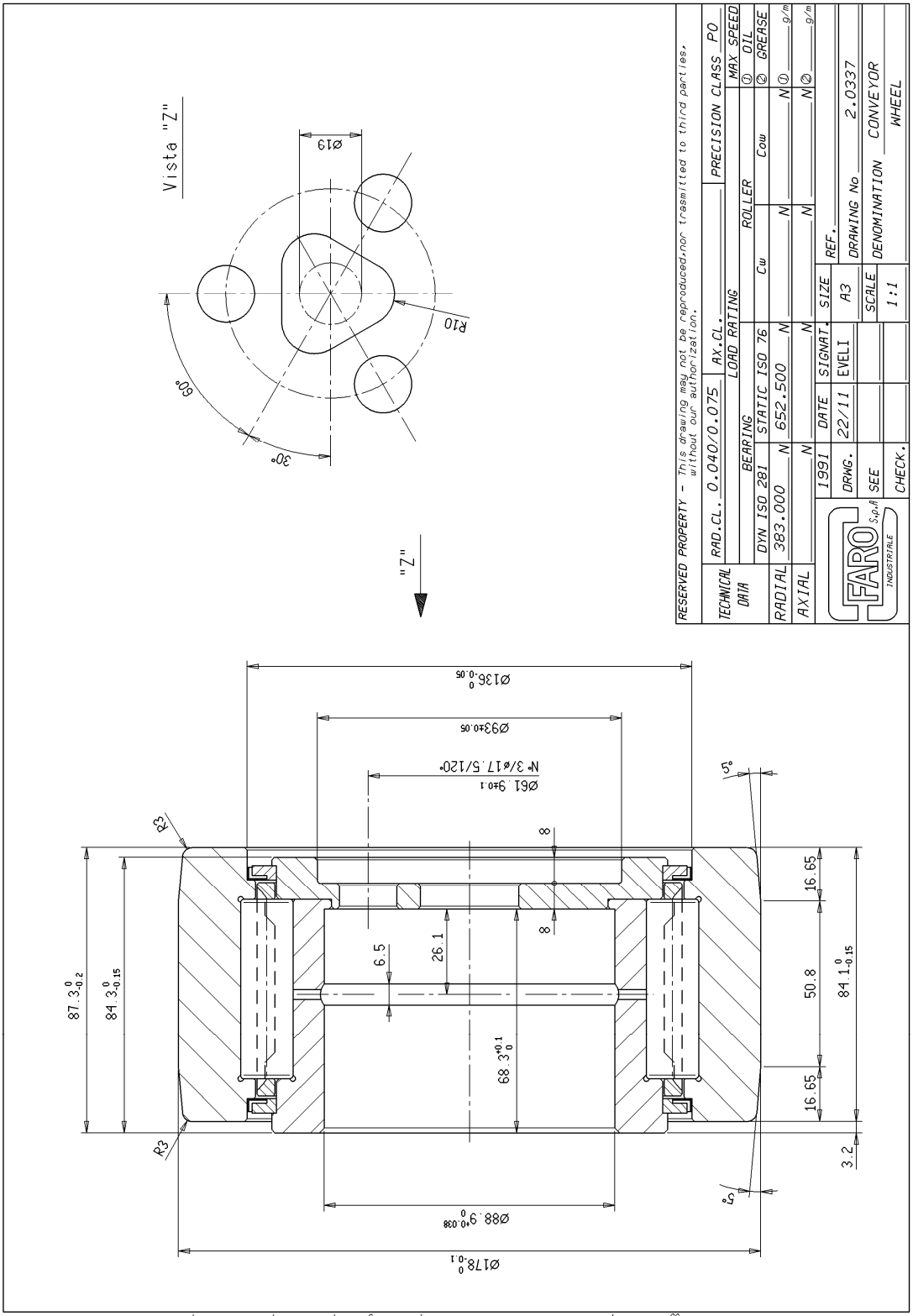


Fr zull= 160.000 N Fro zull = 210.000 N

TECHNICAL DATA	RAD.CL. 0.050/0.085	AX.CL.		PRECISION CLASS	
	LOAD RATING				MAX SPEED
	BEARING		ROLLER		① OIL
	DYN ISO 281	STATIC ISO 76	Cw	Cow	② GREASE
RADIAL	272.000 N	422.000 N	180.000 N	260.000 N	① ____ g/m
AXIAL	____ N	____ N	____ N	____ N	② ____ g/m

FARO S.p.A INDUSTRIALE

	2001	DATE	SIGNAT.	SIZE	REF. NUTR 80x170/180x60
	DRWG.	29/01	SENSIBILE	A4	DRAWING No 2.2503
	SEE			SCALE	DENOMINATION ROLLER
	CHECK.			1:1	



CUSCINETTI PER CORDATRICI TUBOLARI

I cuscinetti per cordatrici tubolari sono caratterizzati da una sezione sottile e da una costruzione interna atta a ottenere le massime velocità di rotazione.

Vengono costruiti con:

- Classe di precisione P5
- Gioco radiale C3 (in genere)

Altra importante caratteristica di questi cuscinetti è la possibilità di garantire un disallineamento di circa 10' dell'anello esterno rispetto all'interno senza compromettere le caratteristiche di funzionamento.

I disegni seguenti mostrano alcuni esempi di cuscinetti per cordatrici tubolari realizzati da **FARO.**

Cuscinetti speciali per forma e dimensioni possono essere forniti a richiesta.

FARO S.p.A.
INDUSTRIALE

BEARINGS FOR TUBULAR ROPING MACHINES

The main features of bearing for tubular roping machines is the very thin cross section and an internal construction capable to achieve very high working speed.

They are manufactured with:

- P5 precision class
- C3 radial internal clearance (usually)

The other important feature is the bearing capability to withstand up to 10' misalignment between outer and inner ring without compromising the overall working performances.

The enclosed examples have been produced by **FARO**.

Bearings with special dimension can be furnished upon request.

ROULEMENTS POUR CABLEUSE TUBULAIRE

Ce type de roulements est caractérisé par une section mince et une construction apte à garantir une vitesse de rotation élevée.

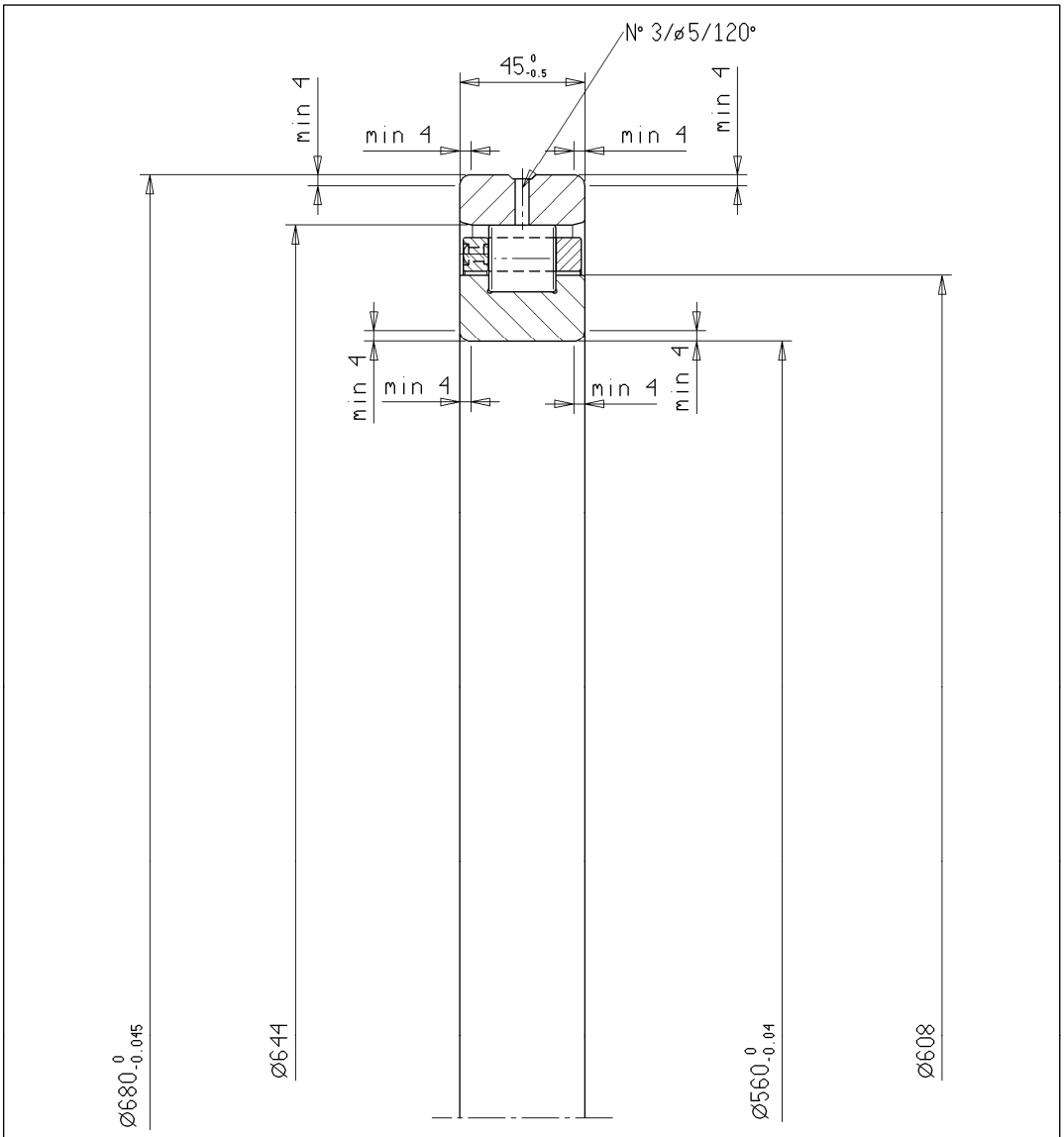
Ces roulements sont construits de la façon suivante:

- Classe de précision P5
- Jeu radial C3

Une autre caractéristique importante est la possibilité de garantir un désaxage d'environ 10' de la bague extérieure par rapport à la bague intérieure sans compromettre les caractéristiques de fonctionnement.

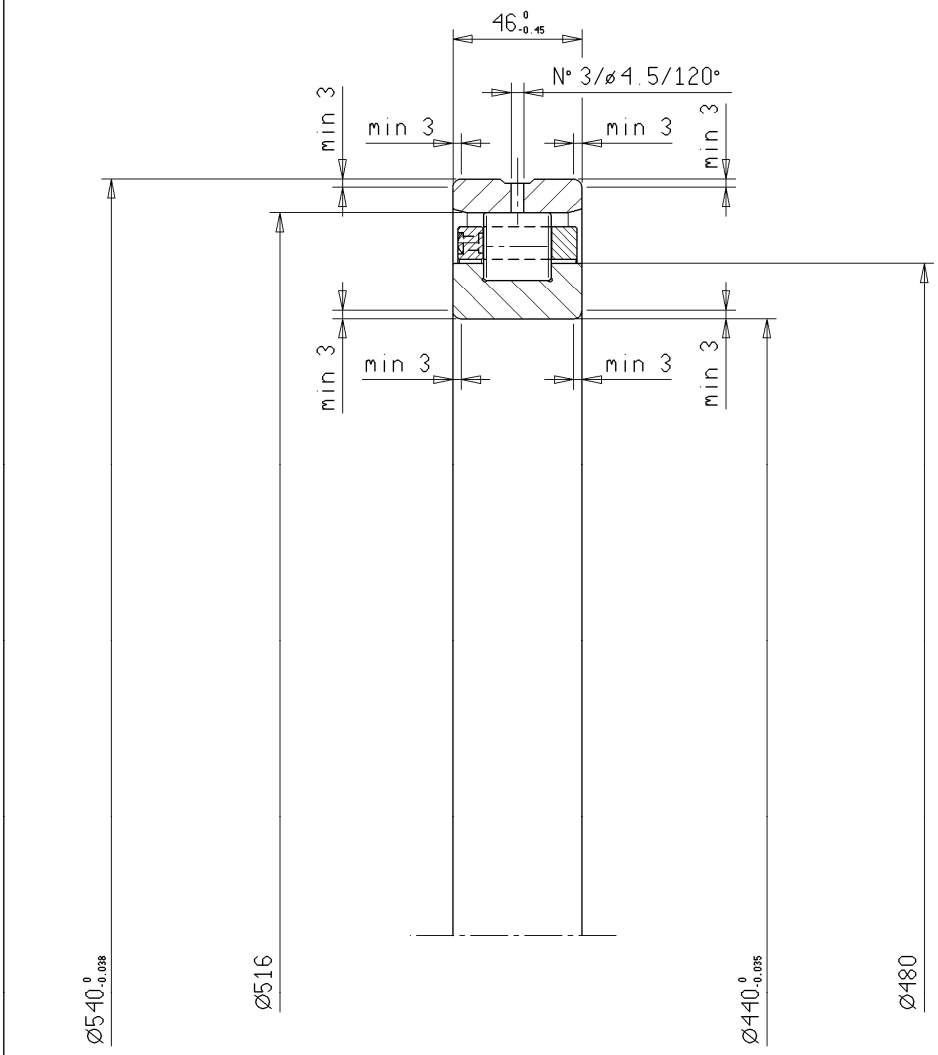
Les dessins suivants montrent quelques exemples de roulements réalisés par **FARO**.

Des roulements spéciaux peuvent être réalisés sur demande.



TECHNICAL DATA	RAD.CL. 0.390/0.460	AX.CL.		PRECISION CLASS P6/P5	
	LOAD RATING				MAX SPEED
	BEARING		ROLLER		① OIL
	DYN ISO 281	STATIC ISO 76	Cw	Cow	② GREASE
RADIAL	400.000 N	800.000 N	N	N	① g/m
AXIAL	N	N	N	N	② g/m

FARO S.p.A INDUSTRIALE	2000	DATE	SIGNAT.	SIZE	REF. FAG 540208
	DRWG.	02/09	SENSIBILE	A4	DRAWING No 2.2487
	SEE			SCALE	DENOMINATION CILINDRICAL
	CHECK.			1:2	ROLLER BEARING



TECHNICAL DATA	RAD.CL. 0.310/0.410	AX.CL.	PRECISION CLASS P6/P5

	LOAD RATING				MAX SPEED
	BEARING		ROLLER		① OIL
	DYN ISO 281	STATIC ISO 76	Cw	Cow	② GREASE
RADIAL	351.000 N	685.000 N	N	N	① g/m
AXIAL	N	N	N	N	② g/m

FARO S.p.A INDUSTRIALE	2000	DATE	SIGNAT.	SIZE	REF. FAG 527459
	DRWG.	10/07	SENSIBILE	A4	DRAWING No 2.2478
	SEE			SCALE	DENOMINATION CILINDRICAL
	CHECK.			1:2	ROLLER BEARING

CONTRORULLI PER SPIANATRICI E RADDRIZZATRICI PER LAMIERA

La tipologia dei controrulli per spianatrici e raddrizzatrici di lamiera si può così definire:

1- controrulli di forma NNTR o similare, senza perno;
2- controrulli a tavola cilindrica con perno.

Nella progettazione dei controrulli vengono esaminati i concetti di portata ammissibile dinamica e statica considerando i carichi massimi applicabili sul rullo (**Frzull** dinamico e statico) riferendosi alle usuali procedure di calcolo che tengono conto dei cedimenti elastici sotto carico.

Considerata la frequente necessità di avere precisioni dimensionali e geometriche di livello superiore, è possibile fornire controrulli in classe di precisione P6 e P5 ed a richiesta selezionare e certificare l'altezza di sezione "H" al fine di ottenere combinazioni di più cuscinetti sullo stesso asse.

Per quanto riguarda il gioco radiale, viene solitamente impiegata la classe di gioco normale secondo la **DIN 620**.

È possibile realizzare controrulli che prevedano l'impiego di una coppia di reggispinta a rulli o a sfere, con durezza del mantello esterno ridotta rispetto a quella del rullo di appoggio allo scopo di evitare rigature ed abrasioni (è consigliabile una differenza fra i due di almeno 2-3 punti HRC), e con profilo del mantello esterno cilindrico rastremato alle estremità oppure bombato.

Per la realizzazione di questo tipo di controrullo possono essere utilizzate gabbie a rullini, corone di rulli con gabbia o a pieno riempimento, con una grande varietà di soluzioni costruttive riguardanti la lubrificazione, la protezione e la cuscinettizzazione.

BACK UP ROLLERS FOR LEVELERS/ STRAIGHTENER

Back up rollers for leveler and straightener can be identified as:

1- Back up rollers of NNTR form (or similar) without pin;
2- Back up rollers with cylindrical outer profiling and with pin.

When calculating the dynamic and static load carrying capacities, the maximum permissible load carrying capacity of the roller (dynamic and static **Frzull**) must be taken into account, along with the limiting elastic stresses that any given back up roller can withstand, beyond which a permanent metallurgical deformation is introduced.

With often the need for higher than normal geometrical and dimensional tolerances, it is possible to furnish back up rollers in P6 and P5 precision classes and (if required) to furnish them in factory preselected "H" section height groups for ease of assembly on the same shaft.

The specified radial clearance is usually the "normal" class as identified by **DIN 620**.

It is possible to furnish back up rollers equipped with ball or roller based thrust bearings, with outside surface hardness value reduced compared to the intermediate or work roll so to avoid scratches and wear (we suggest 2 or 3 points HRC difference), and with outside cylindrical profile having releaved or crowned ends.

For this type of back up roller, needle cage or regular roller cages or full complement can be utilized, with a vast variety of different internal constructions that can be chosen from.

CONTRE-ROULEAUX POUR PLANEUSES ET REDRESSEUSES A TOLE

La typologie de contre-rouleaux pour redresseuses et planeuses peut être ainsi définie:

1- Contre rouleaux de forme NNTR ou similaire sans axe;
2- Contre rouleaux cylindriques avec axe.

En phase d'étude des contre rouleaux sont calculés les portées admissibles, les charges dynamiques et statiques en considérant les charges maximum appliquées sur les rouleaux (**Frzull** dynamique et statique) en se référant aux normes usuelles de calcul et en tenant compte des flexions sous charges.

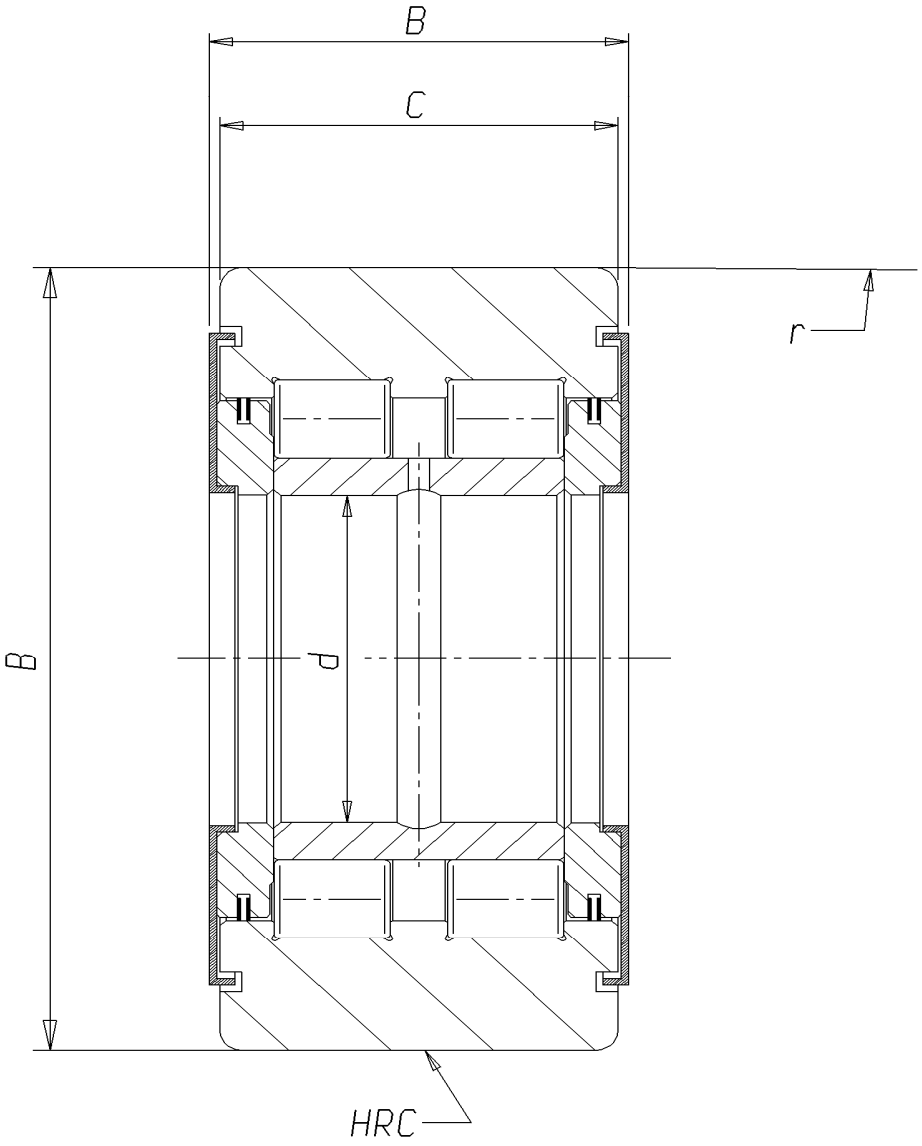
S'il est nécessaire d'avoir des précision dimensionnelles et géométriques d'un niveau supérieur nous pouvons fournir des contre rouleaux de précison P6 et P5 et sur demande sélectionner et rectifier la hauteur "H" afin d'obtenir des combinaisons de plusieurs roulements à monter sur le même axe.

Pour le jeu radial on utilise les jeux normaux selon la norme **DIN 620**.

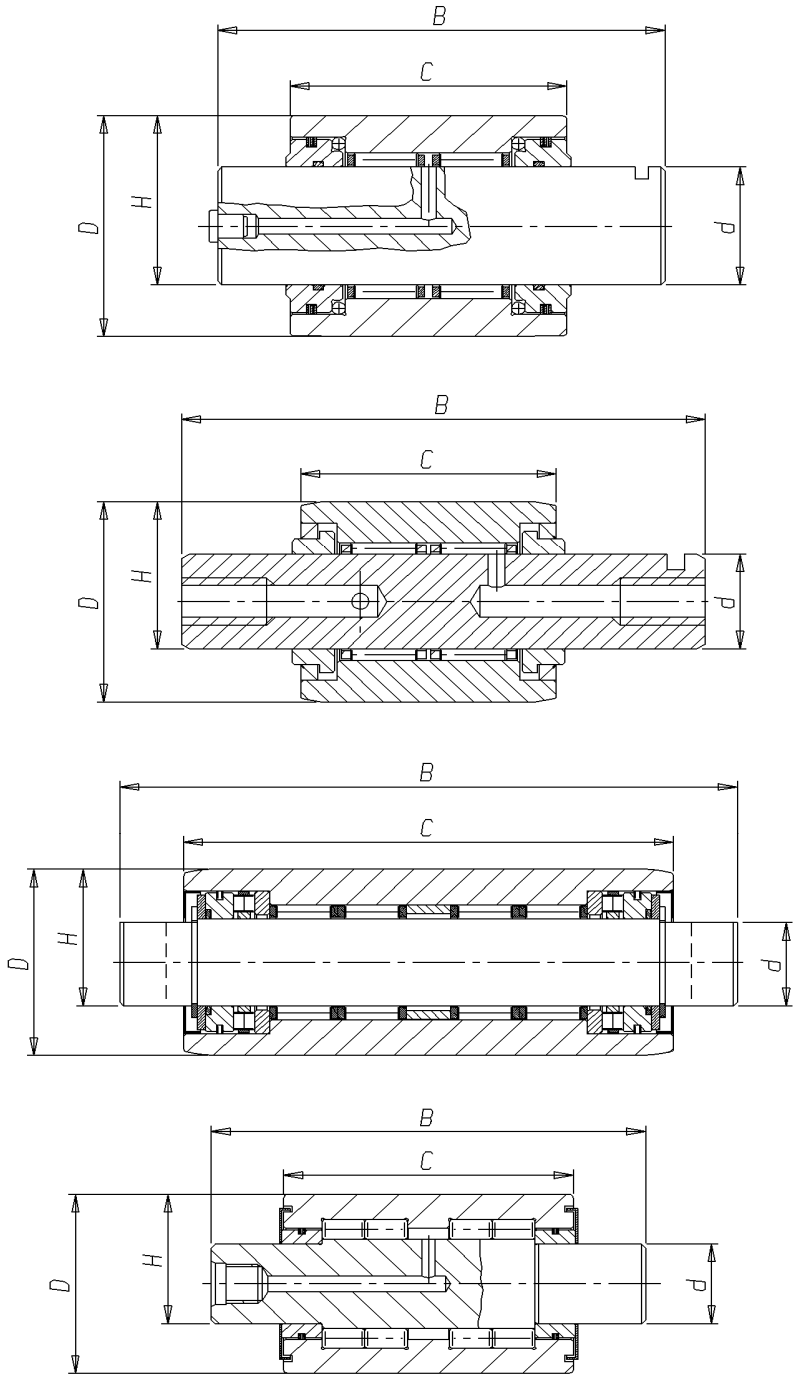
Sur demande il est possible de réaliser des contre rouleaux spéciaux avec des duretés inférieures à celles du manteau extérieur afin d'éviter de rayer le rouleau. (il est conseillé d'avoir une différence de 2 – 3 points HRC entre le rouleau et le contre rouleau).

Pour la réalisation de ce type de contre rouleau il existe une grande variété de solutions techniques concernant la lubrification, la protection, l'étanchéité et l'éventuelle présence de cage.

CONTRORULLI DI FORMA NNTR
BACK UP ROLLERS OF NNTR FORM
CONTRE-ROULEAUX EN FORME NNTR



CONTRORULLI A TAVOLA CILINDRICA CON PERNO
BACK UP ROLLERS WITH CYLINDRICAL OUTER PROFILING AND WITH PIN
CONTRE-ROULEAUX A TABLE CYLINDRIQUE AVEC AXE



CUSCINETTI A RULLI CILINDRICI PER COLATA CONTINUA

I cuscinetti FARO di questa serie sono stati progettati e realizzati per le vie a rulli di trasporto della bramma negli impianti a colata continua.

I cuscinetti FARO a rulli cilindrici per colata continua sono a una o più file di rulli a pieno riempimento, oppure con gabbia in bronzo o in acciaio.

Le caratteristiche principali di questi cuscinetti sono:

- Elevate capacità di carico.
- Anelli esterni ed interni stabilizzati per funzionamento ad elevate temperature (S3).
- Gioco radiale adeguato (C4 o C5).

Le capacità di carico sono calcolate secondo le norme **ISO 218/I** e **ISO 76**.

I disegni seguenti mostrano alcuni esempi di cuscinetti per colata continua realizzati da **FARO.**

Cuscinetti speciali per forma e dimensioni possono essere forniti a richiesta.

BEARINGS FOR CONTINUOUS CASTING

This line of bearings has been engineered by **FARO** for the transfer of slabs in a continuous casting mill.

FARO cylindrical roller bearings have one or more row of rollers, full complement or with brass or steel cage.

Main features are:

- Very high load carrying capacities.
- Inner and outer rings stabilized for high working temperatures (S3).
- Adequate radial internal clearance (C4 or C5).

Load carrying capacities have been calculated according to **ISO 218/I** and **ISO 76** norm.

The enclosed examples have all been produced by **FARO**.

Bearings with special dimensions and form can be furnished upon request.

ROULEMENTS A ROULEAUX CYLINDRIQUE POUR COULEE CONTINUE

Les roulements FARO de cette série ont été réalisés pour les voies à rouleaux pour la translation de brames dans les lignes de coulée continue.

Les roulements FARO à rouleaux cylindriques pour coulée continue sont réalisés avec une ou plusieurs files de rouleaux réalisés dans la masse; avec ou sans cage en bronze ou en acier.

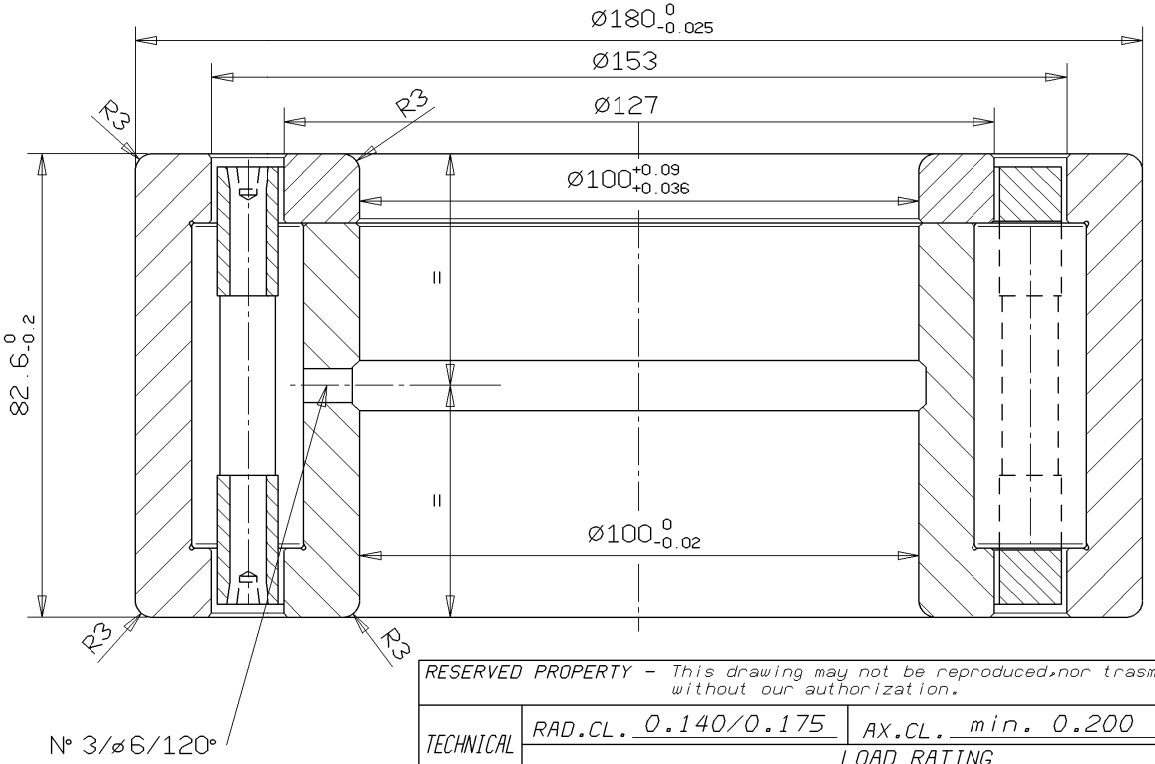
Les caractéristiques principales sont les suivantes:

- Capacité de charges élevées.
- Anneaux extérieurs et intérieurs stabilisés pour supporter les températures élevées.
- Jeux radial adapté (C4 ou C5).

Les capacités de charges sont calculées selon les normes **ISO 218/I** et **ISO 76.**

Les dessin suivant montrent quelques exemples de roulements pour coulée continue réalisés par **FARO**.

Des roulements spéciaux peuvent être réalisés sur demande.



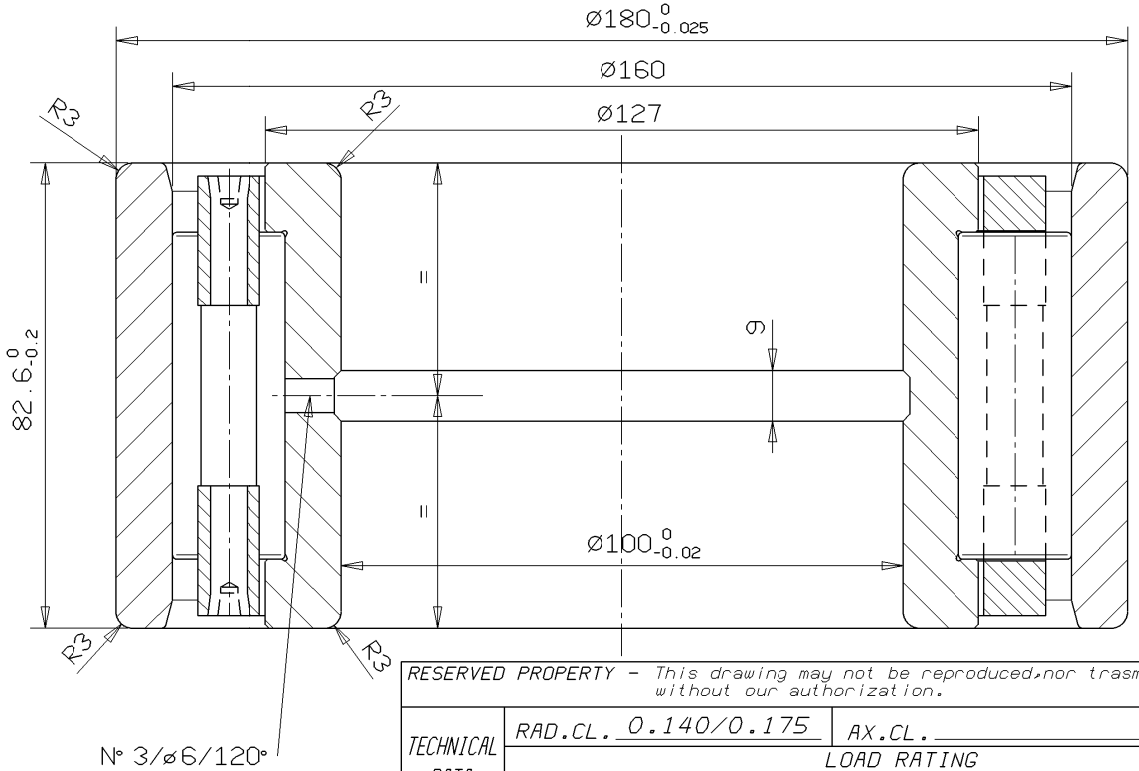
TECHNICAL DATA	RAD.CL. 0.140/0.175	AX.CL. min. 0.200	PRECISION CLASS P0	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	400.000 N	609.000 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

FARO S.p.A INDUSTRIALE	1994	DATE	SIGNAT.	SIZE
	DRWG.	19/04	EVELI	A4
	SEE			SCALE
	CHECK.			1:1

REF. NUP4220/82.6/C5/S3

DRAWING No 2.1973

DENOMINATION BEARING FOR CONTINUOUS CASTING



TECHNICAL DATA	RAD.CL. 0.140/0.175	AX.CL.	PRECISION CLASS P0	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	400.000 N	609.000 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

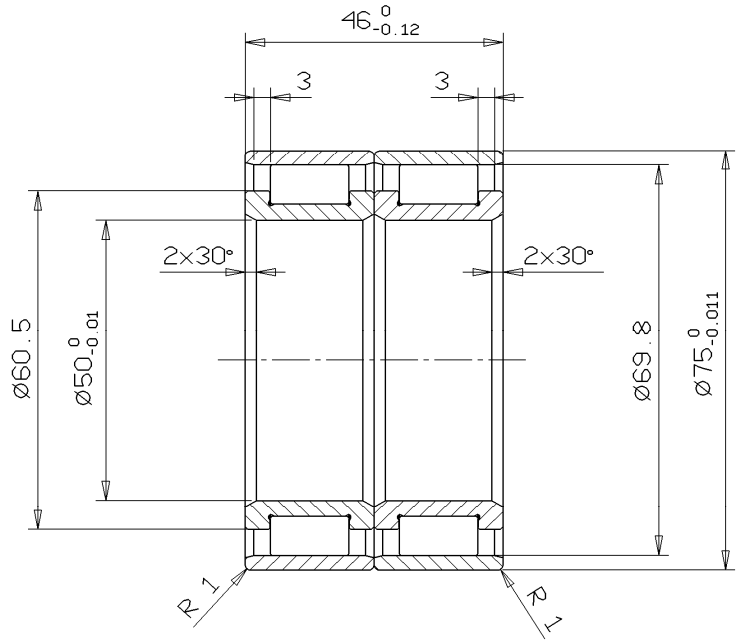
FARO S.p.A. INDUSTRIALE	1994	DATE	SIGNAT.	SIZE
	DRWG.	19/04	EVELI	A4
	SEE			SCALE
	CHECK.			1:1

REF. N4220/82.6/C5/S3

DRAWING No 2.1974

DENOMINATION BEARING FOR CONTINUOUS CASTING

SET OF TWO BEARINGS. FACTORY PRE-SELECTED AND SERIALIZED



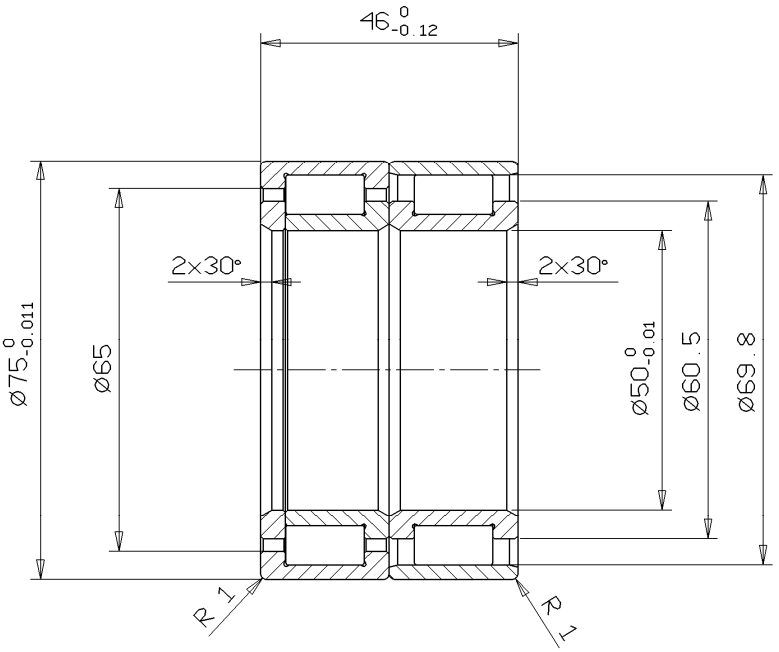
EXPANSION BEARING

STABILIZATION : S2 (MAX. 250° C)

TECHNICAL DATA	RAD.CL. 0.070/0.100	AX.CL.	PRECISION CLASS P6	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	118000 N	205500 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

FARO S.p.A INDUSTRIALE	1995	DATE	SIGNAT.	SIZE A4
	DRWG.	08-05	EVELI	REF.
	CHECK.			DRAWING No 2_2191
				SCALE 1:1
				DENOMINATION ROLLER BEARING

SET OF TWO BEARINGS. FACTORY PRE-SELECTED AND SERIALIZED



FIXED BEARING

STABILIZATION : S2 (MAX. 250° C)

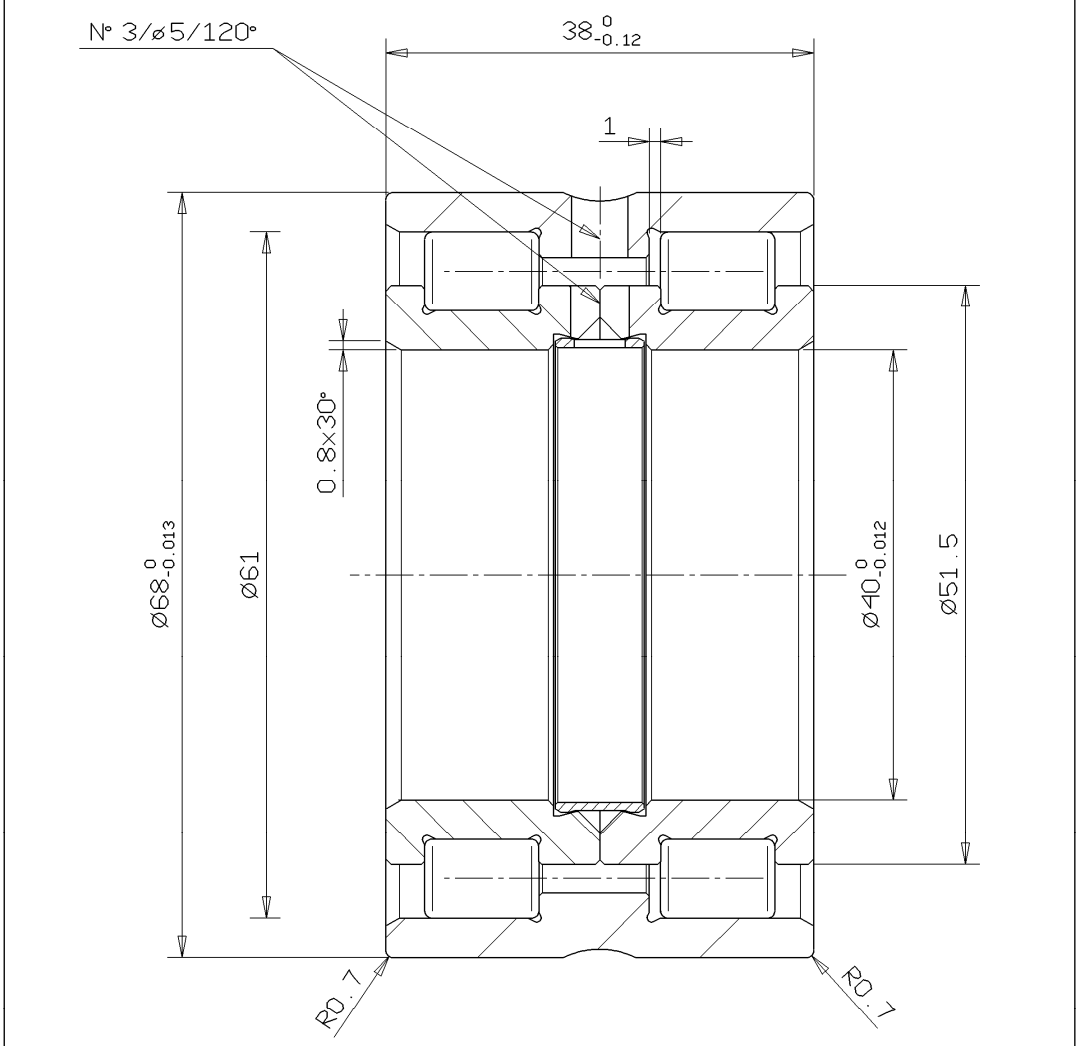
TECHNICAL DATA	RAD.CL. 0.070/0.100	AX.CL. 0.050/0.150	PRECISION CLASS P6	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	118000 N	205500 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

FARO S.p.A. INDUSTRIALE	1994	DATE	SIGNAT.	SIZE
	DRWG.	08-05	EVELI	A4
	CHECK.			SCALE 1:1

REF.

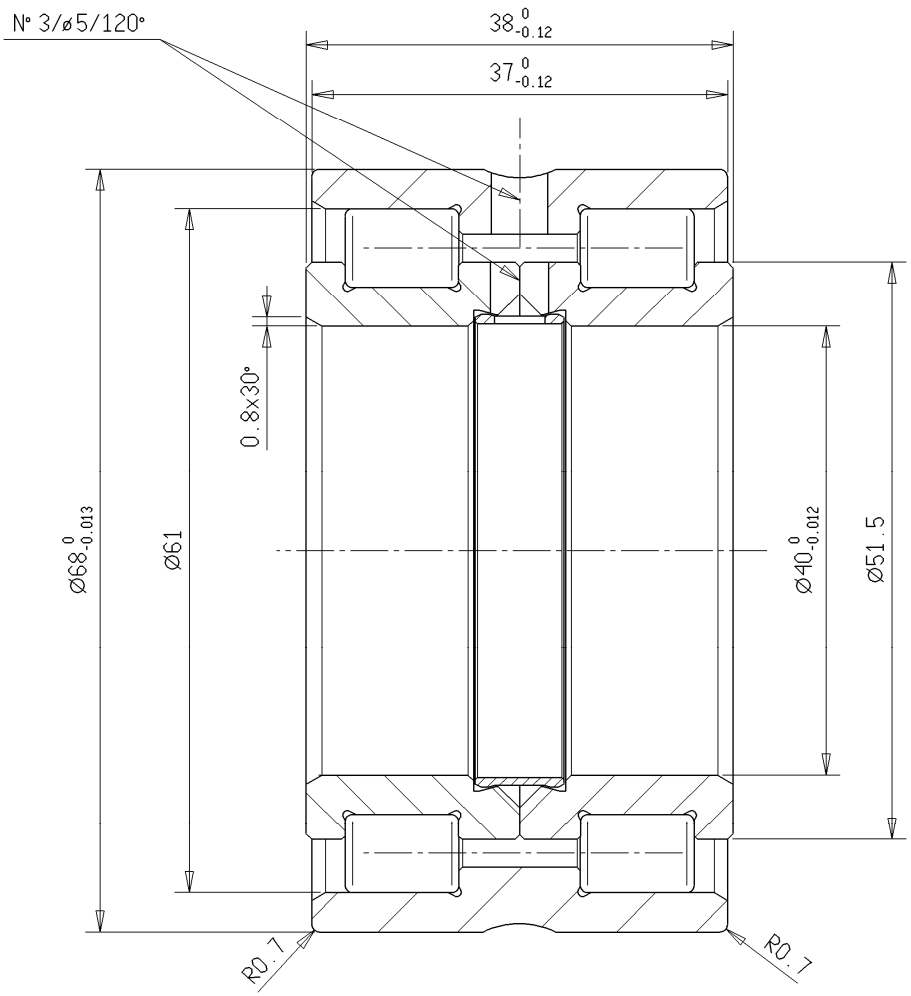
DRAWING No 2_2190

DENOMINATION ROLLER BEARING



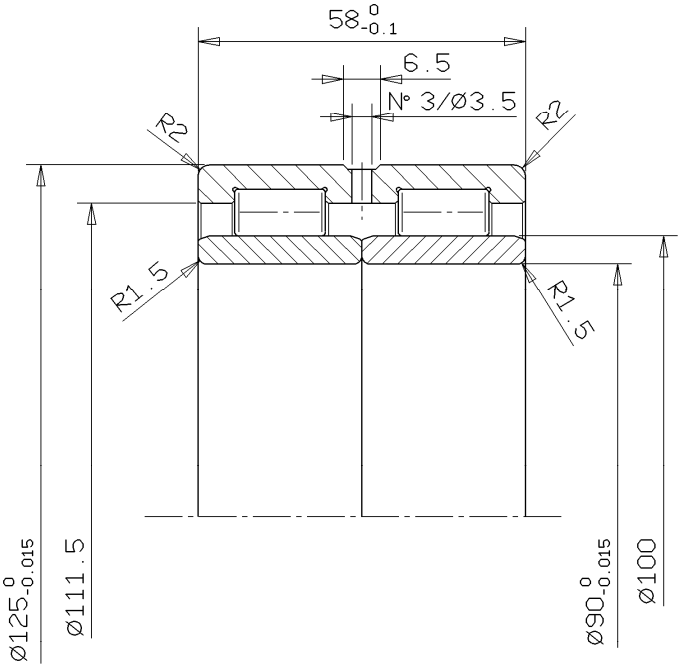
TECHNICAL DATA	RAD.CL. 0.200/0.250	AX.CL.		PRECISION CLASS PO	
	LOAD RATING				MAX SPEED
	BEARING		ROLLER		① OIL
	DYN ISO 281	STATIC ISO 76	Cw	Cow	② GREASE
RADIAL	81.200 N	122.700 N	N	N	① g/m
AXIAL	N	N	N	N	② g/m

FARO S.p.A INDUSTRIALE	1997	DATE	SIGNAT.	SIZE	REF.
	DRWG.	23/04	EVELI	A4	DRAWING No 2.1983/A
	SEE			SCALE	DENOMINATION CILINDRICAL
	CHECK.			1:1	ROLLER BEARING



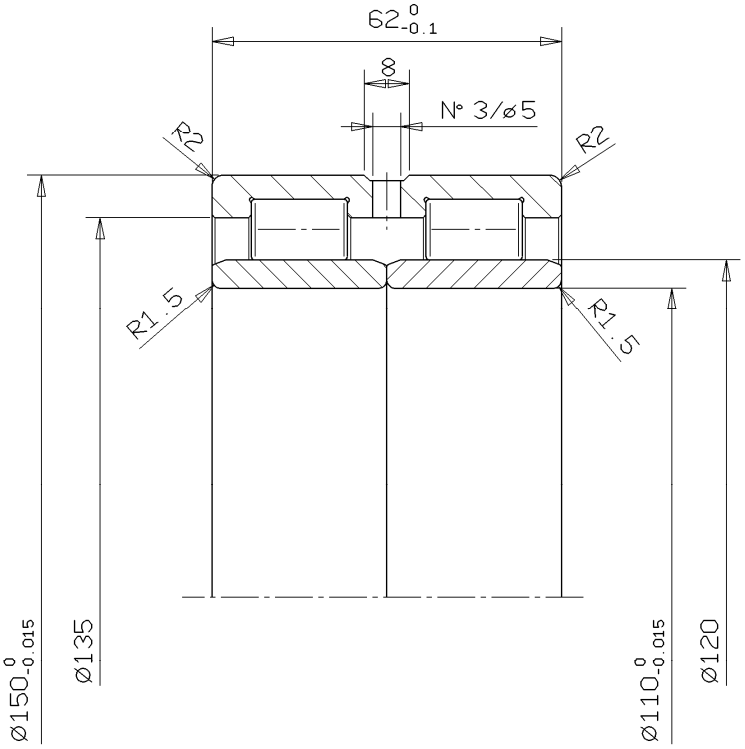
TECHNICAL DATA	RAD.CL. 0.200/0.250	AX.CL.	PRECISION CLASS P0	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	81.200 N	122.700 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

FARO S.p.A INDUSTRIALE	1997	DATE	SIGNAT.	SIZE	REF.
	DRWG.	22/04	EVELI	A4	DRAWING No 2.1982/A
	SEE			SCALE	DENOMINATION CILINDRICAL
	CHECK.			2:1	ROLLER BEARING



TECHNICAL DATA	RAD.CL. 0.105/0.140	AX.CL. ±4 mm		PRECISION CLASS P6/P5	
	LOAD RATING				MAX SPEED
	BEARING		ROLLER		① OIL
	DYN ISO 281	STATIC ISO 76	Cw	Cow	② GREASE
RADIAL	206.800 N	435.500 N	N	N	① g/m
AXIAL	N	N	N	N	② g/m

FARO S.p.A INDUSTRIALE	1996	DATE	SIGNAT.	SIZE	REF. BEARING Ø175
	DRWG.	16/12	LURIGHI	A4	DRAWING No 2.2294
	SEE			SCALE	DENOMINATION CILINDRICAL ROLLER BEARING
	CHECK.			1:1	



TECHNICAL DATA	RAD.CL. 0.125/0.165	AX.CL. ±4 mm		PRECISION CLASS P6/P5
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	273.200 N	552.000 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

FARO S.p.A INDUSTRIALE	1996	DATE	SIGNAT.	SIZE	REF. BEARING ø200
	DRWG.	16/12	LURIGHI	A4	DRAWING No 2.2293
	SEE			SCALE	DENOMINATION CILINDRICAL ROLLER BEARING
	CHECK.			1:1	

CUSCINETTI PER LAMINATOI

Cuscinetti di supporto dei cilindri di laminazione

I cuscinetti di supporto dei cilindri di laminazione sono soggetti a forti carichi ed a velocità di funzionamento dipendenti dal tipo di gabbia di laminazione.

Nelle gabbie di laminazione i cuscinetti destinati ai cilindri in genere sono a 4 file di rulli cilindrici per sopportare i carichi radiali, unitamente a reggispinta a rulli o a sfere per i carichi assiali.

Ruote di traslazione

Per l'estrazione dei gruppi cilindri vengono impiegate ruote di traslazione a rulli cilindrici che possiedono caratteristiche di elevata portata al carico statico così come le ruote di posizionamento verticale dei cilindri superiori.

I disegni seguenti mostrano alcuni esempi di multiroll, reggispinta e ruote di traslazione realizzati da FARO.

Cuscinetti speciali per forma e dimensioni possono essere forniti a richiesta.

ROLL NECK BEARINGS

Bearings for rolling-mills

They are subject to very high loads and working speeds which are specified by the type of roll stand.

In a typical roll stand a 4 row cylindrical roller bearing is used to take up radial loads in conjunction with a ball or roller based thrust bearing for the axial loads.

Transfer wheels

Work rolls are generally replaced using cylindrical roller based transfer wheels which require to be able to withstand very high static load. The same applies for the vertical positions wheels used for upper work rolls.

The enclosed examples have all been produced by **FARO**.

Bearings with special dimensions and form can be furnished upon request.

ROULEMENTS POUR LAMINOIR

Les roulements des supports des cylindres de laminage

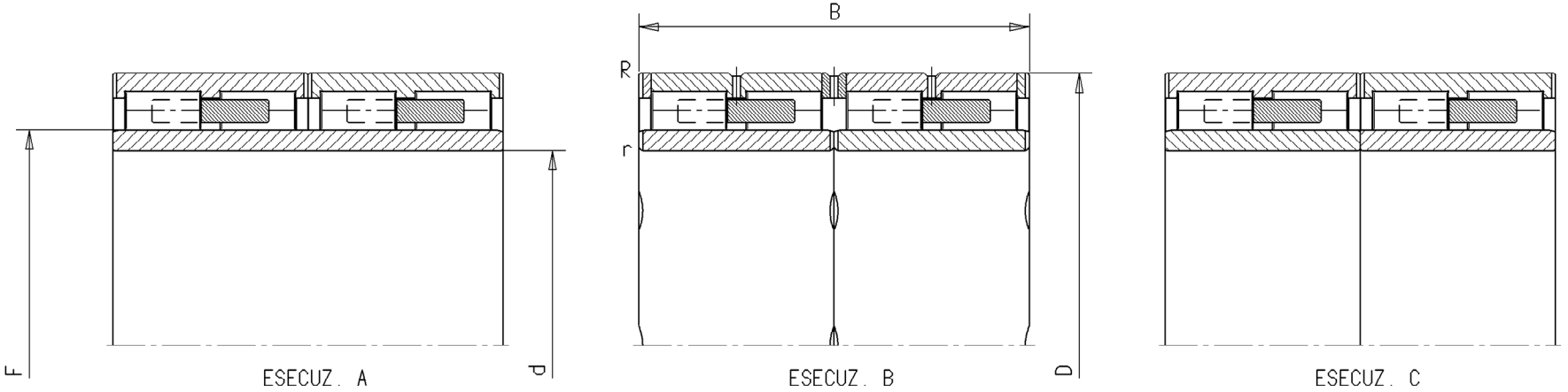
Ils sont soumis à des charges et à des vitesses dépendant du type de cage de laminage.
Dans les cages de laminage les roulements destinés aux cylindres sont généralement à quatre files de rouleaux cylindriques pour supporter les charges radiales et des butées à rouleaux ou à billes pour les charges axiales.

Roue de translation

Pour l'extraction des groupes de cylindres sont employées des roues de translation à rouleaux cylindriques qui ont une portée de charge élevée similaire aux roues de positionnement vertical des cylindres supérieurs.

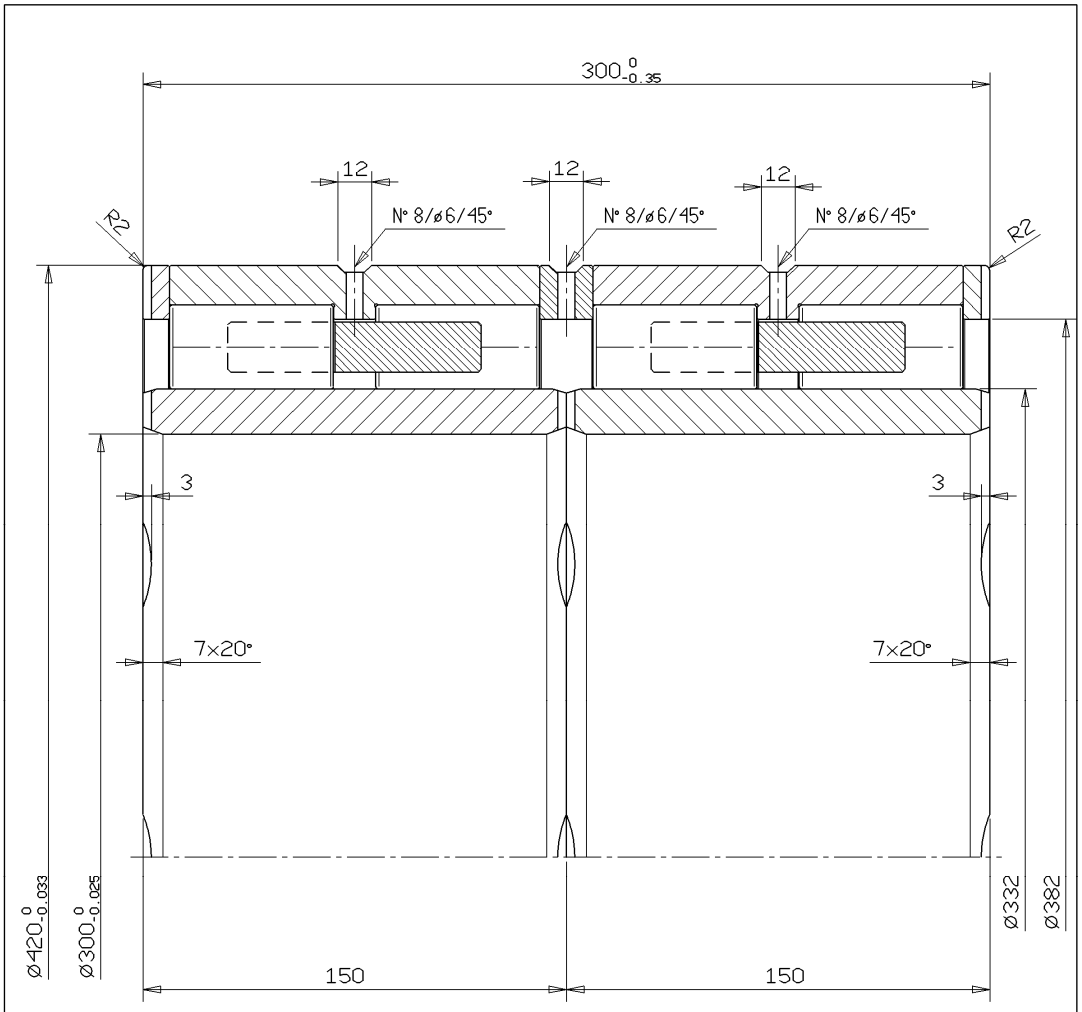
Les dessins suivants montrent quelques exemples de roulements réalisés par **FARO**.

Des roulements spéciaux peuvent être réalisés sur demande.



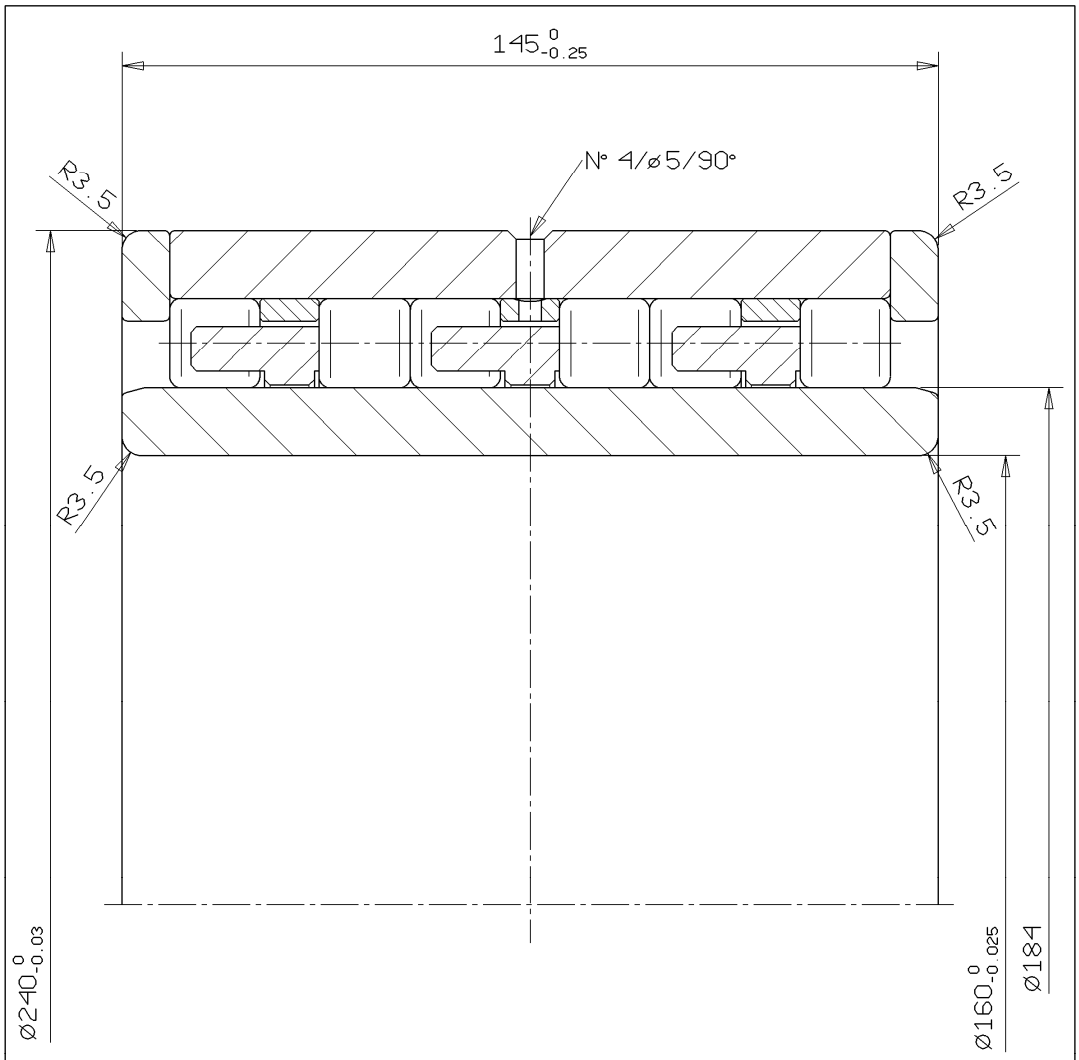
FARO	DIMENSIONS						C KN	C_0 KN	EXEC	EQUIVALEN
	d	D	B	F	r_{min}	R_{min}				
2.1041	145	225	156	169	2	2	890	1600	A	313924 A
2.1056	145	210	155	166	2	2	790	1550	A	314625
2.1042	160	230	130	180	2	2	780	1300	A	314190
2.1057	160	230	168	179	2	2	1000	2150	A	315189 A
2.1058	160	240	195	182	2	2	1250	2600	B	514957
2.1206	165,1	225,45	168,3	181	2	2	1000	2150	C	315642VJ202
2.1043	170	240	130	190	2	2	910	1750	A	635122
2.1060	190	270	200	212	2,5	2,5	1500	3300	A	314199 B

FARO	DIMENSIONS						C KN	C_0 KN	EXEC	EQUIVALEN
	d	D	B	F	r_{min}	R_{min}				
2.1044	200	270	170	222	2,5	2,5	1150	2550	A	314553
2.1045	200	280	170	222	2,5	2,5	1380	2800	A	314385
2.0976	220	310	192	246	2,5	2,5	1650	3500	A	313839
2.1047	230	330	206	260	2,5	2,5	1850	3900	A	313824
2.1048	260	370	220	292	3	3	2150	4600	A	313823
2.1049	280	390	220	312	3	3	2200	4850	A	313822
2.1051	300	420	300	332	4	2	3700	8700	B	314484 D
2.1052	340	480	350	378	4	2	4500	10500	B	314485 A



TECHNICAL DATA	RAD.CL. 0.305/0.385	AX.CL.	PRECISION CLASS P6/P5	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	3.700.000 N	8.600.000 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

FARO S.p.A INDUSTRIALE	1997	DATE	SIGNAT.	SIZE	REF. 314484 D
	DRWG.	14/05	LURIGHI	A4	DRAWING No 2.1051
	SEE			SCALE	DENOMINATION 4 RAWS CYLINDRICAL ROLLER BEARING WITH CAGE
	CHECK.			1:2	



TECHNICAL DATA	RAD.CL. 0.155/0.165	AX.CL.	PRECISION CLASS P0		
	LOAD RATING				MAX SPEED
	BEARING		ROLLER		① OIL
	DYN ISO 281	STATIC ISO 76	Cw	Cow	② GREASE
RADIAL	780.000 N	1.800.000 N	N	N	① g/m
AXIAL	N	N	N	N	② g/m

FARO S.p.A INDUSTRIALE	1993	DATE	SIGNAT.	SIZE	REF. NNU 6032 MB/C3
	DRWG.	05/07	EVELI	A4	DRAWING No 2.1908/C3
	SEE			SCALE	DENOMINATION CILINDRICAL
	CHECK.			1:1	ROLLER BEARIG

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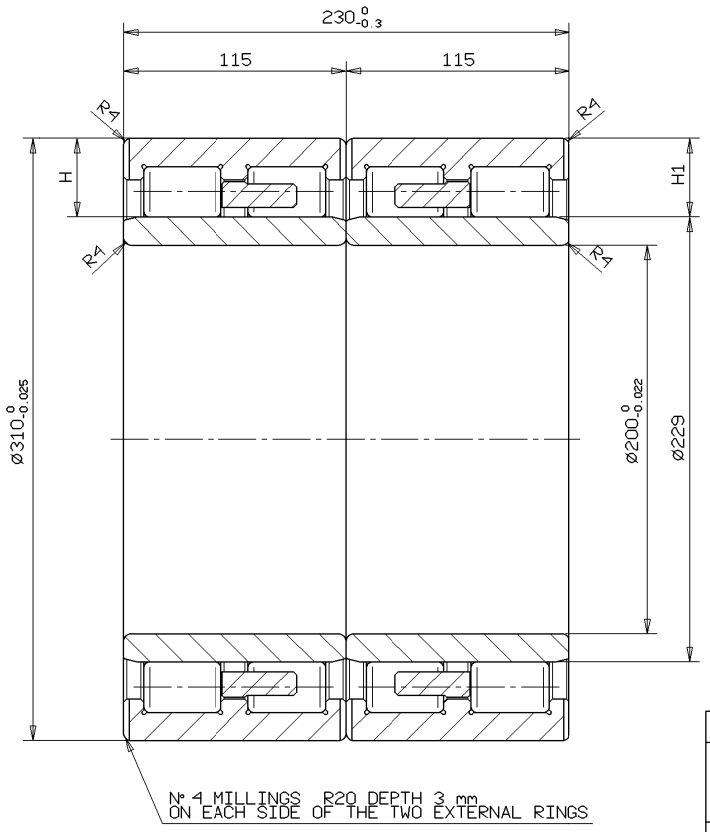
TECHNICAL DATA	RAD.CL. 0.395/0.515	AX.CL.	PRECISION CLASS P6/P5
	BEARING	LOAD RATING	ROLLER	MAX SPEED
	DYN ISO 281	STATIC ISO 76	Cw	Cow	① OIL
RADIAL	6.428.000 N	16.722.000N	____ N	____ N	② GREASE
AXIAL	____ N	____ N	____ N	____ N	① ____ g/m
					② ____ g/m

FAG INDUSTRIALE S.p.A.	1993	DATE	SIGNAT.	SIZE	REF. NNU 60/500 MA/P64
	DRWG.	20/07	EVELI	A4	DRAWING No 2.1911
	SEE			SCALE	DENOMINATION CILINDRICAL ROLLER BEARING
	CHECK.			1:2	



BEARING TECHNICAL DATA

-Precision class ISO P6 on d,D,B

-Precision class ISO P5 on running accuracy

-Maximum difference of one coupe of external rings on ø 310 = 0.015

-Maximum difference of the raceway of the two external rings = 0.015

-Maximum difference of one coupe of internal rings on ø 229 = 0.015

-Maximum difference of one coupe of internal rings on ø 200 = 0.015

-Maximum difference on H and H1 = 0.015

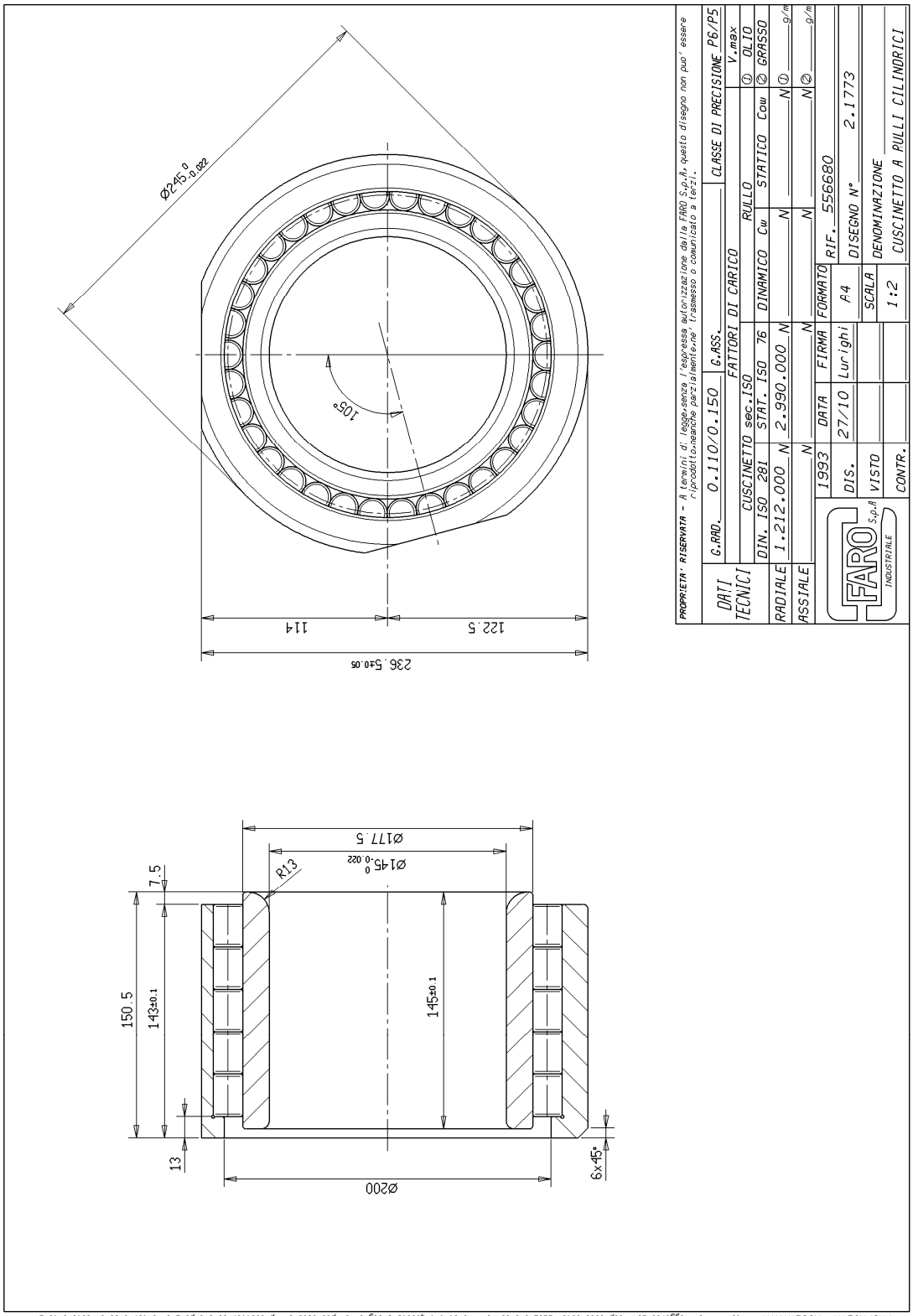
-Radial clearance "C4"

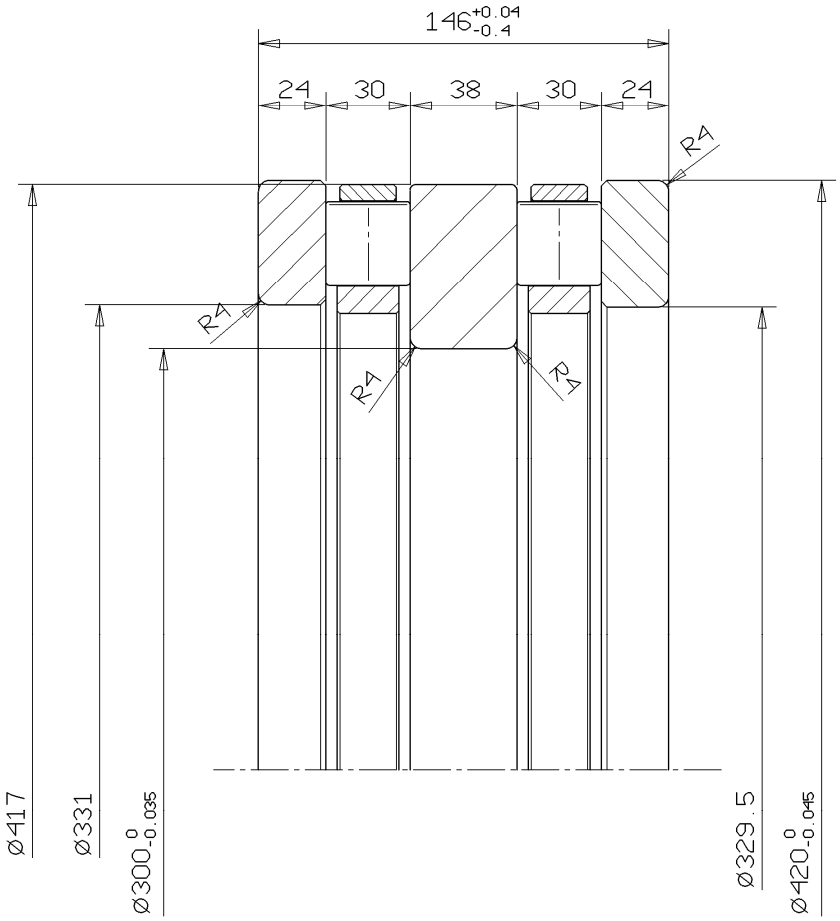
-Roller of "ZB" form of the same selection class

-Steel cage, sandblasted

TECHNICAL DATA	RAD.CL. 0.165/0.235	AX.CL.	PRECISION CLASS P6/P5	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	1.950.000 N	3.700.000 N	N / N	① g/m
AXIAL	N	N	N / N	② g/m

	1993	DATE	SIGNAT.	SIZE	REF. 313639/VJ202
FARO S.p.A. INDUSTRIALE	DRWG.	01/12	EVELI	A4	DRAWING No 2.1684
	SEE			SCALE	DENOMINATION MULTIROLL
	CHECK.			1:2	

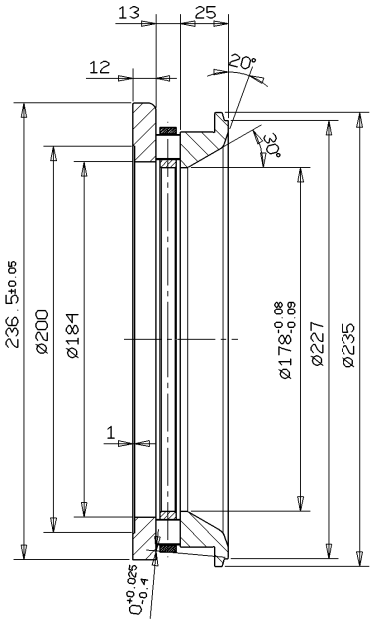

Ø245 0 -0.022
105°
114
122.5
236.5 ±0.05
Ø177.5
Ø145 0 -0.022
R13
7.5
150.5
143±0.1
145±0.1
13
Ø200
6x45°
PROPRIETA' RISERVATA – A termini di legge senza l'espressa autorizzazione della FARO S.p.A. questo disegno non puo' essere riprodotto,neanche parzialmente,ne' trasmesso o comunicato a terzi.
G.RAD. 0.110/0.150
G.ASS.
CLASSE DI PRECISIONE P6/P5
DATI TECNICI
FATTORI DI CARICO
CUSCINETTO sec.ISO
DIN. ISO 281
STAT. ISO 76
RADIALE 1.212.000 N 2.990.000 N
ASSIALE N N
RULLO
DINAMICO Cw
STATICO Cow
N N
V.max
① OLIO
② GRASSO
① g/m
② g/m
1993
DATA
FIRMA
FORMATO
A4
SCALA
1:2
RIF. 556680
DISEGNO N° 2.1773
DENOMINAZIONE
CUSCINETTO A RULLI CILINDRICI
DIS. 27/10 Lurighi
VISTO
CONTR.
FARO S.p.A. INDUSTRIALE

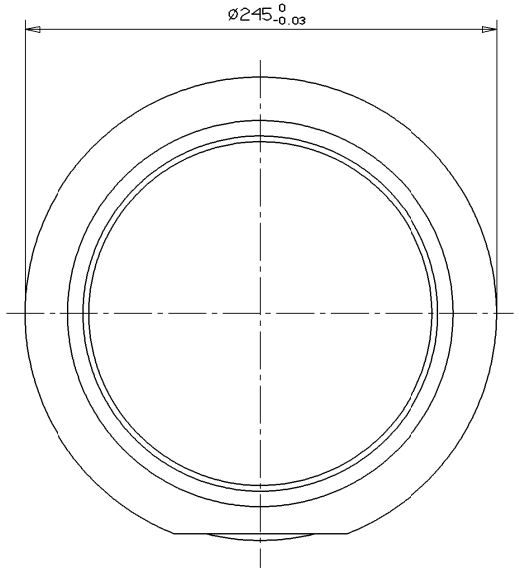


TECHNICAL DATA	RAD.CL.	AX.CL.	PRECISION CLASS PO	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	N	N	N / N	① g/m
AXIAL	1.050.000 N	5.440.000 N	N / N	② g/m

FARO S.p.A INDUSTRIALE

	1997	DATE	SIGNAT.	SIZE	REF. FAG 507123
	DRWG.	15/09	SENSIBILE	A4	DRAWING No 6.0270
	SEE			SCALE	DENOMINATION AXIAL
	CHECK.			1:2	CYLINDRICAL ROLLER BEARING

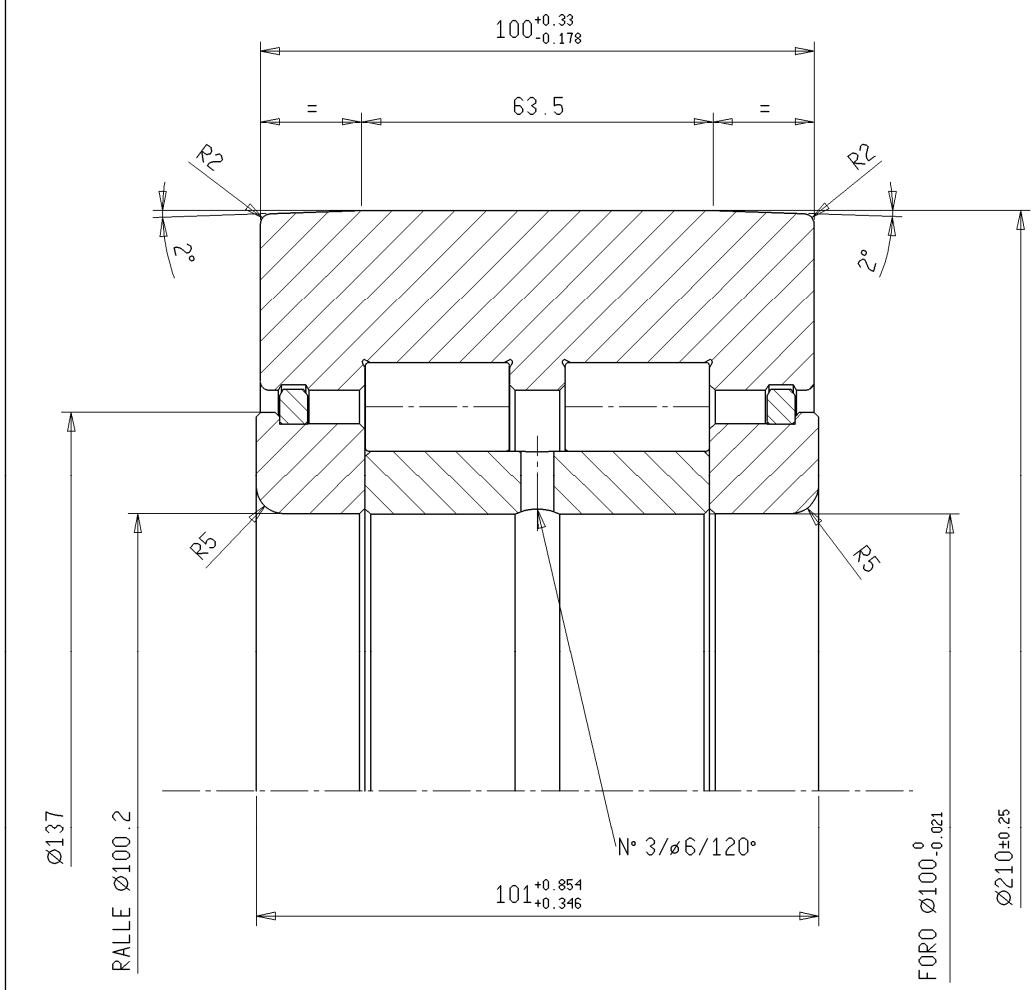




TECHNICAL DATA	RAD.CL.	AX.CL.	PRECISION CLASS	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	N	N	N / N	① g/m
AXIAL	230.300 N	1.059.000 N	N / N	② g/m

FARO S.p.A. INDUSTRIALE

	1994	DATE	SIGNAT.	SIZE	REF.
DRWG.		26/01	LURIGHI	A3	DRAWING No 6.0254
SEE				SCALE	DENOMINATION AXIAL BEARING
CHECK.				1:2	



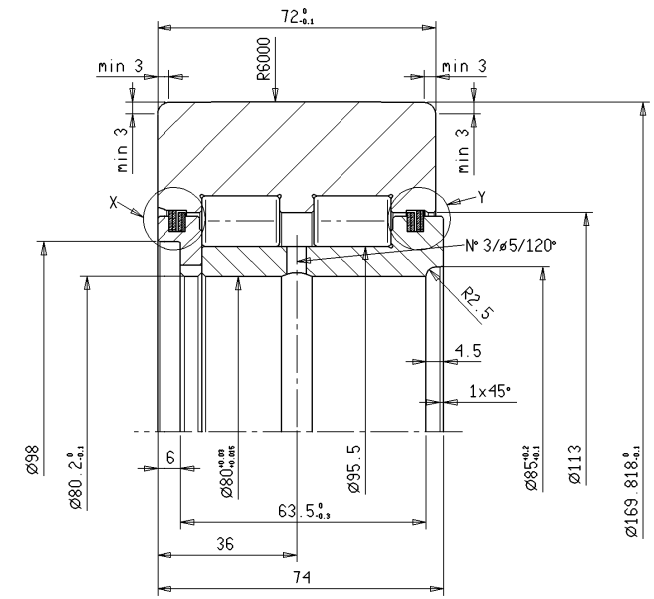
Fr zull=90.000 N Fro zull=120.000 N

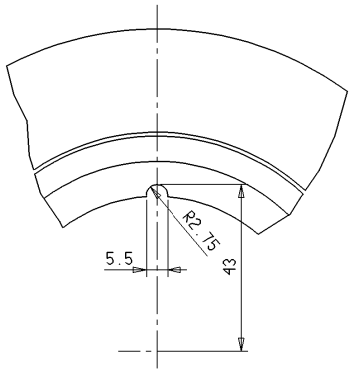
TECHNICAL DATA	RAD.CL. 0.105/0.140	AX.CL.	PRECISION CLASS

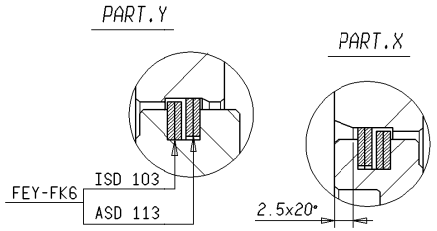
	LOAD RATING				MAX SPEED
	BEARING		ROLLER		① OIL
	DYN ISO 281	STATIC ISO 76	Cw	Cow	② GREASE
RADIAL	460.000 N	852.000 N	309.000 N	546.000 N	① ____ g/m
AXIAL	____ N	____ N	____ N	____ N	② ____ g/m

FARO S.p.A INDUSTRIALE

	2001	DATE	SIGNAT.	SIZE	REF.
DRWG.		27/02	MARSEGLIA	A4	DRAWING No 2.0677
SEE				SCALE	DENOMINATION WHEEL
CHECK.				1:1	







Fr zull = 200.000 N Fro zull = 320.000 N

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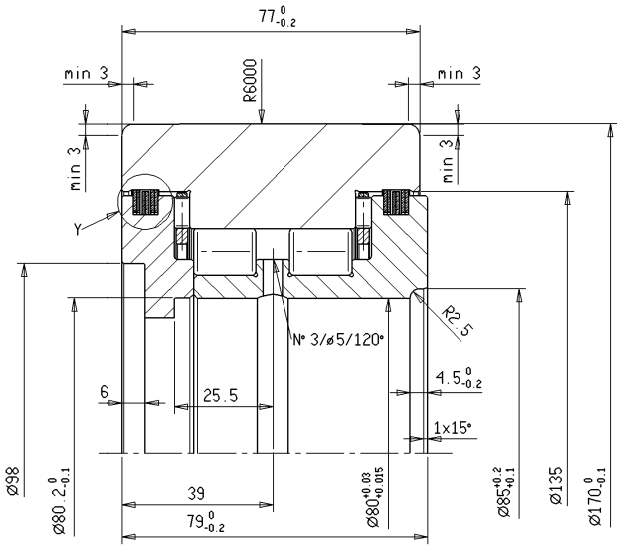
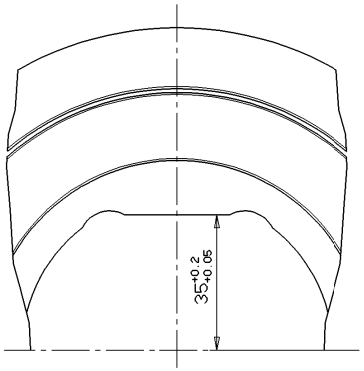
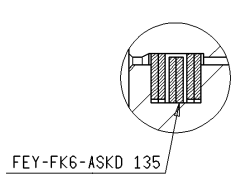
TECHNICAL DATA	RAD.CL. 0.050/0.085	AX.CL. 0.100/0.150	PRECISION CLASS	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	290.000 N	505.000 N	205.000 N / 330.000 N	① ____ g/m
AXIAL	____ N	____ N	____ N / ____ N	② ____ g/m

FARO S.p.A. INDUSTRIALE	2000	DATE	SIGNAT.	SIZE	REF.
	DRWG.	28/07	SENSIBILE	A3	DRAWING No 2.2379/A
	SEE			SCALE	DENOMINATION CONVEYOR WHEEL
	CHECK.			1:1	







Fr zull= 200.000 N Fro zull= 280.000 N

TECHNICAL DATA	RAD.CL. 0.050/0.085	AX.CL.	PRECISION CLASS	
	LOAD RATING			MAX SPEED
	BEARING		ROLLER	① OIL
	DYN ISO 281	STATIC ISO 76	Cw / Cow	② GREASE
RADIAL	228.000 N	378.000 N	169.000 N / 272.000 N	① ____ g/m
AXIAL	53.000 N	313.000 N	____ N / ____ N	② ____ g/m

	2000	DATE	SIGNAT.	SIZE	REF.
FARO S.p.A. INDUSTRIALE	DRWG.	28/07	SENSIBILE	A3	DRAWING No 2.2480
	SEE			SCALE	DENOMINATION CONVEYOR WHEEL
	CHECK.			1:1	