

# **NTN** **Bearing Units**




























# TECHNICAL DATA CONTENTS

<b>DIMENSION TABLE</b>	4
<b>Products Information</b>	6
<b>1. Construction</b>	11
<b>2. Design Features and Advantages</b>	12
2.1 Maintenance free type	12
2.2 Relubricatable type	12
2.3 Special sealing feature	12
2.4 Secure fitting	13
2.5 Self-aligning	13
2.6 Higher rated load capacity	13
2.7 Light weight yet strong housing	13
2.8 Easy mounting	13
2.9 Accurate fitting of the housing	13
2.10 Bearing replaceability	13
<b>3. Material</b>	14
3.1 Raceway and rolling element materials	14
3.2 Housing materials	14
<b>4. Bearing unit part numbering</b>	16
4.1 Bearing unit part numbering	16
4.2 Insert bearing part numbering	16
4.3 Housing part numbering	16
4.4 Supplemental codes	16
4.5 Special specifications	17
<b>5. Tolerance</b>	24
5.1 Tolerances of ball bearings for the unit	24
5.2 Tolerances of housings	27
5.3 Bearing internal clearance	31
<b>6. Basic Load Rating and Life</b>	34
6.1 Bearing life	34
6.2 Basic rating life and basic dynamic load rating	34
6.3 Machine applications and requisite life	36
6.4 Adjusted life rating factor based on ISO281:1990	36
6.5 Basic static load rating	37
6.6 Allowable static equivalent load	37
<b>7. Loads</b>	38
7.1 Load acting on the bearing	38
7.2 Dynamic equivalent radial load	40
7.3 Static equivalent radial load	40
<b>8. Allowable Rotating Speed</b>	41
<b>9. Lubrication</b>	42
9.1 Life of grease	42
9.2 Replenishment of grease	42
9.3 Grease fitting	44
9.4 Standard location of the grease fitting	45
<b>10. Shaft Designs</b>	46
10.1 Set screw system bearing units	46
10.2 Eccentric collar system	50
10.3 Adapter system bearing units	50
10.4 Mounting method of Take-up type unit	50
<b>11. Handling of the Bearing Unit</b>	51
11.1 Mounting of the housing	51
11.2 Mounting the bearing unit on the shaft	54
11.3 Running tests	59
11.4 Inspection during operation	59
11.5 Dismounting the bearing unit	60
11.6 Replacement of the bearing	60
<b>Attaced Table</b>	526












**Set screw type (1)**

Page

<b>Pillow blocks</b>	Pillow blocks cast housing		<b>UCP2</b> <b>UCP3</b> <b>UCPX</b>	62 68 74	
	Pillow blocks cast housing low center height		<b>UCPL2</b> <b>ASPL2</b>	80 112	
	Pillow blocks (Steel series)		<b>UCPG2</b> <b>UCPG3</b>	84 86	
	Pillow blocks (Stainless series)		<b>F-UCPM2</b>	88	
	Pillow blocks (Plastic housing series)		<b>F-UCPR2</b>	90	
	Thick pillow blocks cast housing		<b>UCIP2</b> <b>UCIP3</b>	92 94	
	Thick pillow blocks (Steel series)		<b>UCIPG2, 3</b>	98	
	Pillow blocks cast housing high center height		<b>UCHP2</b>	100	
	Narrow pillow blocks cast housing		<b>UCUP2</b>	104	
	Light pillow blocks cast housing		<b>ASPB2</b>	108	
	Pillow blocks ductile cast housing		<b>UCPE2</b>	110	
	Pillow blocks pressed steel housing		<b>ASPP2</b> <b>ASRPP2</b>	116 118	
	<b>Flanged units</b>	Square flanged units cast housing		<b>UCF2</b> <b>UCF3</b> <b>UCFX</b>	120 126 132
		Square flanged units (Steel series)		<b>UCFG2</b> <b>UCFG3</b>	138 140
		Square flanged units cast housing w/ spigot joint		<b>UCFS3</b>	142
Square flanged units w/ spigot joint (Steel series)			<b>UCFSG3</b>	148	
Round flanged units cast housing w/ spigot joint			<b>UCFC2</b> <b>UCFCX</b>	150 156	
Round flanged units w/ spigot joint (Steel series)			<b>UCFCG2</b>	162	
Rhombus flanged units cast housing			<b>UCFL2</b> <b>UCFL3</b> <b>UCFLX</b>	164 170 176	
Rhombus flanged units (Steel series)			<b>UCFLG2</b> <b>UCFLG3</b>	178 180	
Rhombus flanged units (Stainless series)			<b>F-UCFM2</b>	182	
Rhombus flanged units (Plastic housing series)			<b>F-UCFLR2</b>	184	
Modified rhombus flanged units cast housing			<b>UCFA2</b>	186	
Modified flanged units cast housing			<b>UCFH2</b>	190	
Light rhombus flanged units cast housing			<b>ASFB2</b> <b>ASFD2</b>	194 196	












**Set screw type (2)**

Page

<b>Flanged units</b>	Rhombus flanged units ductile cast housing		<b>UCFE2</b>	198
	Round flanged units pressed steel housing		<b>ASPF2</b> <b>ASRPF2</b>	200 202
	Rhombus flanged units pressed steel housing		<b>ASPF2</b> <b>ASRPF2</b>	204 206
<b>Hanger units</b>	Hanger units cast housing		<b>UCHB2</b>	208
<b>Take-up units</b>	Take-up units cast housing		<b>UCT2</b> <b>UCT3</b> <b>UCTX</b>	212 218 224
	Take-up units (Steel series)		<b>UCTG2</b> <b>UCTG3</b>	230 232
<b>Cartridge units</b>	Cartridge units cast housing		<b>UCC2</b> <b>UCC3</b> <b>UCCX</b>	234 236 239
<b>Stretcher units</b>	Mini stretcher units		<b>ASPT2</b>	241
	Take-up stretcher units		<b>UCT2</b>	408
	Type L stretcher units		<b>UCL2</b>	410
	Type M stretcher units		<b>UCM2</b> <b>UCM3</b>	411 412






**Eccentric locking collar type (1)**

Page

<b>Pillow blocks</b>	Pillow blocks cast housing		<b>UELPL2</b> <b>UELPL3</b>	242 246	
	Pillow blocks cast housing low center height		<b>UELPL2</b> <b>AELPL2</b> <b>JELPL2</b>	252 260 264	
	Pillow blocks cast housing high center height		<b>UELHP2</b>	256	
	Narrow pillow blocks cast housing		<b>UELUP2</b>	258	
	Light pillow blocks cast housing		<b>AELPB2</b>	268	
	Pillow blocks pressed steel housing		<b>AELPP2</b> <b>AELRPP2</b>	270 272	
	<b>Flanged units</b>	Square flanged units cast housing		<b>UELFU2</b> <b>UELF2</b> <b>UELF3</b>	274 278 282
		Square flanged units cast housing w/ spigot joint		<b>UELFS3</b>	288
Round flanged units cast housing w/ spigot joint			<b>UELFC2</b>	294	
Rhombus flanged units cast housing			<b>UELFU2</b> <b>UELFL2</b> <b>UELFL3</b>	298 302 306	
Light rhombus flanged units cast housing			<b>AELFB2</b>	312	
			<b>AELFD2</b> <b>JELFD2</b>	314 315	








**Eccentric locking collar type (2)**

Page

<b>Flanged units</b>	Round flanged units pressed steel housing		<b>AELPF2</b> 316 <b>JELPF2</b> 318 <b>AELRPF2</b> 320
	Rhombus flanged units pressed steel housing		<b>AELPFL2</b> 322 <b>AELRPFL2</b> 324 <b>JELPFL2</b> 326
	<b>Take-up units</b>	Take-up units cast housing	
<b>Cartridge units</b>	Cartridge units cast housing		<b>UEL2</b> 338 <b>UEL3</b> 340
<b>Stretcher units</b>	Mini stretcher units		<b>AELPT2</b> 344 <b>JELPT2</b> 345






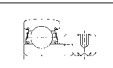
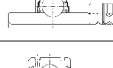
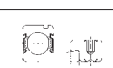


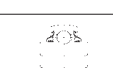
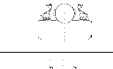





**Adapter type**

Page

<b>Pillow blocks</b>	Pillow blocks cast housing		<b>UKP2</b> 346 <b>UKP3</b> 350 <b>UKPX</b> 354
<b>Flanged units</b>	Square flanged units cast housing		<b>UKF2</b> 358 <b>UKF3</b> 362 <b>UKFX</b> 366
	Square flanged units cast housing w/ spigot joint		<b>UKFS3</b> 370
	Round flanged units cast housing w/ spigot joint		<b>UKFC2</b> 374 <b>UKFCX</b> 378
	Rhombus flanged units cast housing		<b>UKFL2</b> 382 <b>UKFL3</b> 386 <b>UKFLX</b> 390
	<b>Take-up units</b>	Take-up units cast housing	
<b>Cartridge units</b>	Cartridge units cast housing		<b>UKC2</b> 404 <b>UKC3</b> 405 <b>UKCX</b> 407

**Ball bearings**

Page

<b>Set screw type</b>		<b>UC2</b> 414 <b>UC3</b> 420 <b>UCX</b> 426 <b>F-UC2</b> 430
		<b>AS2</b> 432
		<b>AR2</b> 436
		<b>UCS2</b> 474 <b>UCS3</b> 478
		<b>ASS2</b> 484
<b>Eccentric locking collar type</b>		<b>UEL2</b> 440 <b>UEL3</b> 444
		<b>AEL2</b> 450
		<b>JEL2</b> 454
		<b>REL2</b> 458
		<b>UELS2</b> 488 <b>UELS3</b> 492
		<b>AELS2</b> 498
		<b>JELS2</b> 502
<b>Adapter type</b>		<b>UK2</b> 462 <b>UK3</b> 466 <b>UKX</b> 470
<b>Tight fit type</b>		<b>CS2</b> 506 <b>CS3</b> 507
<b>Farm implement bearings</b>		<b>AS (Square bore)</b> 508
		<b>AC (Round bore)</b> 516
		<b>AH (Hex-bore)</b> 522