

Displacement Pump

For professional use only.

3300 psi (22.7 MPa, 227 bar) Maximum Working Pressure

Model 16X414, Series A UltraMax II and Ultimate MX II 695/795 GMAX II 3900

Model 16X418, Series A TexSpray Mark IV

Model 16X419, Series A UltraMax II and Ultimate MX II 1095/1595 GMAX II 5900

Model 16X420, Series A UltraMax II and Ultimate MX II 1095/1595 IronMan GMAX 5900 IronMan

Model 16X421, Series A TexSpray Mark V and 5900 HD

Model 16Y602, Series A TexSpray Mark VII

Model 16X426, Series A GMAX II 7900

Model 16X427, Series A TexSpray Mark X and 7900HD

Model 16Y599, Series A TexSpray Mark V and IronMan

Model 17N693, Series A APX 6200 (MaxLife)

Model 17R044, Series A APX 6200 (Chrome)

Model 17N694, Series A APX 8200 (MaxLife)

Model 17R042, Series A APX 8200 (Chrome)

Important Safety Instructions

Read all warnings and instructions in this manual. Save these instructions.



ΕN

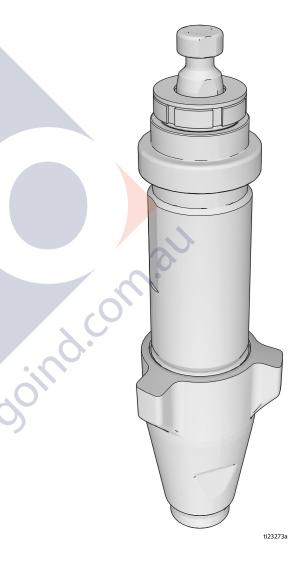


Table of Contents

Parts - Pump 16X420, 16Y59913
Parts - Pump 16X419, 16X421, 16Y602 14
Parts - Pump 16X426, 16X427 15
Parts - Pump 17N693, 17R044 16
Parts - Pump 17N694, 17R042 17
Notes
Technical Data 19
Graco Standard Warranty



Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 EQUIPMENT MISUSE HAZARD Misuse can cause death or serious injury. Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals. Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer. Turn off all equipment and follow the Pressure Relief Procedure when equipment is not in use. Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only. Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards. Use equipment only for its intended purpose. Call your distributor for information. Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
 Comply with all applicable safety regulations. MOVING PARTS HAZARD Moving parts can pinch, cut or amputate fingers and other body parts. Keep clear of moving parts. Do not operate equipment with protective guards or covers removed. Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.
 SKIN INJECTION HAZARD High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, get immediate surgical treatment. Do not aim the gun at, or spray any person or animal. Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body. Always use the nozzle tip guard. Do not spray without nozzle tip guard in place. Do not leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and follow the Pressure Relief Procedure for turning off the unit. Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.

Service

Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

- 1. Engage trigger lock.
- 2. Turn ON/OFF switch to OFF.
- 3. Unplug power cord.
- Disengage trigger lock. Hold metal part of gun against grounded metal pail and trigger gun into pail to relieve pressure.
- 5. Engage the trigger lock.
- 6. Open all fluid drain valves in the system, having a waste container ready to catch drainage. Leave drain valve(s) open until you are ready to spray again.
- 7. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.

Pump Repair Kits

Pump	Repair Kit
16X414	248212
16X419	248213 (stainless steel check balls) 249189 (ceramic check balls)
16X426	249123 (stainless steel check balls) 17A578 (ceramic check balls)
16X427, 17N694	17A578 (ceramic check balls)
16X418	24V063
16X421	249189
16Y602	24M830
16X420	17K162 (stainless steel check balls)
16Y599	17K475 (ceramic check balls)
17N693	17N703 (ceramic check balls)
17R042	17R119 (ceramic SI-N check balls)
17R044	17R114 (ceramic SI-N check balls)

Tools Needed

Vise

- 12 in. adjustable, open-end wrench (2)
- Hammer (20 oz maximum)
- Small screwdriver
 - Throat Seal Liquid
 - Pick or long small screwdriver

Cleaning and Inspecting Parts

Clean and inspect parts. Pay particular attention to the ball seats in the intake valve and piston, which must have no nicks or wear, and to the inside of the sleeve and the outside of the piston rod, which must not be worn or scratched. Replace worn or damaged parts.



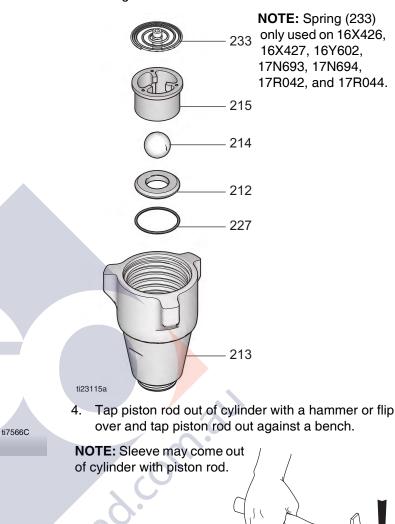
To reduce the risk of serious injury from pressurized fluid, never use sharp or pointed tools to remove sleeve. If the sleeve cannot be removed easily, return the sleeve and cylinder to a Graco distributor for removal.

NOTE: Remove and clean sleeve when repacking pump.

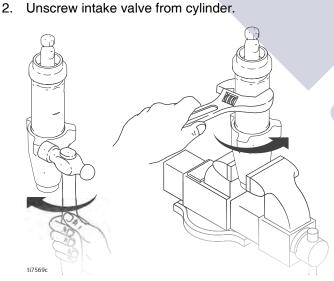
Repair When Pump is Separated From Sprayer

Disassembling the Pump

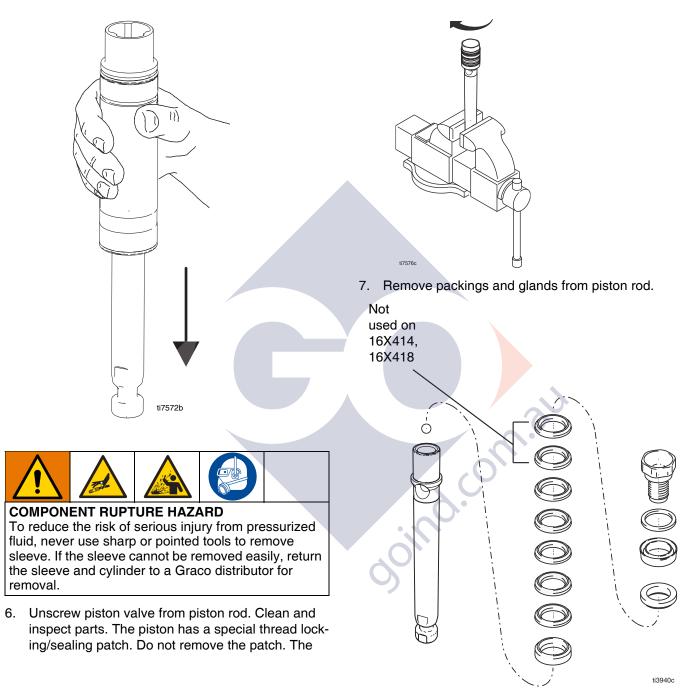
- 1. Remove packing nut (202) and o-ring (228).
- 3. Disassemble intake valve. Clean and inspect o-ring (227). **NOTE:** A pick may be required to remove o-ring.



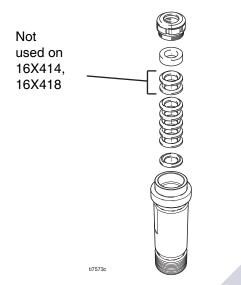
ti7571c



 Remove piston rod from sleeve, or remove sleeve from cylinder. Mark IV, Mark VII, and APX 6200 models: Remove sleeve spacer (230) from sleeve. patch allows four disassembly/assembly procedures before it is necessary to apply thread sealant to the threads.



8. Remove throat packings and glands from cylinder. Discard throat packings and glands.



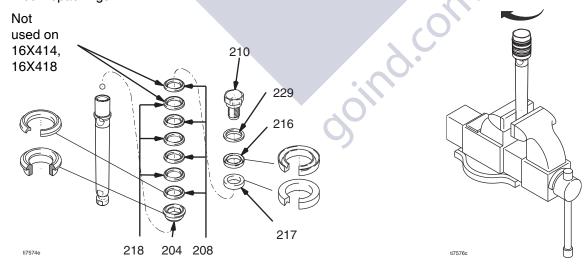
Assembling the Pump

 Soak all leather packings in SAE 30W oil for 1 hour minimum prior to assembly. Stack male gland (204) on piston rod. Alternately stack UHMWPE (208) and leather (218) packings (note orientation) on piston rod. Install female gland (217). Install piston wiper (216) (note orientation) and backup washer (229) on piston valve, threads are good for four repackings. Use thread sealant on piston valve threads after four repackings. 2. Install ball (206) in piston rod. If thread sealant is applied to piston valve threads, make sure that none gets on ball.

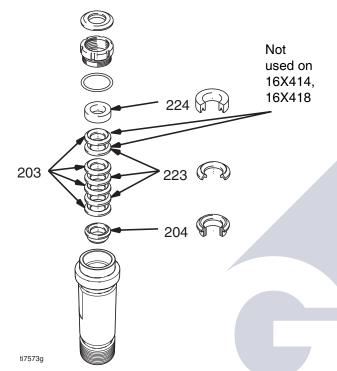


3. Tighten piston valve to piston rod as specified:

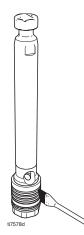
Models	Torque
16X414, 16X418	27 ± 3 ft-lb.
	(36.1 ± 4.1 №m)
16X419, 16X420, <mark>16X</mark> 421,	55 ± 3 ft-lb.
16Y602, 16Y599, <mark>17N6</mark> 93,	(74.6 ± 4.1 №m)
17R044	
16X426, 16X427, 17N694,	100 ± 5 ft-lb.
17R042	(136 ± 7 №m)



 Soak all leather packings in SAE 30W oil for one hour minimum prior to assembly. Place male gland (204) in cylinder. Alternately stack UHMWPE (203) and leather packings (223) (note orientation). Place female gland (224) in top of cylinder seat packings.



6. Grease piston packings.



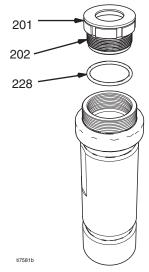
NOTICE

Do not slide piston assembly into top of sleeve as this may damage piston packing.

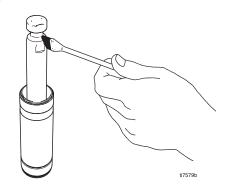
7. Slide piston assembly into bottom of sleeve.



 Install seal (201) into packing nut (202). Install o-ring (228) onto packing nut. Loosely install packing nut into cylinder.

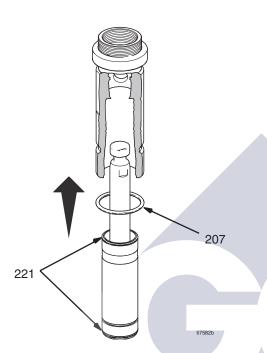


8. Grease top inch or two of piston rod that will go through the cylinder throat packings.

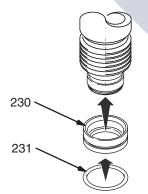


 Grease o-rings (221) and place on sleeve. Slide sleeve/piston rod assembly into bottom of cylinder. Replace o-ring (207) if desired.

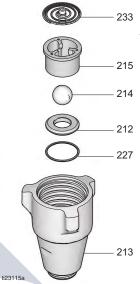
NOTE: O-ring (207) is not required for safe pump operation.



10. Mark IV, Mark VII, and APX6200 models: Install o-ring (231) on sleeve spacer (230) and install sleeve spacer on sleeve.



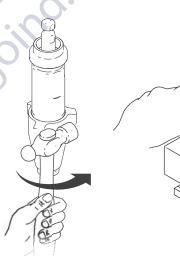
11. Reassemble intake valve with new o-ring (227), seat (212) and ball (214). Seat may be flipped over and used on other side. Clean seat thoroughly.

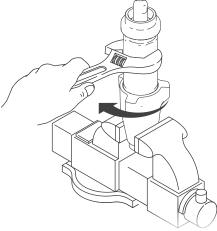


NOTE: Spring (233) only used on 16X426, 16X427, 16Y602, 17N693, 17N694, 17R042, and 17R044.

12. Install intake valve on cylinder. If a wrench is used torque as follows:

1	Models	Torque
	16X414, 16X418	67 ± 5 ft-lb (90.8 ± 6.8 №m)
	16X419, 16X420,	80 ± 5 ft-lb (108.5 ± 6.8 N•m)
	16X421, 16Y602,	
	16Y599	
	16X426, 16X427,	200 ± 15 ft-lb (271.2 ± 20.3 N•m)
	17N693, 17N694,	
	17R041, 17R044	



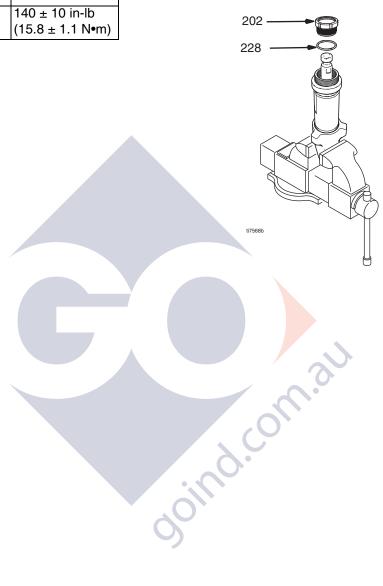


ti7569d

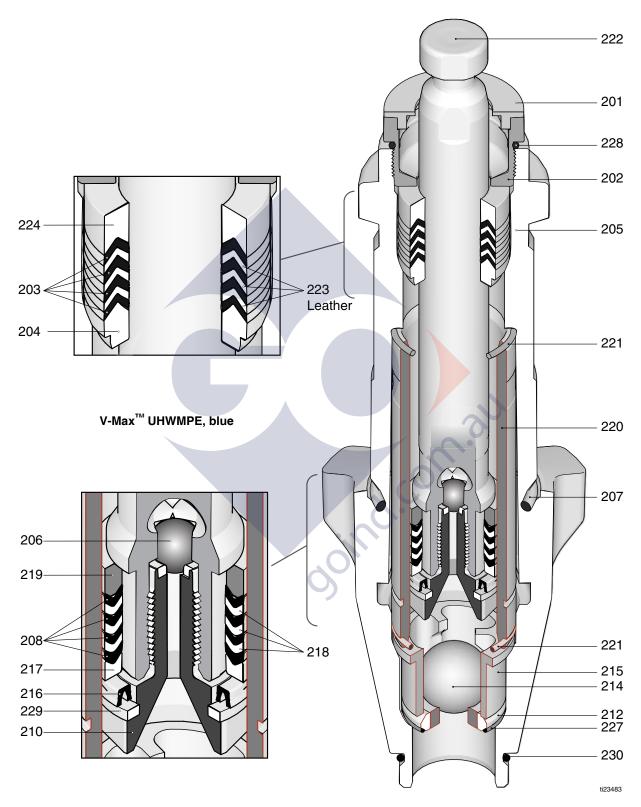
13. Torque packing nut (202) as follows:

Models	Torque
	100 ± 10 in-lb (11.3 ± 1.1 №m)
	140 ± 10 in-lb (15.8 ± 1.1 №m)

14. Remove o-ring (228) when pump packings begin to leak after extended use. Then tighten packing nut down until leakage stops or lessens. This allows approximately 100 gallons of additional operation before a repacking is required.



Cross-Section Reference



Pump 16X419, 16X420

Parts - Pump 16X414, 16X418

Ref.	Part	Description	Qty.		~\
201*†	179810	SEAL, throat	1		
202	193046	NUT, packing	1	201	
203*†	192692	V-PACKING, throat, V-Max,	3		221
		UHMWPE, blue			<u> </u>
204*+	15C987	GLAND, male, throat,	1	202	
205	100007	CYLINDER, pump	1		
200	16X450	Model 16X414	•		222
	16X456	Model 16X418		228 — 📿	
206	10/(100	BALL check	1	004	
200	105444*	Model 16X414 (Stainless steel)		224	
	119259†	Model 16X418 (Ceramic)			Q 210
207*+	156593	PACKING, o-ring	1	203	2 19
208*†		V-PACKING, piston, V-MAX,	3		208
200 1	102000	UHMWPE, blue	U		218
210	287877	VALVE, piston	1		
210	20/0//		1		
212	239922	KIT, seat, carbide Model 16X414,			
	239922				
	044574	includes 214, 215, 227			<u></u> 217
	244571	Model 16X418			U
		includes 214, 227			216
213		VALVE, intake (foot)	1	204-0	229
	15C785	Model 16X414		204	<u> </u>
	287878	Model 16X418			c206
214		BALL, check, inlet	1	222 —	A
	105445*	Model 16X414 (Stainless steel)			
	111453†	Model 16X418 (Ceramic)			210
	102972	Model 16X418 (Stainless steel)			
215		GUIDE, ball	1		()-231
	192624	Model 16X414		205	
0 4 0 ± 4	196967	Model 16X418			
	118503	WIPER, piston	1		-232
	178969	GLAND, female, piston	1		
	178939	V-PACKING, leather, piston	2		
	196880	GLAND, male, piston	1		215
220	248209	SLEEVE, cylinder	1		213
	108526	O-RING, ptfe	1		C214
222	401/404	ROD, piston	1		0 211
	16X434	Model 16X414		207	<u></u> 212
000*+	16X440	Model 16X418	0		•
	178940	V-PACKING, leather, throat	2		— 227
	15C988	GLAND, female, throat	1	221	
227	107070*	O-RING, ptfe	1		
	107079*	Model 16X414			
000*+	108526†	Model 16X418			
228*†	158776	O-RING	1		-213
229*†		WASHER, backup	 	220 *	
230*	118494	O-RING, fluoroelastomer	I		
0011	407000	(Model 16X414)			
231†	107098	O-RING (Model 16X418 only)	1		<u> </u>
232	15G494	SPACER, sleeve	1	(Not an	
		(Model 16X418 only)		O-ring groove)	100511-
					ti23511a

* These parts are also included in Repair Kit 248212, which may be purchased separately.

† These parts are also included in Repair Kit 24V063, which may be purchased separately.

Parts - Pump 16X420, 16Y599

			Qty			、
Ref.	Part	Description			(-+
201*†	183171	SEAL, throat	1	201-0	İ	222
202	193032	NUT, packing	1			
203*†	193124	V-PACKING, throat, V-Max,	4	202		
204*†	15C989	UHMWPE, blue GLAND, male, throat	1			<u></u> 219
205	100000	CYLINDER, pump	1			
	16X452	Model 16X420	-	228—	218	208
	16X461	Model 16Y599			210	8///
206		BALL, check	1	224		$\mathbf{VO}//$
	101947*	Model 16X420 (Stainless steel)				\mathbb{Q}
207	116327†	Model 16Y599 (Ceramic) PACKING, o-ring	1	203		
207	156633*†	⁻ Model 16X420, 16Y599	'			
208*†	128779	V-PACKING, piston, UHMWPE, blue	4			O 217
		Model 16X420, 16Y599			223	©206
210	24U993	VALVE, piston	1			O 216
212	044400	KIT, seat, carbide	1		' 	
	244199 244571	Model 16X420 <i>includes 214, 227</i> Model 16Y599 <i>includes 214, 227</i>				O 229
213	244071	VALVE, intake (foot)	1			2 10
	15E654	Model 16X420				210
	196753	Model 16Y599				
214	4000701	BALL, check, inlet	1	204	ĺ	— 221
	102972*	Model 16X420 (Stainless steel)				<u> </u>
215	111453†	Model 16Y599 (Ceramic) GUIDE, ball	1	202		
210	193027	Model 16X420		222		232
	196967	Model 16Y599				
216*†	118504	WIPER, piston	1			
217*†	183185	GLAND, female, piston	1			@ 233
218*†	128296	V-PACKING, brown poly seal Model 16X420, 16Y599	3	205 —		(FR)
219*†	183178	GLAND, male, piston	1			215
220	100170	SLEEVE, cylinder	1		1	
	257031	Model 16X420, 16Y599				214
221*†	107098	O-RING, ptfe	2			<u></u> 212
222	101/100	ROD, piston	1			$\overline{\mathbf{a}}$
	16X436 16X441	Model 16X420 Model 16Y599				<u> </u>
223*†	183175	V-PACKING, leather, throat	3			
224*†	15C990	GLAND, female, throat	1		! 6	
227		O-RING, ptfe	1	207 — ()		
	108526*/	Model 16X420, 16Y599				
228*†	C20987	O-RING	1	221————————————————————————————————————		213
229* <i>†</i> 230*	15C998 118494	WASHER, backup O-RING, fluoroelastomer	1			
200	110494	(Model 16X419, 16X420 only)	I			O 220
						\bigcirc —230
		also included in Repair Kit 17K162 (sta	in-	220 ——	/(Not an O-rin	g groove)
		which may be purchased separately.				00/
•		also included in Repair Kit 17K475 (cer	amic			
DallS)	, which ma	y be purchased separately.		l)	ti23510a
				×		

Parts - Pump 16X419, 16X421, 16Y602

2017 #s 183171 SEAL, throat 1 2027 #s 193124 V-PACKING, throat 1 2037 #s 193124 V-PACKING, throat 1 2037 #s 193124 V-PACKING, throat 1 2037 #s 193124 V-PACKING, throat 1 2047 #s 156639 CLAND, male, throat 1 205 10041 (55419) Kinines site() 1 116327/#s Model (15421) 1 228 206 116327/#s Model (15421) 1 207 FACKING, oring 228 203 208 Model (15421) 1 224 203 207 FACKING, platon, V-MAX, ULVE, platon 1 224 203 208 Model (15421) 1 204 223 216 212 244571 Model (15421) 214, 227, 233 1 204 222 216 214 BALL, check, inite 1 1 204 222 221 221 221 221 221 221 221 221 221	Ref.	Part	Description	Qty.		()
203* ## 193124 V-PACKING_throat, V-Max, 4 201 202 204* ## 150389 GLAND, male, throat 1 202 203 205 16X451 Model 16X419 1 202 206 110147* Model 16X421 1 202 208 206 10147* Model 16X421 1 202 208 206 10147* Model 16X421 126 218 218 207 156337.4 Model 16X421 126 223 218 217 208 19825 V-PACKING, bring 1 203 224 208 217 210 244199 Model 16X419 1 203 2217 206 217 212 244199 Model 16X419 11 204 223 216 2210 2212 2210 2210 2216 2210 2210 2210 2211 2212 2210 2212 2210 2211 2212 2211 2212 2210 2211 2212 2211 2212 2211 2212 2211	201* <i>†</i> *	183171	SEAL, throat	1		
2037 Fite 193124 V-PACKING, throat, V-Max, 4 2047 Fite 150989 GLAND, male, throat 1 205 CHLIDBER, pamp 1 202 16583 Fit Model 165421 1 228 206 TRASKE 1 228 228 207 Model 165421 1566337 Model 165421 1566337 208 Model 165419 165627+ Model 165419 116527+ 1165827+ Model 165419 1566337 Model 165421 1566337 208 Fite 19325 V-PACKING, pitch 1 224 203 2217 208 V-PACKING, pitch 1 203 222 2217 206 212 VALVE, piston 1 1 204 222 2217 206 214199 Model 165421 165633 Model 165421 227 2216 2217 2206 214194 Model 165421 1657 Model 165421 227 2210 2212 2210 22110 2214 22110 22110 22110 2212 22110 <td>202</td> <td>193032</td> <td>NUT, packing</td> <td>1</td> <td>201</td> <td>222</td>	202	193032	NUT, packing	1	201	222
2047 # 150989 GLAND, male, throat 1 202 203 219 205 CVLINDER, pump 1 202 208 219 206 TA333 Model 15X419 228 228 219 207 T65837 /m Model 15X421 16Y602 228 224 208 218 228 207 T65837 /m Model 15X419 1 224 203 2219 208 208 T65837 /m Model 15X421 16Y602 (Caramic) 1 203 2223 217 206 210 244199 Model 15X419 (Includes 214, 227 24457 168634 (Model 15X419 (Includes 214, 227 24457 168637 (Model 15X419 (Includes 214, 227 24457 244571 (Model 15X421 (Includes 214, 227 244571 244571 244571 25	203* <i>†</i> *	193124	V-PACKING, throat, V-Max,	4		
205 Texts T Model TeXt419 16K457 Model TeXt419 16K457 Model TeXt419 16K457 Model TeXt421 1019477 Model TeXt421 11652774 Model TeXt421 206 PACKING, ering 1207 PACKING, ering 1208 Model TeXt421, 16Y602 (Ceramic) PACKING, bring 1 208 Model TeXt421, 16Y602 (Ceramic) 208 Model TeXt421, 16Y602 modes 214, 227 244199 Model TeXt421, 16Y602 modes 214, 227 2444194 Model TeXt421 modes 214, 227 2444194 Model TeXt421 modes 214, 227 244195 Model TeXt421 modes 214, 227 244194 Model TeXt419 (Stainless steel) 1 1114557 Model TeXt419 (Stainless steel) 1 1217 TeXt419 (Stainless steel) 1 1114557 Model TeXt419 (Stainless steel) 1 1114557 Model TeXt419 (Stainless steel) 1 1217 TeXt419 (Stainless steel) 1 1114557 Model TeXt419 (Stainless steel) 1 1114557 Model TeXt42			UHMWPE, blue			
205 CVLINUER, pump 1 105X451 Model 16X439 219 206 TX33 Model 16X421 101147* Model 16X421 228 207 116327* Model 16X421 116327* Model 16X421 228 208 76633* Model 16X421 207 16633* Model 16X421 208 VALVE, piston 1 210 24093 VALVE, piston 1 211 E6634* Model 16X421 203 210 24093 VALVE, piston 1 244199 Model 16X421 1 204 244571 Model 16X421 1 204 1165654 Model 16X421 1 204 122 Model 16X421 1 204 214 E330 Model 16X421 1 1114537 Model 16X421 1 204 222 214 E333 Model 16X421 1 204 222 231 1114537 Model 16X421 16X421 1 204		15C989			202	
15X457 Model 16X421 101947 Model 16X421 1158277# Model 16X419 116327# Model 16X421 207 FACKING.oring 116327# Model 16X421 116327# Model 16X421 116327# Model 16X421 120 244199 244199 Model 16X421 1212 244199 24419 Model 16X421 116625 Model 16X421 116625 Model 16X421 1212 244199 244199 Model 16X421 116625 Model 16X421 1166264 Model 16X421 116625 Model 16X421 1116622 Model 16X419 1116602 Model 16X421 1116602 Model 16X421 1116602 Model 16X421 1116602 Model 16X419 1116602 Model 16X419 1116602 Model 16X421 1116602 Model 16X421 1116602 Model 16X421 1116602 Model 16X421 1111602 Mo	205		· · ·	1	202	0 210
17A033 Model 16Y602 228 228 218 206 101947* Model 16X49 [Stainless steel) 1 224 224 218 218 206 207 B277* Model 16X49 [Stainless steel) 1 224 203 217 206176 193125 V-PACKINS, prince 1 203 223 217 0 217 210 24093 VALVE, piston 1 203 0 2217 0 2217 210 24499 Model 16X49 [notuces 214, 227 234 0 0 216 244571 Model 16X49 [notuces 214, 227, 233 1 0 0 2216 0 2216 1145024 Model 16X49 [Notuces 214, 227, 233 1 0 0 2216 2210 22116 2210 22116 2210 22116 22116 22116 22116 2211 22116 22116 22116 22116 2211 2211 22116 22116 22116 22116 22116 22116 22116 22116 2211 22116 22116 22116						219
206 17.40.3 Made 10.40.4 1 206 101947 Bodde 105X49 (Stainless steel) 1 224 207 1566337 Model 165X49 (Stainless steel) 1 203 208 7/8 193125 V-PACKING, ering 203 209 7/8 193125 V-PACKING, iston, V-MAX, UHWWEE, blue 203 223 212 244199 Model 16X49 includes 214, 227 244013 0 2216 214 15654 Model 16X49 includes 214, 227 244013 0 222 24199 Model 16X49 includes 214, 227 244013 0 222 2210 14333 Model 16X49 includes 214, 227 233 224 0 222 2210 15654 Model 16X49 includes 214, 227 233 224 0 2211 2211 2211 2211 2211 2211 2211 2211 2211 2211 222 2211 222 2231 2211 222 2232 2232 2232 2232 2232 2232 2232 2232 2232 2215 2215 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>$\bigcirc 208$</td></t<>						$\bigcirc 208$
206 101947 Model 16X419 (Stainless steel) 1 207 PACKING, oring 1 208 PACKING, oring 1 208 V-RACKING, oring 1 209 204 203 201 24199 VALVE, piston 1 212 2419 Model 16X419 (Stainless steel) 1 212 2419 Model 16X419 (notides 214, 227) 2419 2419 Model 16X429 (notides 214, 227) 2416 2417 116E65 Model 16X429 (notides 214, 227) 2416 204 222 213 1566537 Model 16X429 (notides 214, 227) 233 216 214 116656 Model 16X429 (notides 214, 227) 233 204 222 210 1114337 Model 16X429 (stainless steel) 1 204 222 231 116626 Model 16X419 (stainless steel) 1 204 222 233 216*76 Model 16X421 (coranic) 1 204 222 233 216*76 Model 16X421 (stainless steel) 1 205 242 233		17A033			228 — 💭	
116327/8/ Model 16X421, 16Y602 (Ceramic) 207 FACKING, oring 1 1606337 Model 16X419, 16X421 203 2087/8/193125 V-PACKING, piston, V-MAX, UHMWPE, blue 1 210 244199 Wodel 16X419, includes 214, 227 244199 Model 16X419 1 212 244199 Model 16X419 213 VALVE, piston 1 1169753 Model 16X421 222, 233 214 BALL, check, inlet 1 196753 Model 16X421 222, 233 214 BALL, check, inlet 1 118602# Model 16X421 204 118602# Model 16X421 204 214 BALL, check, inlet 1 118602# Model 16X421 204 118602# Model 16X421 204 217 BALL, check, inlet 1 118602# Model 16X421 1 118602# Model 16X421 1 118602# Model 16X421 1 119802# Model 16X421 1 1217#	206			1		
207 PACKING, oring 1 156637 F Model 16X19, 16X21 1 160325% Model 16X19, 16X42 1 210 24U93 VALVE, piston 1 211 24199 Model 16X19, 16Udas 214, 227 1 212 244191 Model 16X412 1 244199 Model 16X412 1 1 2417 244571 Model 16X412 227 2413 Model 16X412 1 204 2 2413 Model 16X412 1 204 2 2419 Model 16X419 1 204 2 216 213 VALVE, intake (not) 1 204 2 210 214 BALL, check, inlet 1 204 2 221 118602* Model 16X42 1 204 2 232 215 GUIDE, ball 1 204 2 233 216*7* 11856 GLAND, female, piston 1 2 2 2 2 2 2 2 2 2 2					224 - 0	
156633 */ Model 16X419, 16X421 203 <		11632 <i>1†</i> *				
160225% Model 16Y602 1 208"7% 193125	207	450000*/		1	203	
208*/fe 193125 V-PACKING, piston, V-MAX, UHIMWPE, blue 4 210 241993 VALVE, piston 1 211 244199 Model 16X419 1 244190 Model 16X421 1 2223 213 2410013 Model 16X419 1 15E654 Model 16X419 1 204 15E654 Model 16X419 1 204 1114537 Model 16X419 1 204 1128727 Model 16X421 1 204 1114537 Model 16X421 1 204 1102972 Model 16X421 1 204 1114537 Model 16X622 2232 233 215 GUIDE, ball 1 205 205 119767 183165 GLAND, leanler, piston 1 205 2219767 15376 GLAND, male, piston 1 207 2114					200	
UHMWPE, blue 1 24U93 VALVE, piston 1 212 244199 Model 18X419 includes 214, 227 206 244191 Model 18X421 includes 214, 227 230 216 244191 Model 18X421 includes 214, 227 233 213 VALVE, instake (foot) 1 206 2223 213 VALVE, instake (foot) 1 1 204 229 210 2223 214 196753 Model 18X419 (Stainless steel) 1 204 222 2210 2231 214 114854 Model 18X419 (Caramic) 1 204 222 231 232 2331 215 GUIDE, ball 1 204 222 2331 232 2331 2332 2331 2				1		
210 24U993 VALVE, piton 1 212 24199 KIT, seat, carbide 1 244199 Model 16X419 includes 214, 227 244571 Model 16X421 includes 214, 227 244371 Model 16X421 includes 214, 227, 233 1 223 216 213 VALVE, initake (foot) 1 204 221 216 15E554 Model 16X421 227, 233 210 222 210 15E554 Model 16X421 224 224 222 221 221 102727 Model 16X419 (Stainless steel) 1 204 222 231 1114537 Model 16X421 (Ceramic) 222 222 232 232 107167 Model 16X419, 16X420 1 224 222 233 215 GUIDE, ball 1 205 245 215 221	208 /*	193125		4		0217
212 KIT, seat, carbide 1 244199 Model 16X419 includes 214, 227 244571 244571 Model 16X421 includes 214, 227 23 213 VALVE, induces 214, 227, 233 1 15E654 Model 16X419 1 196753 Model 16X421 1 114547 Model 16X419 1 11453 Model 16X419 1 114547 Model 16X421 (cramic) 1 1148028 Model 16X419 (Stainless steel) 1 1148028 Model 16X421, (cramic) 1 1148028 Model 16X421, (cramic) 1 118028 Model 16X421, (cramic) 1 118028 Model 16X421, 16Y599 1 118029 Model 16X421, 16Y599 1 118020 WIPER, piston 1 218*7#<18239	210	241 1993		1		
244199 Model 16X419 includes 214, 227 244013 Model 16X421 includes 214, 227, 233 213 VALVE, intake (foot) 1 15E654 Model 16X419 196753 Model 16X421 102972* Model 16X419 (Stainless steel) 1114637 Model 16X421 (Ceramic) 1114637 Model 16X421 (Ceramic) 118024* Model 16X421 (Ceramic) 118024* Model 16X421 (Stainless steel) 215 GUIDE, ball 118024* Model 16X421, 16Y599 16M658 Model 16X421, 16Y599 16M658 Model 16X421, 16Y599 171*# 183175 183175 GLAND, female, piston 218*7# 183175 107098 O-RING, ptfe 1 207 224*17# 107098 10824* Model 16X421, 16Y602 223*7#8 16X435 10844 Model 16X419, 16X421, 16Y602 22		240000				200
244571 Model 16K421 includes 214, 227, 233 213 VALVE, intake (foot) 1 15E654 Model 16K401 1 196753 Model 16K402 1 114 D2972* Model 16K419 1 114602* Model 16K419 1 204 114602* Model 16K419 1 204 114602* Model 16K421 1 204 114602* Model 16K620 222 231 215 GUIDE, ball 1 222 233 216*7* 118504 WIPER, piston 1 205 215 218*7* 158290* PACKING, leather, piston 1 205 215 215 221*7* 10804 16K419, 16X421, 16Y602 2 217 217 217 221 227 214 221*7* 108526*7 Model 16K419, 16X421 1 207 221 2		244199		•		216
24N013 Model 16/602 includes 214, 227, 233 213 VALVE, intake (foot) 1 15E654 Model 16X419 1 15A303 Model 16K421 204 1114537 Model 16K420 (Ceramic) 1 1114537 Model 16K421 (Ceramic) 1 1114537 Model 16K421 (Ceramic) 222 1114537 Model 16K421 (Ceramic) 222 11802* Model 16K420 (Ceramic) 222 107167 Model 16K419, 15X420 205 195967 Model 16K419, 15X420 205 195967 Model 16K421, 16Y599 205 177 #* 181505 GLAND, female, piston 1 216 * #* 18529 V-PACKING, leather, piston 1 221 * #* 18155 UAND, female, piston 1 221 * #* 10798 O-RING, pite 1 221 * #* 10798 GLAND, female, throat 3 221* 7#* 15C990 GLAND, female, throat 1 1070988 Model 16X419, 16X421 1 1070988 Model 16X419, 16X421 207 221* 7#* 15C990 GLAND, female, throat 1						-
213 VALVE, intake (foot) 1 15EE54 Model 16X419 1 196753 Model 16X421 204 114 102972* Model 16X419 (Stainless steel) 204 1114537 Model 16X419 (Ceramic) 222 1114537 Model 16X410 (Ceramic) 222 1114537 Model 16X419 (Stainless steel) 222 215 GUIDE, ball 1 199675 Model 16X419, 16X420 222 199676 Model 16X419, 16X420 205 199677 Model 16X419, 16X420 205 216*74* 18504 WIPER, piston 1 219*74* 183176 GLAND, male, piston 1 219*74* 183176 GLAND, male, piston 1 220 CHING, pife 2 2 100826*7 Model 16X419, 16X421, 16Y602 2 2 223*74* 15C999 GLAND, male, piston 1 224*75* 10040e1 16X419, 16X421 2 2 107088* Model 16Y602 2 2 223*7*8* 15C9999 GLAND,						229
15E654 Model 16X419 196753 Model 16Y602 214 BALL, check, inlet 102972 Model 16X421 1114537 Model 16X421 (Ceramic) 1114637 Model 16X421 (Ceramic) 118602* Model 16X421 (Ceramic) 118602* Model 16X421 (Ceramic) 1193027 Model 16X420 (Ceramic) 199097 Model 16X421, 16Y599 16M658 Model 16X421, 16Y599 16M658 Model 16X421, 16Y599 16M658 Model 16X421, 16Y599 16M658 Model 16X421, 16Y602 217 7* 183175 218 7* 15239 219 7* 183175 GLAND, male, piston 1 1 205 222 RDCD, piston 1 1 222 ROLD, piston 1 1 16X435 Model 16X419, 16X421, 16Y602 223 7# 183175 107098* Model 16Y602 228*7 C20887 108526*7 Model 16Y602 228*7 C20887 <	213			1		
196753 Model 16X421 15A303 Model 16X419 102972* Model 16X419 (Stainless steel) 1114537 Model 16X412 (Caramic) 1114537 Model 16X412 (Caramic) 1114537 Model 16X420 (Stainless steel) 1114537 Model 16X419, 16X420 199667 Model 16X419, 16X421, 16Y509 16M658 Model 16X19, 16X421, 16Y602 216*7# 183185 GLAND, temale, piston 1 219*7# 18376 V-PACKING, leather, piston 1 220 ROD, piston 1 221*7# 18376 16X435 Model 16X419, 16X421, 16Y602 2 223*7# 16X435 Model 16X419, 16X421 207 223*7# 16X435 Model 16X419, 16X421 207 22457 O-RING, pite 1 207 221 223*7 I6X435<		15E654				210
214 BALL_check, inlet 1 204 221 1114537 Model 16X419 (Stainless steel) 221 231 1114637 Model 16X419 (Ceramic) 222 231 1114637 Model 16X419 (Ceramic) 222 231 1114637 Model 16X419 (Stainless steel) 222 231 215 GUIDE, ball 1 232 233 19667 Model 16X421, 16X420 223 205 233 216*#* 118504 WIPER, piston 1 205 215 215 217*#* 183178 GLAND, memale, piston 1 205 215 214 215 215 215 215 221 215 221 214 221 215 221 215 221 214 221 215 221 214 221 215 221 214 221 214 221 215 221 221 221 215 221 221 221 221 221 221 221 221 221 221 221 221 221 221		196753	Model 16X421			
102972* Model 16X419 (Stainless steel) 1114537 Model 16Y602 (Ceramic) 107167 Model 16Y602 (Stainless steel) 107167 Model 16Y602 (Stainless steel) 11802* Model 16Y602 (Stainless steel) 119027 Model 16Y602 199367 Model 16Y602 199367 Model 16Y602 199367 Model 16Y602 216*/** 11850* 19937 Model 16Y602 216*/** 11850* 217*/** 183185 GLAND, female, piston 1 218*/** 158329 220 SLEEVE, cylinder 221*/** 183175 222 ROD, piston 1 1046116X419, 16X421, 16Y602 222* ROD, piston 1 0-RING, pife 224* 15C990 0-RING, pife 1 220* CaND, finale, throat 108526*/r Model 16X419, 16X421 107098* Model 16X419, 16X421 107098* Model 16X421, 16Y602 229*/* 118494 107098		15A303	Model 16Y602			
102972* Model 16X419 (Stainless steel) 1114537 Model 16Y602 (Ceramic) 118602* Model 16Y602 (Stainless steel) 107167 Model 16Y602 (Stainless steel) 193027 Model 16X419, 16X420 199667 Model 16X419, 16X420 199667 Model 16Y602 216*/** 1183185 GLAND, female, piston 1 217*/** 1583185 GLAND, female, piston 1 219*/** 183178 GLAND, female, piston 1 220 SLEEVE, cylinder 221*/** 183178 GLAND, female, piston 1 220 SLEEVE, cylinder 221*/** 107098 Model 16X419, 16X421, 16Y602 2 222* FroD, piston 1 108526*/* Model 16X421, 16Y602 2 223*/** 15C390 GLAND, female, throat 3 224*/** 15C390 GLAND, female, throat 1 227 108526*/* Model 16X419, 16X421 207 108526*/* Model 16X419, 16X421 207	214		BALL, check, inlet	1	204	-221
118602* Model 16Y602 (Canalics steel) 222 232 193027 Model 16Y602 (Stainless steel) 1 193027 Model 16X419, 16X420 1 196967 Model 16X419, 16X420 1 196967 Model 16X421, 16Y599 205 216 '#* 118562 WIPER, piston 1 217 '#* 183185 GLAND, female, piston 1 218 '#* 155239 V-PACKING, leather, piston 1 220 Z48210 Model 16X421, 16Y602 205 221' '#* 18175 V-PACKING, leather, throat 1 220 ROD, piston 1 207 212 223 '#* 18275 Model 16X419, 16X421 1 108526'f Model 16X419, 16X421 1 207 211 224 '#* 15C990 GLAND, female, throat 1 207 213 228'f C20987 O-RING, pite 1 207 221 230 228'f 15C990 WASHER, backup 1 207 221 230 231* 231* 108822						
107167 Model 16Y602 (Stainless steel) 222 232 193027 Model 16X419, 16X420 1 196967 Model 16X419, 16X420 233 216* #* 118504 WiPER, piston 1 217* #* 183185 GLAND, female, piston 1 217* #* 185129 ∨-PACKING, leather, piston 1 219* #* 185178 GLAND, male, piston 1 220 V-PACKING, leather, piston 1 205 217* #* 183178 GLAND, male, piston 1 220 SLEEVE, cylinder 1 205 221* #* 107098 O-RING, pite 2 16X435 Model 16X419, 16X421, 16Y602 2 227 223* #* 183175 V-PACKING, leather, throat 3 224* #* 15C990 GLAND, female, throat 3 224* #* 15C990 GLAND, female, throat 3 228* # C20987 O-RING, file 1 230* 118494 O-RING, filoroelastomer 1 230* 118494 O-RING, file/602 only)						231
215 GUIDE, ball 1 193027 Model 16X419, 16X420 1 196967 Model 16X421, 16Y599 0 10/167 WiDER, piston 1 217/7# 183185 GLAND, female, piston 1 217/7# 183185 GLAND, female, piston 1 217/7# 183185 GLAND, male, piston 1 220 ROD, piston 1 205 211/7# 183185 GLAND, male, piston 1 220 ROD, piston 1 205 221/7# 107098 O-RING, pite 2 222 ROD, piston 1 207 223/7# 187/75 165290 GLAND, female, throat 3 224/7# 15C990 GLAND, female, throat 1 207 228/7 C20987 O-RING, pite 1 207 221 228/7 18049 O-RING, fite 1 207 221 230 228/7 Model 16X419, 16X421 1 207 221 230 231 231 230 231					222	
213 GUIDE, Dall 1 193027 Model 16X419, 16X420 1 196067 Model 16X411, 16Y599 1 16M658 Model 16X421, 16Y599 1 216*#* 118504 WIPER, piston 1 217*#* 183178 GLAND, female, piston 1 218 7#* 15329 V-PACKING, leather, piston 1 220 248210 Model 16X419, 16X421, 16Y602 2 221*#* 107098 GLAND, female, piston 1 222 ROD, piston 1 207 212 16X441 Model 16X419, 16X421, 16Y602 2 227 227 16X435 Model 16X419, 16X421 1 207 221 106526*7 Model 16X419, 16X421 1 207 221 221 228* f C20987 O-RING, fu 1 207 221 221 221 229* 7* 15C998 WASHER, backup 1 207 221 221 221 220 221 221 221 221 221 221 221 221	015	10/16/				232
196967 Model 16X421, 16Y599 16M658 Model 16Y602 218* ## 118504 217* # 183185 GLAND, female, piston 1 218* ## 15E329 218* ## 15E329 218* ## 15E329 218* ## 15E329 220 SLEEVE, cylinder 221 ROD, piston 222 ROD, piston 16X435 Model 16X419, 16X421, 16Y602 223* ## 183175 V-PACKING, leather, throat 1 223* ## 15C909 GLAND, female, piston 1 16X435 Model 16X421, 16Y602 224* ## 15C909 GLAND, female, throat 1 107098* Model 16X421 107098* Model 16Y602 228* # C20987 V-RING, ptfe 1 1230* 118494 V-PRING, Intake, backup 1 231* 108822 O-RING (Model 16Y602 only) 231* 108822 O-RING (Model 16Y602 only) 1 232** <td>215</td> <td>102027</td> <td></td> <td>1</td> <td></td> <td></td>	215	102027		1		
16M658 Model 16Y602 213 216* 7# 118504 WIPER, piston 1 217* 7# 183185 GLAND, female, piston 1 218* 7# 15E329 V-PACKING, leather, piston 3 219* 7# 183185 GLAND, male, piston 1 200 SLEEVE, cylinder 1 248210 Model 16X419, 16X421, 16Y602 2 221* 7# 107098 O-RING, ptfe 2 222 ROD, piston 1 2 16X431 Model 16X419, 16Y602 2 223* 7# 185290 C-RING, ptfe 2 224* 7# 15C990 GLAND, female, throat 3 227* O-RING, ptfe 1 207 228* 7 C20987 O-RING 1 207 211 207 221 211* 108526*7 Model 16X419, n6X421 1 107098* MASHER, backup 1 220 (Not an O-ring groove) 231* 108494 O-RING (Model 16Y602 only) 1 220 (Not an O-ring groove) 232						
216* f* 118504 WIPER, piston 1 205 217 218* f* 15E329 V-PACKING, leather, piston 1 205 214 215 219* f* 183178 GLAND, male, piston 1 205 214						233
217* #* 183185 GLAND, female, piston 1 210* 211* 215 215 218* #* 15E329 V-PACKING, leather, piston 1 216 211* 211* 211* 211* 211* 211* 211* 211* 211* 211* 183178 GLAND, male, piston 1 211* 21	216* <i>†</i> *			1	205	
218*7* 15E329 V-PACKING, leather, piston 3 219*7* 183178 GLAND, male, piston 1 220 SLEEVE, cylinder 1 248210 Model 16X419, 16X421, 16Y602 2 221*7* 107098 O-RING, ptfe 2 ROD, piston 1 2 16X435 Model 16X419 1 16X441 Model 16X421, 16Y602 2 223*7* 183175 V-PACKING, leather, throat 3 108526*7 Model 16X419, 16X421 1 108526*7 Model 16X419, 16X421 1 107098* Model 16X419, 16X421 2 107098* Model 16X419, 16X421 2 107098* Model 16X419, 16X421 2 107098* Model 16X419 only) 1 230* 118494 O-RING, fluoroelastomer 1 1230* 118494 O-RING (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 233 24E027					205	
219*7* 183178 GLAND, male, piston 1 220 SLEEVE, cylinder 1 248210 Model 16X419, 16X421, 16Y602 2 221*7* 107098 O-RING, ptfe 2 16X435 Model 16X419, 16Y602 2 223*7* 183175 V-PACKING, leather, throat 3 224*7* 15C990 GLAND, female, throat 1 227 O-RING, ptfe 1 207 108526*7 Model 16X419, 16X421 1 207 107098* Model 16Y602 221 221 230* 118494 O-RING, filtoroelastomer 1 (Model 16X419 only) 1 220 (Not an O-ring groove) 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1225108 <td></td> <td></td> <td></td> <td>3</td> <td></td> <td>215</td>				3		215
220 SLEEVE, cylinder 1 0 214 248210 Model 16X419, 16X421, 16Y602 2 212 212 221* f* 107098 O-RING, ptfe 2 212 16X435 Model 16X419 1 0 212 16X435 Model 16X421, 16Y602 2 227 16X441 Model 16X421, 16Y602 2 227 223* f* 183175 V-PACKING, leather, throat 3 224* f* 15C990 GLAND, female, throat 1 0-RING, ptfe 1 207 221 108526* f Model 16Y602 221 221 230* 118494 O-RING, fluoroelastomer 1 (Model 16X419 only) 1 220 (Not an O-ring groove) 231* 108822 O-RING (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 220 (Not an O-ring groove) <td>219*<i>†</i>*</td> <td>183178</td> <td>GLAND, male, piston</td> <td>1</td> <td></td> <td></td>	219* <i>†</i> *	183178	GLAND, male, piston	1		
221* #* 107098 O-RING, ptfe 2 ROD, piston 1 1 1 16X435 Model 16X419 1 1 16X441 Model 16X421, 16Y602 223 223 223* #* 183175 V-PACKING, leather, throat 3 224* #* 15C990 GLAND, female, throat 1 0-RING, ptfe 1 207 221 108526* # Model 16X419, 16X421 207 221 107098* Model 16Y602 221 221 228* # C20987 O-RING, fluoroelastomer 1 107098* Model 16X419 only) 221 221 230* 118494 O-RING, fluoroelastomer 1 1232* 16M291 SPACER, sleeve (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 123510a	220			1		214
222 ROD, piston 1 212 16X435 Model 16X419 227 16X441 Model 16X421, 16Y602 227 223* f* 183175 V-PACKING, leather, throat 3 224* f* 15C990 GLAND, female, throat 1 0-RING, pife 1 207 221 108526* f Model 16X419, 16X421 207 221 108526* f Model 16X419, 16X421 207 221 108526* f Model 16Y602 221 21 228* f C20987 O-RING, flooroelastomer 1 1230* 118494 O-RING (Model 16Y602 only) 1 231* 108822 O-RING (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1						
16X435 Model 16X419 16X441 Model 16X421, 16Y602 223* 7* 183175 V-PACKING, leather, throat 3 224* 7* 15C990 GLAND, female, throat 1 0-RING, ptfe 1 207 108526* 7 Model 16X419, 16X421 207 107098* Model 16Y602 221 228* 7 C20987 O-RING 129* 7* 15C998 WASHER, backup 1 230* 118494 O-RING, fluoroelastomer 1 (Model 16X419 only) 1 220 (Not an O-ring groove) 231* 108822 O-RING (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1		107098				212
16X441 Model 16X421, 16Y602 223* /* 183175 V-PACKING, leather, throat 3 224* /* 15C990 GLAND, female, throat 1 0-RING, ptfe 1 207 108526* /* Model 16X419, 16X421 207 107098* Model 16Y602 221 228* /* C20987 O-RING 129* /* 15C998 WASHER, backup 1 230* 118494 O-RING, fluoroelastomer 1 (Model 16X419 only) 1 220 (Not an O-ring groove) 231* 108822 O-RING (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1	222			1		
223* †* 183175 V-PACKING, leather, throat 3 224* †* 15C990 GLAND, female, throat 1 0-RING, ptfe 1 207 108526* f Model 16X419, 16X421 207 107098* Model 16Y602 221 228* f C20987 O-RING 230* 118494 O-RING, fluoroelastomer 1 (Model 16X419 only) 1 220 (Not an O-ring groove) 231* 108822 O-RING (Model 16Y602 only) 1 232* 16M291 SPACER, sleeve (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1 1						227
224*7* 15C990 GLAND, female, throat 1 227 O-RING, ptfe 1 108526*7 Model 16X419, 16X421 207 107098* Model 16Y602 221 228*7 C20987 O-RING 230* 118494 O-RING, flucroelastomer 1 230* 118494 O-RING (Model 16Y602 only) 1 231* 108822 O-RING (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1	000*++*			0		
227 O-RING, ptfe 1 207 21 108526*f Model 16X419, 16X421 1 207 21 107098* Model 16Y602 221 213 228*f C20987 O-RING 1 207 213 229*f* 15C998 WASHER, backup 1 221 213 213 230* 118494 O-RING, fluoroelastomer 1 207 221 213 230* 118494 O-RING (Model 16Y602 only) 1 220 (Not an O-ring groove) 231* 108822 O-RING (Model 16Y602 only) 1 220 (Not an O-ring groove) * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1 1 1						
108526*f Model 16X419, 16X421 107098* Model 16Y602 228*f C20987 O-RING 229*f* 15C998 WASHER, backup 1 230* 118494 O-RING, fluoroelastomer 1 (Model 16X419 only) 1 0 0 231* 108822 O-RING (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1 220 (Not an O-ring groove)		150990			207	
107098* Model 16Y602 221 213 228* f C20987 O-RING 1 229* f* 15C998 WASHER, backup 1 230* 118494 O-RING, fluoroelastomer 1 230* 118494 O-RING (Model 16Y602 only) 1 231* 108822 O-RING (Model 16Y602 only) 1 232* 16M291 SPACER, sleeve (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1	221	108526*+		I	207	
228*f C20987 O-RING 1 229*f* 15C998 WASHER, backup 1 230* 118494 O-RING, fluoroelastomer 1 (Model 16X419 only) 1 0 0 231* 108822 O-RING (Model 16Y602 only) 1 232* 16M291 SPACER, sleeve (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 1			Model 16Y602		221	
229*7* 15C998 WASHER, backup 1 230* 118494 O-RING, fluoroelastomer 1 231* 108822 O-RING (Model 16Y602 only) 1 232* 16M291 SPACER, sleeve (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. (Not an O-ring groove)	228*†			1		
230* 118494 O-RING, fluoroelastomer 1 (Model 16X419 only) 1 0 231* 108822 O-RING (Model 16Y602 only) 1 232* 16M291 SPACER, sleeve (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. (Not an O-ring groove)						
(Model 16X419 only) 231* 108822 O-RING (Model 16Y602 only) 1 232* 16M291 SPACER, sleeve (Model 16Y602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately.			O-RING, fluoroelastomer			
232* 16M291 SPACER, sleeve (Model 16Ý602 only) 1 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately.						230
233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately.						
 233 24E027 SPRING, intake, ball (Model 16Y602 only) 1 * These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately. 					220 — (Not	an O-ring groove)
balls), which may be purchased separately.	233	24E027	SPRING, intake, ball (Model 16Y602 only	r) 1		
balls), which may be purchased separately.	* These	narte ara ale	o included in Renair Kit 248213 (stainloss	staal		Ì
				31001		1
				oalls),	<u> </u>	v 1123510a

balls), which may be purchased separately.
† These parts are also included in Repair Kit 249189 (ceramic balls), which may be purchased separately.
* These parts are also included in Repair Kit 24M830, which may be purchased separately.

Parts - Pump 16X426, 16X427

			Qty		
Ref. F	Part	Description			
	112590	SEAL, throat	1	_	
	16X768	NUT, packing	1	201-0	\square
203**	193722	V-PACKING, throat, V-Max, UHMWPE, blue	4		222
204**	15G658	GLAND, male, throat	1	202	
205		CYLINDER, pump	1		6
	16X455	Model 16X426		000	
206	16X460	Model 16X427 BALL, check	1	228	
	107203*	Model 16X426 (Stainless steel)	I		219
	118601*	Model 16X427 (Ceramic)		224	218 🔍 208
	160325	PACKING, o-ring	1	\bigcirc	
208** 1	193722	V-PACKING, piston, V-MAX,	4		
210 2	249177	UHMWPE, blue VALVE, piston	1		223
210 2		KIT, seat, carbide	1	203	\land
	240918	Model 16X426 includes 214, 227			
		(stainless steel check ball)			
1	16X467	Model 16X426 <i>includes 214, 227, 233</i>			Õ
2	24N013	(ceramic check ball) Model 16X427, <i>includes 214, 227,</i>			
2		233		A	217
213		VALVE, intake (foot)	1		C206
	15E655	Model 16X426		204 — 🥑	216
214	15A303	Model 16X427 BALL, check, inlet	1		229
	107167*	Model 16X426 (Stainless steel)			229
	118602*	Model 16X427 (Ceramic)		222	210
215		GUIDE, ball	1		
	198505	Model 16X426			
	193391 119636	Model 16X427 WIPER, piston	1		221
	189588	GLAND, female, piston	i	205	
218		V-PACKING, leather, piston	3		233
		16X426, 16X427			215
219* * 1		GLAND, male, piston	1		213
	249121 108822	SLEEVE, cylinder, MaxLife O-RING, ptfe	1 2		
222	IUUULL	ROD, piston	1		214
1	16X439	Model 16X426	C		
	16X443	Model 16X427		207	212
	112591	V-PACKING, leather, throat GLAND, female, throat	3	207 —	227
	15G657 107098	O-RING, ptfe	1	221	
	156593	O-RING	1	$\sum_{i=1}^{i}$	
	15J800	WASHER, backup	1		
230 1	118494	O-RING, fluoroelastomer	1	-a	213
000		(Model 16X426 only)	1		
233	249770	SPRING, intake, ball Model 16X426	I	000	
	24E027	Model 16X427		220 —	
				19	
		also included in Repair Kit 249123 (stair	1-	Natar	230
iess ste	eei dalls),	which may be purchased separately.		Not an /	

o-ring groove

ti23507b

* These parts are also included in Repair Kit 17A578 (ceramic balls), which may be purchased separately.

Parts - Pump 17N693, 17R044

			Qty		<
Ref.	Part	Description			
201*	183171	SEAL, throat	1	_	
202	193032	NUT, packing	1	201	222
203*	193124	V-PACKING, throat, V-Max,	4		٩
		UHMWPE, blue		000	
204*	15C989	GLAND, male, throat	1	202-0	
205		CYLINDER, pump	1		219
	17N697	Model 17N693 (Maxlife)			218 208
	17R115	Model 17R044 (Chrome)		228	218 208
206		BALL, check	1		
	101947	Stainless steel		224	
	124249*	Ceramic, SI-N		203	
207*	160325	PACKING, o-ring	1	203	
208*	193125	V-PACKING, piston, V-MAX,	4	$\mathbb{N} \setminus \mathbb{Q}$	
		UHMWPE, blue			
210	24U993	VALVE, piston	1		
212	17N703	KIT, seat, carbide includes 214, 227,	1	\\⊖-}223	<u>Ö</u> — 217
		233			
213	17N698	VALVE, intake (foot)	1		C206
214	1700101	BALL, check, inlet	1		<u></u> 216
		Ceramic, SI-N			<u> </u>
045	107167	Stainless steel			
215	16M658	GUIDE, ball		204	210
216*	118504	WIPER, piston	1		
217* 010**	183185	GLAND, female, piston	3		
218* 210*	15E329	V-PACKING, piston, brown	3		221
219≉ 220	183178	GLAND, male, piston SLEEVE, cylinder	1	222	
220	257031	Model 17N693 (Maxlife)	I		
	248210	Model 17R044 (Chrome)			232
221*	107098	O-RING, ptfe	3		231
222	107030	ROD, piston	1		
	16X436	Model 17N693 (Maxlife)		205	233
	17R146	Model 17R044 (Chrome)		205	200
223*	183175	V-PACKING, leather, throat	3		<u>215</u>
224*	15C990	GLAND, female, throat	1		213
228	C20987	O-RING	1		
229*	15C998	WASHER, backup	1		214
231*	108822	O-RING	1		
232*	16M291	SPACER, sleeve	1		212
233	24E027	SPRING, intake, ball	1		
					221
		so included in Repair Kit 17R114 (cera	nmic		
balls Sl	-N), which	may be purchased separately.		207	

213

ti30822a

(Not an O-ring

groove)

220 -

221

Parts - Pump 17N694, 17R042

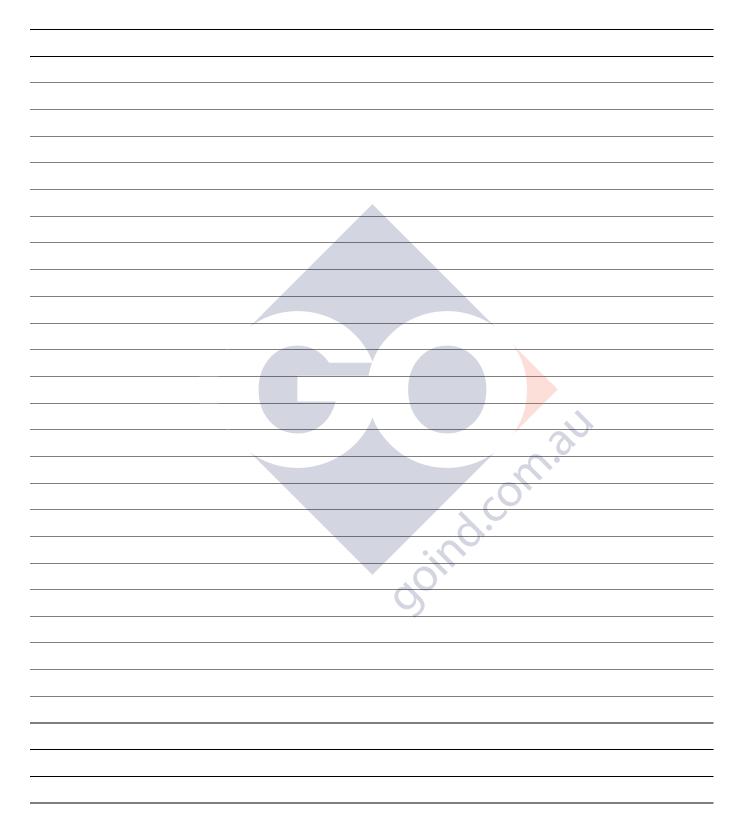
		Qt	V		<
Ref.	Part	Description		(/ \\
201*	112590	SEAL, throat	1 201-	0	h 1
202	16X768	NUT, packing	1	\bigcirc	222
203*	193722	V-PACKING, throat, V-Max,	4 000		
		UHMWPE, blue	202-	R A	219
204≉	15G658	GLAND, male, throat	1		0 213
205		CYLINDER, pump	1 228-		
	17R116	Model 17R042 (Chrome)	220		208
	17N695	Model 17N694 (Maxlife)			218
206		BALL, check	224 —	$-(\bigcirc)$	
		Ceramic SI-N	1		
	107203	Stainless steel(1	$\langle \bigcirc \rangle$	$\setminus O / /$
207*	160325	PACKING, o-ring	1	223	
208*	193722	V-PACKING, piston, V-MAX,	4		
		UHMWPE, blue	203	-0/	
210	249177	VALVE, piston	1		
212	17N703	KIT, seat, carbide <i>includes 214,</i>	1		
010	171000	ceramic SI-N check ball 227, 233	_	$\setminus O$	217
213	17N698	VALVE, intake (foot)	1		
214		BALL, check, inlet	1		<u> </u>
		Ceramic SI-N Stainless steel(1	\bigcirc	
215	107167 193391	GUIDE, ball	1		<u></u> 216
215 216*	119636	WIPER, piston	1 204 -		229
210* 217*	189588	GLAND, female, piston	1		
217**		V-PACKING, piston, brown	3		210
219 *	189585	GLAND, male, piston			210
220	100000	SLEEVE, cylinder, Chrome	1 222 –		
220	248979	Model 17R042 (Chrome)			221
	249121	Model 17N694 (Maxlife)			
221*	108822		2		
222		ROD, piston	1 205 -		233
	17R147	Model 17R042 (Chrome)	203 -		a construction of the second s
	16X439	Model 17N694 (MaxLife)			215
223*	112591	V-PACKING, leather, throat	3		
224*	15G657	GLAND, female, throat	1		\bigcirc
227*	107098	O-RING, ptfe	1		214
228*	156593	O-RING	1		
229*	15J800	WASHER, backup	1	/	212
233	24E027	SPRING, intake, ball	1		
					227
			207		
		e also included in Repair Kit 17R119			
(cera	imic SI-N b	alls), which may be purchased separately.			
			004		
			221 —	0	010
			Not an		213

Not an o-ring groove

220

ti30823a

Notes



Technical Data

	U.S.	Metric		
Maximum Working Pressure	3300 psi	227 bar, 22.7 MPa		
Fluid Inlet Size	1-5/16-12 un(m)	1-5/16-12 un(m)		
Fluid Outlet Size				
16X414, 16X418, 16X419, 16X420, 16X421, 16Y602, 16Y599, 17N693, 17R044	3/8 npt(f)	3/8 npt(f)		
16X426, 16X427, 17N694, 17R042	1/2 npt(f)	1/2 npt(f)		
Wetted Parts	stainless steel, PTFE, leather, nylon, zinc-plated carbon steel, tung- sten carbide, chrome plating, fluoroelastomer, acetal, polyethylene			



Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

Graco Information

For the latest information about Graco products, visit www.graco.com

For patent information, see www.graco.com/patents.

TO PLACE AN ORDER, contact your Graco distributor or call 1-800-690-2894 to identify the nearest distributor.

All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 332922

Graco Headquarters: Minneapolis International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA

Copyright 2014, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.

www.graco.com Revision D -February 2017