

## **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)

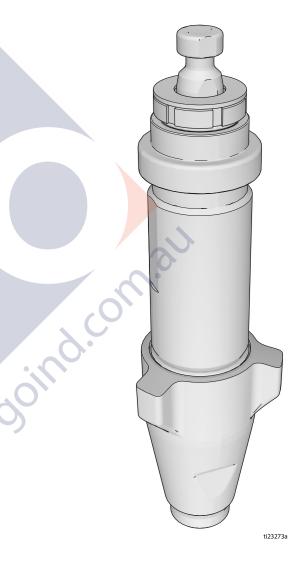
Model 17R042, Series A APX 8200 (Chrome)

#### 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.

<ul> <li>EQUIPMENT MISUSE HAZARD</li> <li>Misuse can cause death or serious injury.</li> <li>Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals.</li> <li>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.</li> <li>Turn off all equipment and follow the Pressure Relief Procedure when equipment is not in use.</li> <li>Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>Use equipment only for its intended purpose. Call your distributor for information.</li> <li>Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.</li> </ul>
<ul> <li>Comply with all applicable safety regulations.</li> <li>MOVING PARTS HAZARD Moving parts can pinch, cut or amputate fingers and other body parts. <ul> <li>Keep clear of moving parts.</li> <li>Do not operate equipment with protective guards or covers removed.</li> <li>Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources. </li> </ul></li></ul>
<ul> <li>SKIN INJECTION HAZARD</li> <li>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.</li> <li>Do not aim the gun at, or spray any person or animal.</li> <li>Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.</li> <li>Always use the nozzle tip guard. Do not spray without nozzle tip guard in place.</li> <li>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.</li> <li>Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.</li> </ul>

### 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.



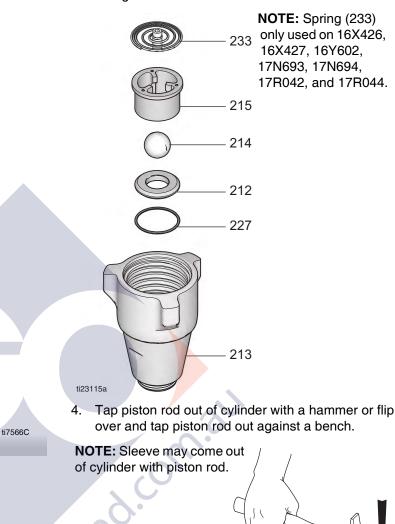
To reduce the risk of serious injury from pressurized fluid, never use sharp or pointed tools to remove sleeve. If the sleeve cannot be removed easily, return the sleeve and cylinder to a Graco distributor for removal.

NOTE: Remove and clean sleeve when repacking pump.

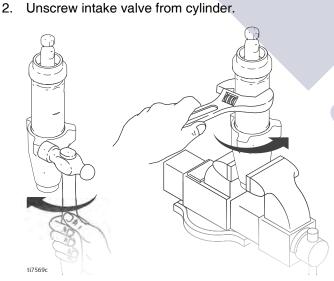
# Repair When Pump is Separated From Sprayer

#### **Disassembling the Pump**

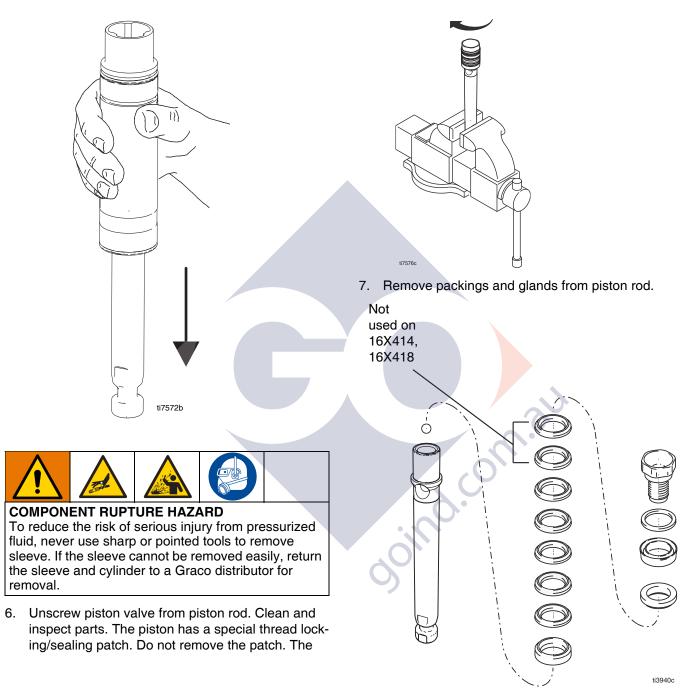
- 1. Remove packing nut (202) and o-ring (228).
- 3. Disassemble intake valve. Clean and inspect o-ring (227). **NOTE:** A pick may be required to remove o-ring.



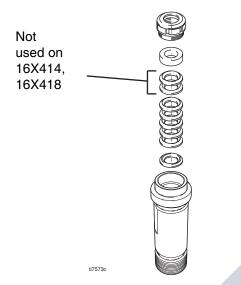
ti7571c



 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.

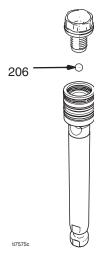


8. Remove throat packings and glands from cylinder. Discard throat packings and glands.



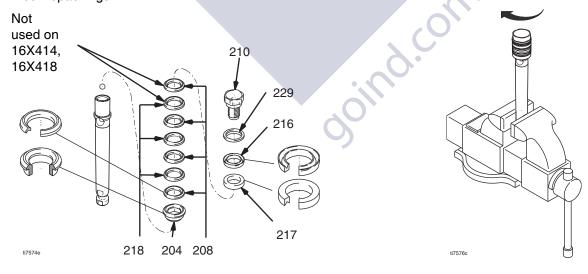
#### **Assembling the Pump**

 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.

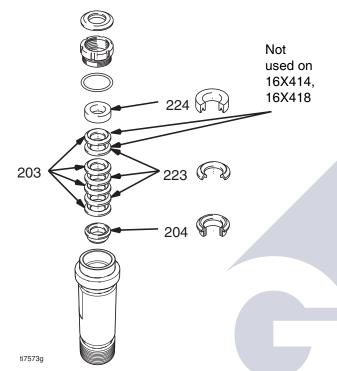


3. Tighten piston valve to piston rod as specified:

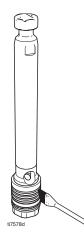
Models	Torque
16X414, 16X418	27 ± 3 ft-lb.
	(36.1 ± 4.1 №m)
16X419, 16X420, <mark>16X</mark> 421,	55 ± 3 ft-lb.
16Y602, 16Y599, <mark>17N6</mark> 93,	(74.6 ± 4.1 №m)
17R044	
16X426, 16X427, 17N694,	100 ± 5 ft-lb.
17R042	(136 ± 7 №m)



 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.



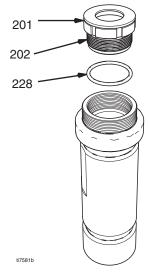
#### NOTICE

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

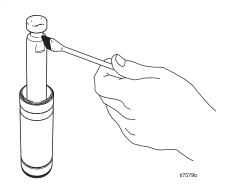
7. Slide piston assembly into bottom of sleeve.



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

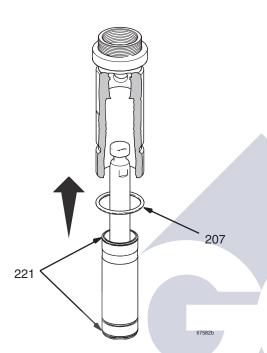


8. Grease top inch or two of piston rod that will go through the cylinder throat packings.

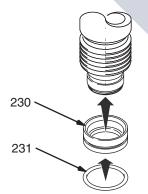


 Grease o-rings (221) and place on sleeve. Slide sleeve/piston rod assembly into bottom of cylinder. Replace o-ring (207) if desired.

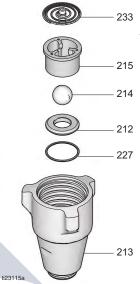
**NOTE:** O-ring (207) is not required for safe pump operation.



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



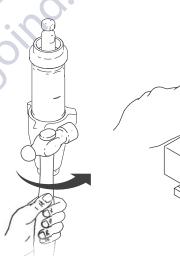
11. Reassemble intake valve with new o-ring (227), seat (212) and ball (214). Seat may be flipped over and used on other side. Clean seat thoroughly.

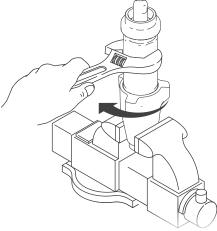


**NOTE:** Spring (233) only used on 16X426, 16X427, 16Y602, 17N693, 17N694, 17R042, and 17R044.

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	



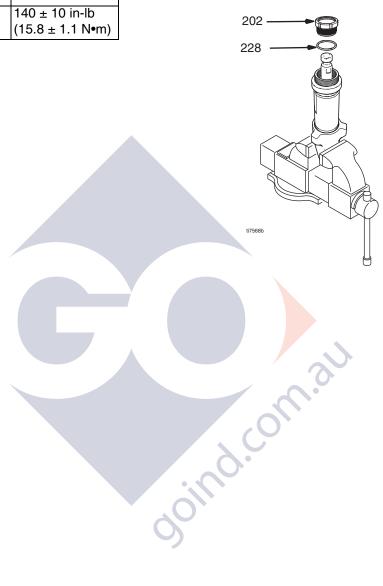


ti7569d

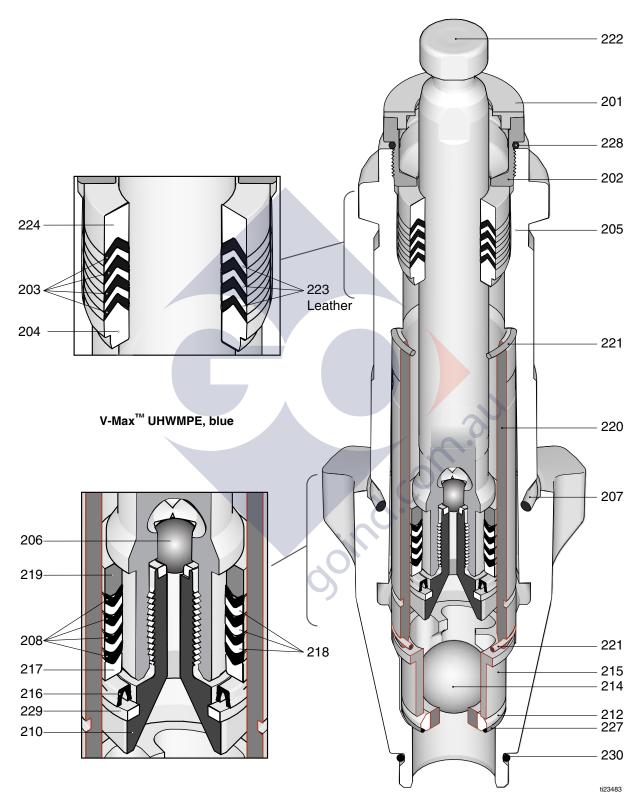
13. Torque packing nut (202) as follows:

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)			<b>Q</b> 210
207*+	156593	PACKING, o-ring	1	203	<b>2</b> 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			<b>U</b>
		includes 214, 227			<b>216</b>
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		<b>—</b> 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*†	<sup>-</sup> Model 16X420, 16Y599	'			
208*†	128779	V-PACKING, piston, UHMWPE, blue	4			<b>O</b> 217
		Model 16X420, 16Y599			223	©206
210	24U993	VALVE, piston	1			<b>O</b> 216
212	044400	KIT, seat, carbide	1		'   	
	244199 244571	Model 16X420 <i>includes 214, 227</i> Model 16Y599 <i>includes 214, 227</i>				<b>O</b> 229
213	244071	VALVE, intake (foot)	1			<b>2</b> 10
	15E654	Model 16X420				210
	196753	Model 16Y599				
214	4000701	BALL, check, inlet	1	204	ĺ	<b>—</b> 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			<b>@</b> 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			<b>O</b> 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><math>\bigcirc 208</math></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.						
<ul> <li>233 24E027 SPRING, intake, ball (Model 16Y602 only) 1</li> <li>* These parts are also included in Repair Kit 248213 (stainless steel balls), which may be purchased separately.</li> </ul>					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 — 🥑	<b>216</b>
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

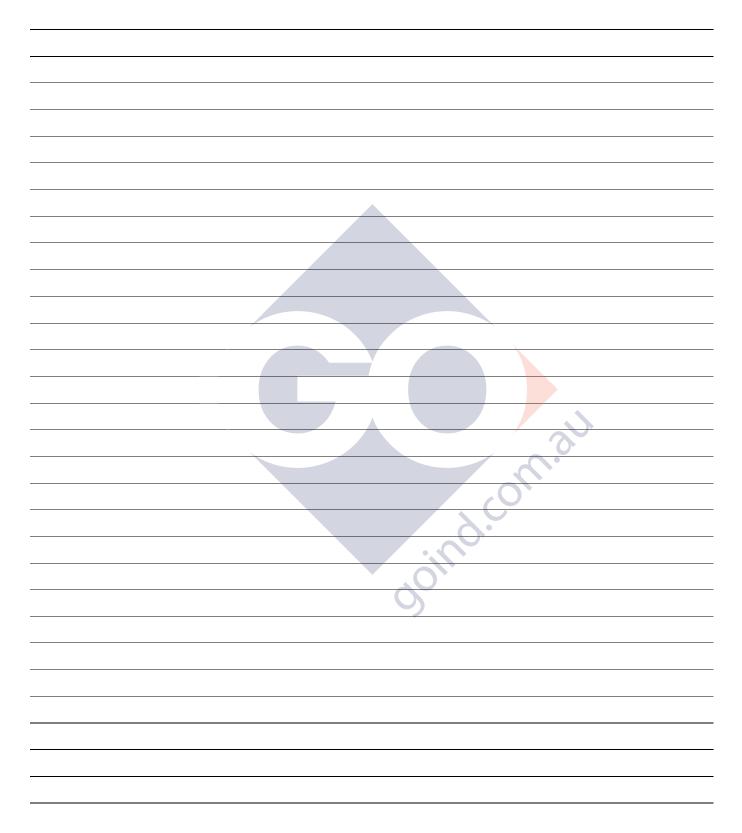
		Qt	V		<
Ref.	Part	Description		(	/ \\
201*	112590	SEAL, throat	1 201-	0	h 1
202	16X768	NUT, packing	1	$\bigcirc$	222
203*	193722	V-PACKING, throat, V-Max,	4 000		
		UHMWPE, blue	202-	R A	219
204≉	15G658	GLAND, male, throat	1		0 213
205		CYLINDER, pump	1 228-		
	17R116	Model 17R042 (Chrome)	220		208
	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