



Pump & Motor Division

Vocational Truck Pump Program Catalog



ENGINEERING YOUR SUCCESS.



Useful Formulas

Pump Output Horsepower:	HP = GPM x PSI ÷ 1714
Pump Input Horsepower:	HP = GPM x PSI ÷ 1714 ÷ E
Pump Input Torque (Lbs. ft.):	T = CID x PSI ÷ 75.36
Gallons Per Minute:	GPM = CID x RPM ÷ 231
Cubic Inches Displacement:	CID = GPM x 231 ÷ RPM
Horse Power:	HP = T x RPM ÷ 5252
Flow in GPM using P.T.O.:	GPM = Engine RPM x P.T.O.% x CIR ÷ 231 x E
CCM Conversion:	CCM = CID x 16.39
CID Conversion:	CID = CCM x .06102

Abbreviations

HP = Horsepower	CCM = Cubic Centimeter Displacement	RP = Rear Ports
GPM = Gallons per Minute	BI = Bi Rotational	RV = Relief Valve
CID = Cubic Inches Displacement	CCW = Counter Clockwise	SP = Side Ports
PSI = Pounds per Square Inch	CW = Clockwise	SRP = Side and Rear Ports
RPM = Revolutions per Minute	MIX = Mixed Porting	W = Wet Spline
E = Efficiency	NPT = National Pipe Thread Ports	
T = Torque	ODT = O-Ring Boss Ports	



WARNING — User Responsibility

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale".

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Parker Hannifin Corporation is the world's leading diversified manufacturer of motion and control technologies and systems for a wide variety of commercial mobile, industrial and aerospace markets. Among their divisions, the Pump & Motor Division engineers specialty products for unique applications in a wide range of industries including truck, refuse, material handling, construction, forestry, agriculture, and industrial. In an effort to meet distributor and customer demands for decreased lead-times, the Pump & Motor Division offers the Vocational Truck Pump Program.

Highlights from the program include...

- Products to support truck specific applications
- One price per standard pump families regardless of gear width
- Individually boxed pumps
- Freight paid subject to program qualification (PO value \$5,000 or greater)

Our ability to engineer products for unique applications has kept us at the forefront of technology, and ensured our position as industry leaders. Our success has come from providing quality products with excellent sales and service support.

We manufacture hydraulic components for a wide range of applications including:

- Aerial Lift
- Refuse
- Dump Truck
- Salt / Sand
- Low Boy Trailer
- Roll Off
- Moving Floor

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Dump Pumps

C101/102 - G101/102 - SG102

- Pressures to 2500 PSI
- Speeds to 2400 RPM

C101/G101

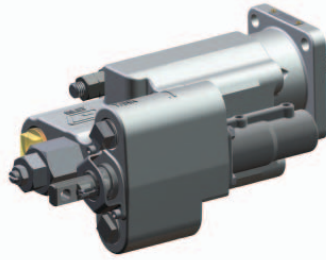
- Remote Mount
- 1" Round Keyed Shaft

C102/G102/SG102

- SAE "B" 4-Bolt
- SAE "B" 13T Spline

G102/SG102

- DIN 4-Bolt
- DIN 8T Spline
- Applications - Dump Truck / Dump Trailer



Parker #	Description	Rotation	Gear	CID
C101/102 Pumps				
3149310226	C101D-2.5 (Remote Mount)	BI	2.5"	6.38
3149325229	C102D-2.5-1 (Direct Mount)	CCW	2.5"	6.38
3149325227	C102D-2.5-1-AS (Direct Mount w/Airshift Installed)	CCW	2.5"	6.38
3149325234	C102D-2.5 (Direct Mount)	CW	2.5"	6.38
G101/102 Pumps				
3089310047	G101-1-2.0 (Remote Mount)	BI	2.0"	3.94
3089310416	G102-1-2.0-R-4S (Direct Mount)	CW	2.0"	3.94
3089310903	G102-1-2.0-R-4S-AS (Direct Mount w/Airshift Installed)	CW	2.0"	3.94
3089310418	G102-1-2.0-L-4S (Direct Mount)	CCW	2.0"	3.94
3089310905	G102-1-2.0-L-4S-AS (Direct Mount w/Air Shift Installed)	CCW	2.0"	3.94
3089310913	G102-1-2.0-R-4D-AS (Direct Mount w/Airshift Installed)	CW	2.0"	3.94
SG102 Pumps				
3189111001	SG102-1-2.5R-4S (Direct Mount)	CW	2.5"	4.93
3189112001	SG102-1-2.5L-4S (Direct Mount)	CCW	2.5"	4.93
3189111002	SG102-1-2.5R-4S-AS (Direct Mount w/Air Shift Installed)	CW	2.5"	4.93
3189112002	SG102-1-2.5L-4S-AS (Direct Mount w/Air Shift Installed)	CCW	2.5"	4.93
3189111003	SG102-1-2.5R-4D-AS (Direct Mount w/Air Shift Installed)	CW	2.5"	4.93

NOTE: All dump pumps have 3-line sleeve included
All dump pumps have relief valve set at 2000 PSI

Accessories for Reference

Parker #	Description
3149414006	ASK-6 (Air Shift Cylinder C Series with Hoses and Fittings)
3149414017	ASK-17 (Air Shift Cylinder C Series less Hoses and Fittings)
3140100005	Remote Mount Bracket C101
3911832323	Direct Mount Bracket C102
3913283052	3rd Line Sleeve
3089414016	ASK-16 (Air Shift Cylinder G Series with Hoses and Fittings)
3089414049	ASK-49 (Air Shift Cylinder G Series less Hoses and Fittings)
3149414055	ASK-55 (Air Shift Cylinder C Series less Hoses with Push Connect Fittings)
3089414070	ASK-70 (Air Shift Cylinder G Series less Hoses with Push Connect Fittings)

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P16 Pumps

- SAE "B" 2-Bolt Flange
- SAE "B" 7/8"-13T Shaft
- Pressures to 3000 PSI
- Speeds to 3600 RPM
- Applications – Salt & Sand / Aerial Lift / Low Boy



Parker #	Model #	Rotation	Port	Inlet	Outlet	CID
0120321	P16-85A-2N1	CCW	Rear O-Ring	1-1/4"	1"	1.66
0120446	P16-100A-2N1	CCW	Rear O-Ring	1-1/4"	1"	1.96
0120440	P16-100C-2N1	CW	Rear O-Ring	1-1/4"	1"	1.96
0120748	P16-150A-2N1	CCW	Rear O-Ring	1-1/4"	1"	2.93
0120749	P16-150C-2N1	CW	Rear O-Ring	1-1/4"	1"	2.93
0121057	P16-200A-2N1	CCW	Rear O-Ring	1-1/4"	1"	3.90
0121056	P16-200C-2N1	CW	Rear O-Ring	1-1/4"	1"	3.90
0120301	P16-85A-2N2	CCW	Rear NPT	1"	3/4"	1.66
0120605	P16-115A-2N2	CCW	Rear NPT	1"	3/4"	2.24
0120606	P16-115C-2N2	CW	Rear NPT	1"	3/4"	2.24
0120750	P16-150A-2N2	CCW	Rear NPT	1"	3/4"	2.93
0120751	P16-150C-2N2	CW	Rear NPT	1"	3/4"	2.93
0120900	P16-180A-2N2	CCW	Rear NPT	1"	3/4"	3.51

Reference Soft Goods Kits 0015419



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PGP020 Pumps

- Bi-Rotational
- SAE "B" 2/4-Bolt Flange
- SAE "B" 7/8"-13T Shaft
- SAE "BB" 1"-15T Shaft
- Pressures to 3000 PSI
- Speeds to 2400 RPM
- Applications – Wrecker / Salt & Sand



Parker #	Description	Rot.	Port	Rear	Side	Gear	CID
3089110271	PGP020 2/4B NPT SRP 7/8" - 13T 10	BI	NPT	1"	1"	1"	1.97
3089110272	PGP020 2/4B NPT SRP 7/8" - 13T 12	BI	NPT	1"	1"	1-1/4"	2.46
3089110264	PGP020 2/4B NPT SRP 7/8" - 13T 15	BI	NPT	1"	1-1/4"	1-1/2"	2.96
3089110265	PGP020 2/4B NPT SRP 7/8" - 13T 17	BI	NPT	1"	1-1/4"	1-3/4"	3.45
3089110266	PGP020 2/4B NPT SRP 7/8" - 13T 20	BI	NPT	1"	1-1/4"	2"	3.94
3089110295	PGP020 2/4B NPT SRP 1" - 15T 20	BI	NPT	1"	1-1/4"	2"	3.94
3089110274	PGP020 2/4B ODT SRP 7/8" - 13T 10	BI	O-Ring	1"	1"	1"	1.97
3089110278	PGP020 2/4B ODT SRP 7/8" - 13T 12	BI	O-Ring	1"	1"	1-1/4"	2.46
3089110275	PGP020 2/4B ODT SRP 7/8" - 13T 15	BI	O-Ring	1"	1-1/4"	1-1/2"	2.96
3089110276	PGP020 2/4B ODT SRP 7/8" - 13T 17	BI	O-Ring	1"	1-1/4"	1-3/4"	3.45
3089110277	PGP020 2/4B ODT SRP 7/8" - 13T 20	BI	O-Ring	1"	1-1/4"	2"	3.94
3089110296	PGP020 2/4B ODT SRP 1" - 15T 20	BI	O-Ring	1"	1-1/4"	2"	3.94

Reference Soft Goods Kits 3911802584

WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

PGP020 Pumps - Tandem Units

- Bi-Rotational
- SAE "B" 2 or 4-Bolt Flange
- SAE "B" 7/8"-13T Shaft
- Pressures to 3000 PSI
- Speeds to 2400 RPM
- Applications – Bulk Feed

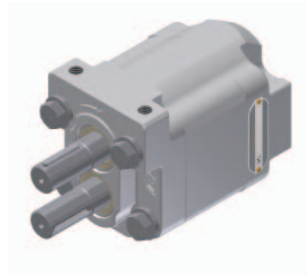


Parker #	Description	Rot.	Port	Side Inlet Front - Rear	Side Outlet Front - Rear	Gear Front - Rear	CID Front - Rear
3089123003	PGP020 4B NPT SP 7/8" - 13T 20-20	BI	NPT	1-1/4" - 1-1/4"	1-1/4" - 1-1/4"	2" - 2"	3.94 - 3.94
3089123019	PGP020 4B ODT SP 7/8" - 13T 20-20	BI	O-Ring	1-1/4" - 1-1/4"	1-1/4" - 1-1/4"	2" - 2"	3.94 - 3.94
3089126017	PGP020 2/4B ODT SP 7/8" - 13T 20-20	BI	O-Ring	1" - 1"	1" - 1"	2" - 2"	3.94 - 3.94

Reference Soft Goods Kits 3911802791

PGP051 Pumps

- PAD Mount 1-1/8" Key
- Pressures to 2500 PSI
- Speeds to 1900 RPM
- Applications – Roll off / Moving Floor / Low Boy



Parker #	Description	Rot.	Port	Rear	Gear	CID
3139610846	PGP051 Pad NPT/ODT RP 1-1/8" K22	CW	NPT/ODT	1-1/2" S 3/4" P	2-1/4"	5.74

Reference Soft Goods Kit 3911822183

WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

PGP051 Pumps

- SAE "B" 4-Bolt Flange
- SAE "B" 7/8"-13T Shaft
- Pressures to 3000 PSI
- Speeds to 2400 RPM
- Applications – Moving Floors / Roll Off / Refuse



Parker #	Description	Rot.	Port	Rear	Side	Gear	CID
3139610442	PGP051 4B NPT RP 7/8" - 13T 25	BI	NPT	1-1/4"	Blank	2-1/2"	6.38
3139610367	PGP051 4B NPT SRP 7/8" - 13T 25	BI	NPT	1-1/4"	1-1/4"	2-1/2"	6.38
3139610450	PGP051 4B NPT SP 7/8" - 13T 25	BI	NPT	Blank	1-1/4"	2-1/2"	6.38
3139610727	PGP051 4B ODT SRP 7/8" - 13T 20	BI	O-Ring	1-1/4"	1-1/4"	2"	5.10
3139610526	PGP051 4B ODT SRP 7/8" - 13T 25	BI	O-Ring	1-1/4"	1-1/4"	2-1/2"	6.38

Reference Soft Goods Kit 3911802137

PGP051 Pumps/Motors

- SAE "B" 2/4-Bolt Flange
- SAE "B" 7/8"-13T Shaft
- Pressures to 3000 PSI
- Speeds to 2400 RPM
- Applications – Roll Off / Refuse / Moving Floor



Parker #	Description	Rot.	Port	Rear	Side	Gear	CID
3139610664	PGP051 2/4B NPT SRP 7/8" - 13T 17	BI	NPT	1-1/2"	1-1/4"	1-3/4"	4.46
3139610663	PGP051 2/4B NPT SRP 7/8" - 13T 20	BI	NPT	1-1/2"	1-1/4"	2"	5.10
3139610658	PGP051 2/4B NPT SRP 7/8" - 13T 25	BI	NPT	1-1/2"	1-1/2"	2-1/2"	6.38
3139610800	PGP051 2/4B NPT SRP 1" - 15T 25	BI	NPT	1-1/2"	1-1/2"	2-1/2"	6.38
3139610769	PGP051 2/4B ODT SRP 7/8" - 13T 17	BI	O-Ring	1-1/4"	1-1/4"	1-3/4"	4.46
3139610768	PGP051 2/4B ODT SRP 7/8" - 13T 20	BI	O-Ring	1-1/4"	1-1/4"	2"	5.10
3139610767	PGP051 2/4B ODT SRP 7/8" - 13T 22	BI	O-Ring	1-1/4"	1-1/4"	2-1/4"	5.74
3139610766	PGP051 2/4B ODT SRP 7/8" - 13T 25	BI	O-Ring	1-1/4"	1-1/2"	2-1/2"	6.38
3139610801	PGP051 2/4B ODT SRP 1" - 15T 25	BI	O-Ring	1-1/4"	1-1/2"	2-1/2"	6.38

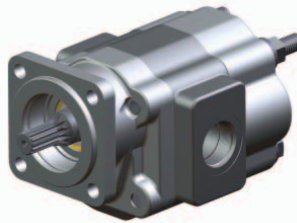
Reference Soft Goods Kit 3911842113

NOTE: All pumps have extended studs

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PGP051 Pumps/PGM051 Motors

- SAE "B" or "C" 4-Bolt Flange
- SAE "C" 1-1/4" Keyed or 14T Shaft
- Pressures to 2500 PSI
- Speeds to 2400 RPM
- Application – Oil / Gas



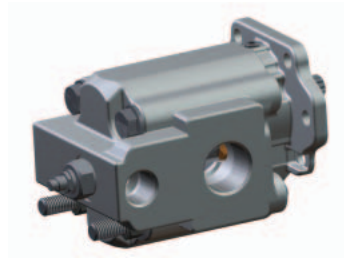
Parker #	Description	Rot.	Port	Rear	Side	Gear	CID
3139610814	PGP051 4C ODT SRP 1-1/4" 14T 20	BI	O-Ring	1-1/4"	1-1/4"	2"	5.10
3139610815	PGP051 4C ODT SRP 1-1/4" K 20	BI	O-Ring	1-1/4"	1-1/4"	2"	5.10
3139610816	PGP051 4C NPT SRP 1-1/4" 14T 20	BI	NPT	1-1/4"	1-1/4"	2"	5.10
3139610817	PGP051 4C NPT SRP 1-1/4" K 20	BI	NPT	1-1/4"	1-1/4"	2"	5.10
3139610818	PGP051 4C ODT SRP 1-1/4" 14T 25	BI	O-Ring	1-1/2"	1-1/2"	2-1/2"	6.38
3139610819	PGP051 4C ODT SRP 1-1/4" K 25	BI	O-Ring	1-1/2"	1-1/2"	2-1/2"	6.38
3139610820	PGP051 4C NPT SRP 1-1/4" 14T 25	BI	NPT	1-1/2"	1-1/2"	2-1/2"	6.38
3139610821	PGP051 4C NPT SRP 1-1/4" K 25	BI	NPT	1-1/2"	1-1/2"	2-1/2"	6.38
3139710338	PGM051 4B ODT SRP 1-1/4" K 22	BI	O-Ring	1-1/2"	1-1/2"	2-1/4"	5.74
3139710339	PGM051 4B NPT SRP 1-1/4" K 22	BI	NPT	1-1/2"	1-1/2"	2-1/4"	5.74
3139610823	PGP051 4B ODT SRP 1-1/4" K 20	BI	ODT	1-1/4"	1-1/4"	2"	5.10
3139610824	PGP051 4B NPT SRP 1-1/4" K 20	BI	NPT	1-1/4"	1-1/4"	2"	5.10

Reference Soft Goods Kit 3911801475

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PGP051 Pumps with Relief Valve

- SAE "B" 2/4-Bolt Flange
- SAE "B" 7/8"-13T Shaft
- Pressures to 2500 PSI
- Speeds to 2400 RPM
- Application – Moving Floors / Roll Off / Refuse



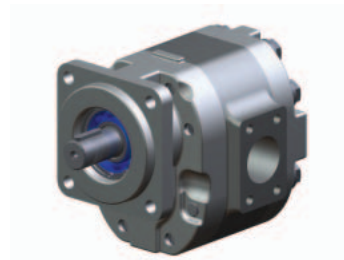
Parker #	Description	Rot.	Port	Rear	Side	Gear	CID
3139610678	PGP051 2/4B NPT SP 7/8" - 13T 17 RV	CCW	NPT	RV	1-1/4"	1-3/4"	4.46
3139610699	PGP051 2/4B NPT SP 7/8" - 13T 25 RV	CCW	NPT	RV	1-1/2"	2-1/2"	6.38

Reference Soft Goods Kit 3911842113

Relief Valve Setting 2500 PSI

PGP076 Pumps

- SAE "C" 4-Bolt Flange
- SAE "C" 1-1/4" Rd Key Shaft
- Pressures to 3000 PSI
- Speeds to 2400 RPM
- Applications – Refuse / Side Loader / Front Loader / Rear Loader



Parker #	Description	Rot.	Port	Inlet	Outlet	Gear	CID
3169610246	PGP076 4C SF SP 1-1/4" K 22	CCW	SF	2"	1-1/4"	2-1/4"	9.22

Reference Soft Goods Kit 3911842142

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PGPLS076 Pump with Unloader

- SAE "C" 4-Bolt Flange
- SAE "C" 1-1/4" Rd Key Shaft
- Pressures to 3000 PSI
- Speeds to 2400 RPM
- Applications – Refuse / Side Loader / Front Loader / Rear Loader



Parker #	Description	Rot.	Port	Inlet	Outlet	Gear	CID
3169610258	PGPLS076 4C SF SP 1-1/4" K 22	CCW	SF	2"	1-1/4"	2-1/4"	9.22

Reference Soft Goods Kit 391832996

PGP315 Pump/Motors

- SAE "B" 2-Bolt Flange
- SAE "B" 7/8"-13T Shaft
- Pressures to 3500 PSI
- Speeds to 3000 RPM
- Applications – Tire Trucks / Salt & Sand



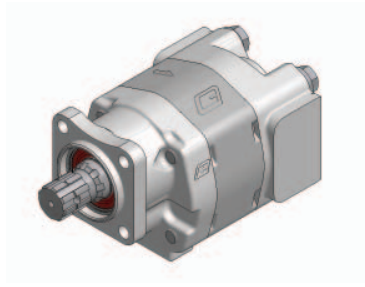
Parker #	Description	Rot.	Port	Rear	Side	Gear	CID
3269110481	PGP315 2B ODT RP 7/8" - 13T 07	BI	O-Ring	1"	Blank	3/4"	0.93
3269110482	PGP315 2B ODT RP 7/8" - 13T 10	BI	O-Ring	1"	Blank	1"	1.24

Reference Soft Goods Kit 3911801244

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Easy Fit DIN Flange

- DIN Flange
- 8T Shaft
- Pressures to 3000 PSI
- Speeds to 2400 RPM
- Applications – Moving Floors / Low Boys / Live Bottoms



Parker #	Description	Rot.	Port	Inlet	Outlet	Gear	CID
3249110552	PGP330 DIN ODT RP 8T DIN 07	BI	O-Ring	1"	1"	3/4"	1.48
3249110553	PGP330 DIN ODT RP 8T DIN 12	BI	O-Ring	1"	1"	1-1/4"	2.46
3239110548	PGP350 DIN ODT RP 8T DIN 20	CCW	O-Ring	1-1/4"	1"	2"	5.10
3239110549	PGP350 DIN ODT RP 8T DIN 25	CCW	O-Ring	1-1/4"	1"	2-1/2"	6.38
3239110550	PGP350 DIN ODT RP 8T DIN 20	CW	O-Ring	1-1/4"	1"	2"	5.10
3239110551	PGP350 DIN ODT RP 8T DIN 25	CW	O-Ring	1-1/4"	1"	2-1/2"	6.38
3239110573	PGP350 DIN ODT RP 8T DIN 15	BI	O-Ring	1"	1"	1-1/2"	3.83
3239110574	PGP350 DIN ODT RP 8T DIN 20	BI	O-Ring	1"	1"	2"	5.10

Reference Soft Goods Kit 3911832830

PGP350 Easy Fit

- SAE "B" 4-Bolt Flange
- SAE "B" 7/8"-13T Shaft
- Pressures to 3500 PSI
- Speeds to 2400 RPM
- Applications – Live Floors / Moving Floors / Roll Off Trailers



Parker #	Description	Rot.	Port	Inlet	Outlet	Gear	CID
3239110522	PGP350 4B ODT RP CW 7/8" - 13T 20 W	CW	O-Ring	1-1/4"	1"	2"	5.10
3239110523	PGP350 4B ODT RP CCW 7/8" - 13T 20 W	CCW	O-Ring	1-1/4"	1"	2"	5.10
3239110524	PGP350 4B ODT RP CW 7/8" - 13T 25 W	CW	O-Ring	1-1/4"	1"	2-1/2"	6.38
3239110525	PGP350 4B ODT RP CCW 7/8" - 13T 25 W	CCW	O-Ring	1-1/4"	1"	2-1/2"	6.38

Reference Soft Goods Kit 3911832806

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Offer of Sale

1. Definitions. As used herein, the following terms have the meanings indicated.

- Buyer:** means any customer receiving a Quote for Products from Seller.
- Goods:** means any tangible part, system or component to be supplied by the Seller.
- Products:** means the Goods, Services and/or Software as described in a Quote provided by the Seller.
- Quote:** means the offer or proposal made by Seller to Buyer for the supply of Products.
- Seller:** means Parker Hannifin Corporation, including all divisions and businesses thereof.
- Services:** means any services to be supplied by the Seller.
- Software:** means any software related to the Products, whether embedded or separately downloaded.
- Terms:** means the terms and conditions of this Offer of Sale or any newer version of the same as published by Seller electronically at www.parker.com/saleterms.

2. Terms. All sales of Products by Seller are contingent upon, and will be governed by, these Terms and, these Terms are incorporated into any Quote provided by Seller to any Buyer. Buyer's order for any Products whether communicated to Seller verbally, in writing, by electronic data interface or other electronic commerce, shall constitute acceptance of these Terms. Seller objects to any contrary or additional terms or conditions of Buyer. Reference in Seller's order acknowledgement to Buyer's purchase order or purchase order number shall in no way constitute an acceptance of any of Buyer's terms of purchase. No modification to these Terms will be binding on Seller unless agreed to in writing and signed by an authorized representative of Seller.

3. Price; Payment. The Products set forth in Seller's Quote are offered for sale at the prices indicated in Seller's Quote. Unless otherwise specifically stated in Seller's Quote, prices are valid for thirty (30) days and do not include any sales, use, or other taxes or duties. Seller reserves the right to modify prices at any time to adjust for any raw material price fluctuations. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS2010). All sales are contingent upon credit approval and payment for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified in the Quote). Unpaid invoices beyond the specified payment date incur interest at the rate of 1.5% per month or the maximum allowable rate under applicable law.

4. Shipment; Delivery; Title and Risk of Loss. All delivery dates are approximate. Seller is not responsible for damages resulting from any delay. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the shipment carrier at Seller's facility. Unless otherwise agreed, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Buyer's request beyond the respective indicated shipping date will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions.

5. Warranty. The warranty related to the Products is as follows: (i) Goods are warranted against defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of use, whichever occurs first; (ii) Services shall be performed in accordance with generally accepted practices and using the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the completion of the Services by Seller; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **DISCLAIMER OF WARRANTY: THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING DESIGN, NON INFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR**

FAULT-TOLERANT, OR THAT BUYER'S USE THEREOF WILL BE SECURE OR UNINTERRUPTED. BUYER AGREES AND ACKNOWLEDGES THAT UNLESS OTHERWISE AUTHORIZED IN WRITING BY SELLER THE SOFTWARE SHALL NOT BE USED IN CONNECTION WITH HAZARDOUS OR HIGH RISK ACTIVITIES OR ENVIRONMENTS. EXCEPT AS EXPRESSLY STATED HEREIN, ALL PRODUCTS ARE PROVIDED "AS IS".

6. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to the Seller within ten (10) days of delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the non-conformance is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.

7. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING PRODUCT, RE-PERFORM THE SERVICES, OR REFUND THE PURCHASE PRICE PAID WITHIN A REASONABLE PERIOD OF TIME. IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, NON-COMPLETION OF SERVICES, USE, LOSS OF USE OF, OR INABILITY TO USE THE PRODUCTS OR ANY PART THERE OF, LOSS OF DATA, IDENTITY, PRIVACY, OR CONFIDENTIALITY, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS.

8. Loss to Buyer's Property. Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which are or become Buyer's property, will be considered obsolete and maybe destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the Products manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Special Tooling. Special Tooling includes but is not limited to tooling, jigs, fixtures and associated manufacturing equipment acquired or necessary to manufacture Products. A tooling charge may be imposed for any Special Tooling. Such Special Tooling shall be and remain Seller's property not withstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in Special Tooling belonging to Seller that is utilized in the manufacture of the Products, even if such Special Tooling has been specially converted or adapted for such manufacture and not withstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any Special Tooling or other property in its sole discretion at any time.

10. Security Interest. To secure payment of all sums due, Seller retains a security interest in all Products delivered to Buyer and, Buyer's acceptance of these Terms is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.

11. User Responsibility. The Buyer through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. The Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and other technical information provided with the Product. If Seller provides Product options based upon data or specifications provided by the Buyer, the Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event the Buyer is not the end-user, Buyer will ensure such end-user complies with this paragraph.

12. Use of Products, Indemnity by Buyer. Buyer shall comply with all instructions, guides and specifications provided by Seller with the Products. Unauthorized Uses. If Buyer uses or resells the Products for any uses prohibited in Seller's instructions, guides or specifications, or Buyer otherwise fails to comply with Seller's instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer's sole risk. Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, application, design, specification or other misuse of Products provided by Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, tooling, equipment, plans, drawings, designs or specifications or other information or things furnished by Buyer; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing or tampering with the Products for any reason; or (e) Buyer's failure to comply with these Terms. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

13. Cancellations and Changes. Buyer may not cancel or modify any order for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller, at any time, may change Product features, specifications, designs and availability.

14. Limitation on Assignment. Buyer may not assign its rights or obligations without the prior written consent of Seller.

15. Force Majeure. Seller does not assume the risk and is not liable for delay or failure to perform any of Seller's obligations by reason of events or circumstances beyond its reasonable control ("Events of Force Majeure"). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.

16. Waiver and Severability. Failure to enforce any provision of these Terms will not invalidate that provision; nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of these Terms by legislation or other rule of law shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

17. Termination. Seller may terminate any agreement governed by or arising from these Terms for any reason and at anytime by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or one if filed by a third party (d) makes an assignment for the benefit of creditors; or (e) dissolves its business or liquidates all or a majority of its assets.

18. Ownership of Software. Seller retains ownership of all Software supplied to Buyer hereunder. In no event shall Buyer obtain any greater right in and to the Software than a right in the nature of a license limited to the use thereof and subject to compliance with any other terms provided with the Software.

19. Indemnity for Infringement of Intellectual Property Rights. Seller is not liable for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights ("Intellectual Property Rights") except as provided in this Section. Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on a third party claim that one or more of the Products sold hereunder infringes the Intellectual Property Rights of a third party in the country of delivery of the Products by the Seller to the Buyer. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of any such claim, and Seller having sole control over the defense of the claim including all negotiations for settlement or compromise. If one or more Products sold hereunder is subject to "such a claim,

Seller may, at its sole expense and option, procure for Buyer the right to continue using the Products, replace or modify the Products so as to render them non-infringing, or offer to accept return of the Products and refund the purchase price less a reasonable allowance for depreciation. Seller has no obligation or liability for any claim of infringement: (i) a rising from information provided by Buyer; or (ii) directed to any Products provided hereunder for which the designs are specified in whole or part by Buyer; or (iii) resulting from the modification, combination or use in a system of any Products provided hereunder. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for such claims of infringement of Intellectual Property Rights.

20. Governing Law. These Terms and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to the sale and delivery of the Products.

21. Entire Agreement. These Terms, along with the terms set forth in the main body of any Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. In the event of a conflict between any term set forth in the main body of a Quote and these Terms, the terms set forth in the main body of the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter shall have no effect. These Terms may not be modified unless in writing and signed by an authorized representative of Seller.

22. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act"), U.S. and E.U. export control and sanctions laws ("Export Laws"), the U.S. Food Drug and Cosmetic Act ("FDCA"), and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer acknowledges that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Product from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws."

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Supersedes HY09-VOCATIONAL-TRUCKS/US July 2017

HY09-VOCATIONAL-TRUCKS/US September 2018



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