



SLOVAKIA s.r.o.

INTOOL

Cleco[®]

Pulse Screwdrivers

We redefine Pulse Tools



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Unbeatable Performance

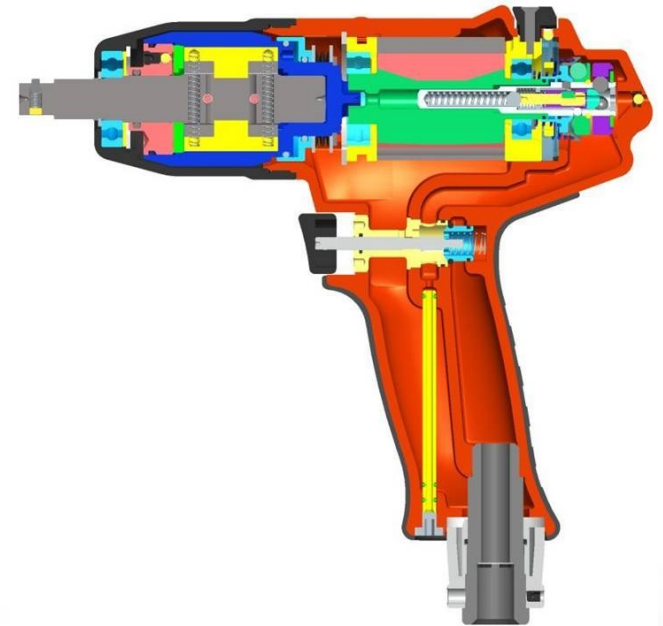
- We are constantly improving our products to guarantee you an **ideal productivity**.
- The new Cleco H-Series combines the legendary durability with **unmatched repeatability**.
- For this reason, you can complete every joint **quickly and reliably**.
- Choose your suitable pulse tool from our comprehensive product portfolio of **shut-off- and non-shut-off pulse tools**.
- Due to the **excellent power-weight-ratio**, you will not want to put it down again.

Economical

50% less air consumption

The tool consumes considerably less air in free speed due to the innovative centrifugal advance which does not release the entire capacity until full load.

The unique design of the 3-chamber-air engine minimizes the abrasion of the plates.



Precision

Similar to electric tools

The **high precision shutoff** mechanism ranges close to the characteristics of an electric tool at a **tolerance of +/- 10% at Six Sigma.**

Adapt the pulse rate to your joints and tighten even more exactly (shut-off versions).

A completely re-engineered pulse unit delivers **market leading repeatability** for hard and soft joints.

Ergonomics

Quiet as a whisper

Quiet as a sewing machine, this pulse tool creates a comfortable working environment.



The leading engine design combined with the new body development provides **outstanding ergonomics**. Less vibrations allow a longer application by the operator.

Low Maintenance

> **500,000 tightening cycles**

Keep an eye on the reserve oil condition with the **filling indicator**.

The **reserve oil** automatically replenishes. During maintenance, you can refill it in **just a few seconds**.

Reduced maintenance minimizes your downtimes. The new Cleco HSeries is able to provide **more than 500,000 tightening cycles** before the first service.



The Line-Up

Shut-Off – Air from the top or from the bottom:

14 models each

Free Speed: 3,000-4,000 rpm

Max. torque: 7 – 120 Nm

Non shut-off – Air from the top or from the bottom: 14 models each

Free Speed: 5,500-7,500 rpm

Max. torque: 7 – 120 Nm



PTHH.. and PTHHA..- Shut-off Tool Models



7PTHH



7PTHHA



11PTHH



11PTHHA



20PTHH



20PTHHA



35PTHH



35PTHHA



55PTHH



55PTHHA



80PTHH



80PTHHA



120PTHHA



120PTHH

(8x Square Drive; + 6x Internal Hex Drive) x 2 Air on Top = 28 Models

PHH.. and PHHA..- Non Shut-off Tool Models



7PHH



7PHHA



11PHH



11PHHA



20PHH



20PHHA



35PHH



35PHHA



55PHH



55PHHA



80PHH



80PHHA



120PHHA

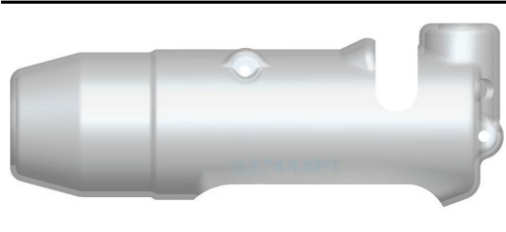


120PHH

(8x Square Drive; + 6x Internal Hex Drive) x 2 Air on Top = 28 Models

Accessory

Options



Protection cover

Order No. 937442PT – 7/11/20PTHHA..
 Order No. 937443PT – 35PTHHA..
 Order No. 937444PT – 55PTHHA..
 Order No. 937445PT – 80PTHHA..
 Order No. 937446PT – 110/120PTHHA..



Signal-Kit for process control with TVP-100
 Order No. 934918



Protection cover

Order No. 937447PT – 7/11/20PTHH..
 Order No. 937448PT – 35PTHH..
 Order No. 937449PT – 55PTHH..
 Order No. 937450PT – 80PTHH..
 Order No. 937451PT – 110/120PTHH..



Vibration absorber

Order No. 935965 – 35/55PTHH..
 Order No. 935966 – 80/110/120PTHH..

Einstellschlüssel (Standard)




Quick Change Chuck 7/16" to 3/8"
 Order No. 937472 fit to 11/20/35/55PTHH..3



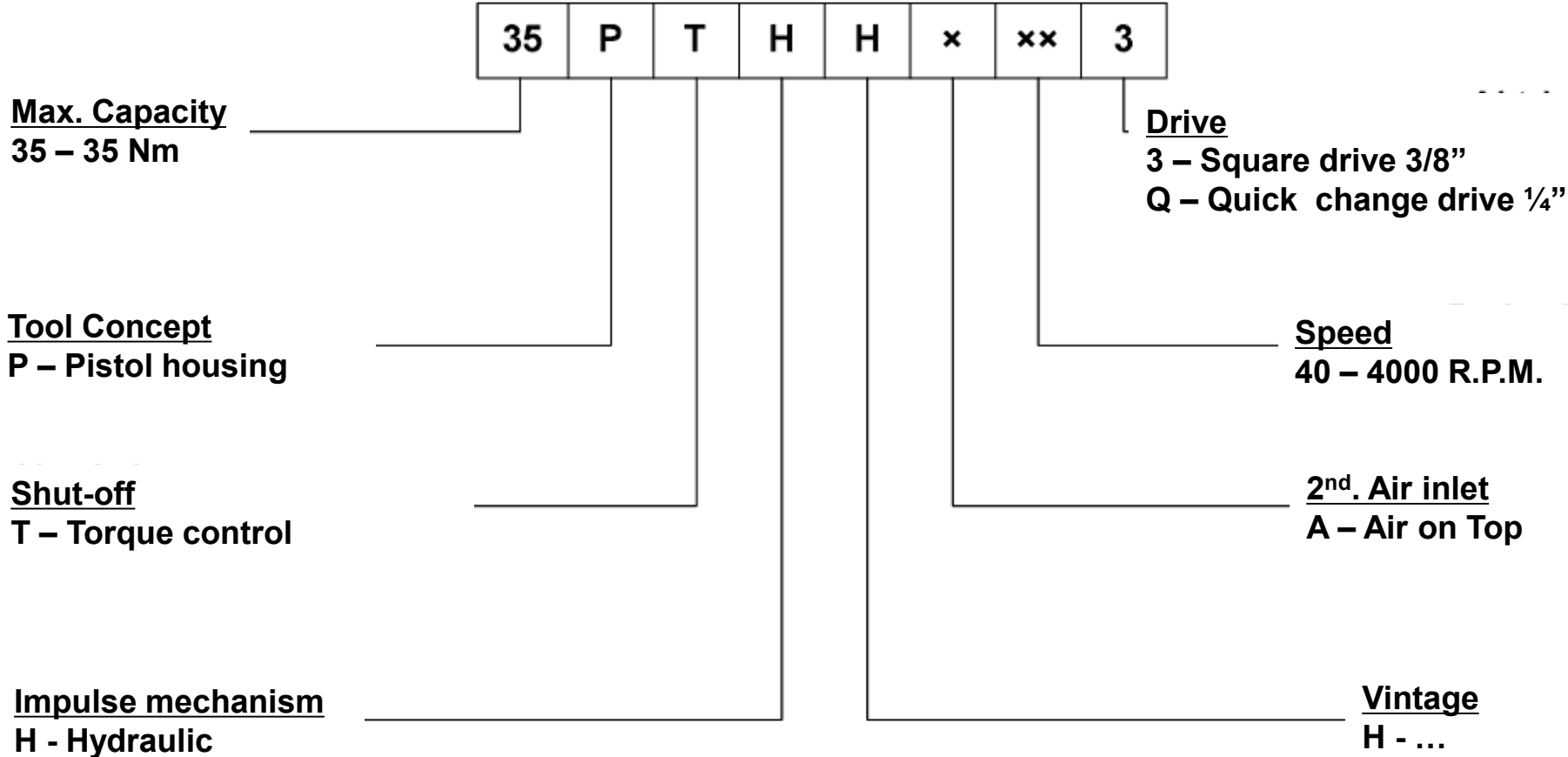
Product Comparison

	Speed (Soft)	Speed (Hard)	Accuracy	Torque Reaction	Error Proofing	Power To Weight
Stall	3	4	4	5	5	3
Impact	4	1	5	1	5	1
Pulse	4	1	2	1	2	1
Clutch	3	3	3	5	2	3
DC Elec.	2	3	1	5	1	3

Worst  ←-----→  Best

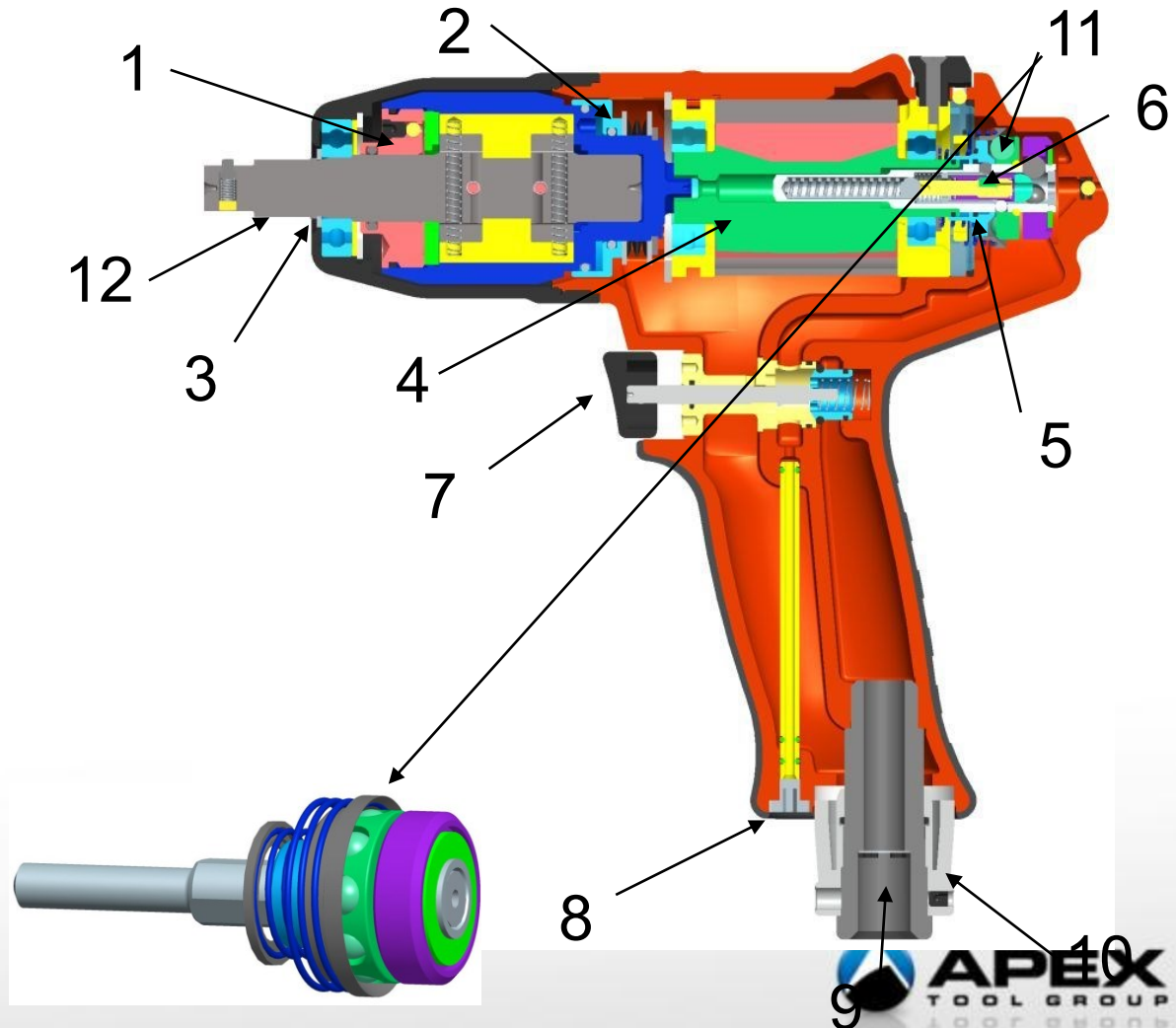


Model- Key

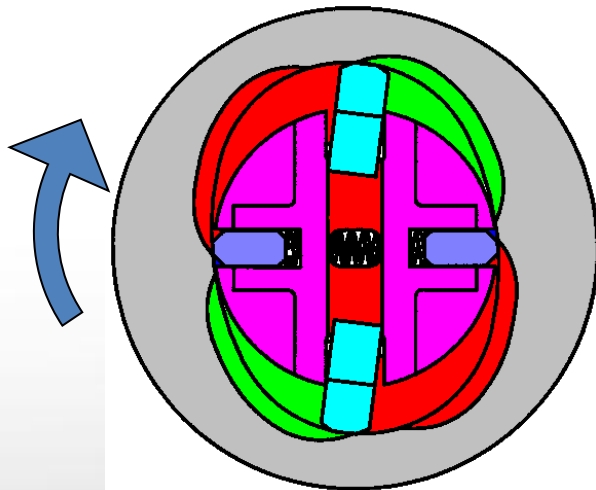
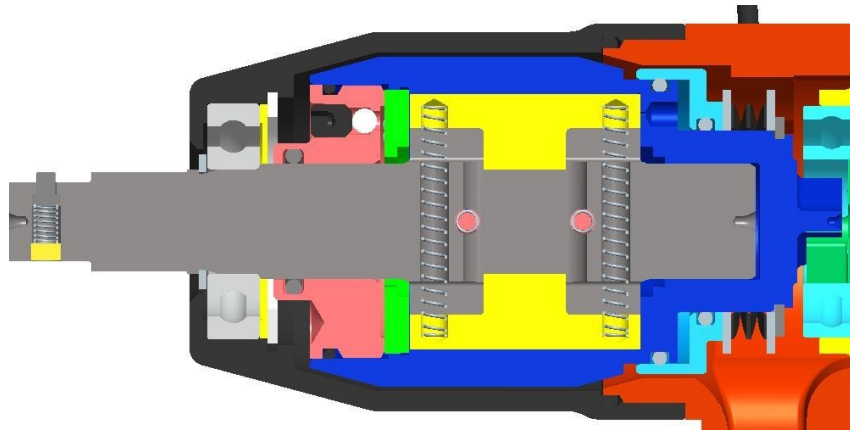


Function Components

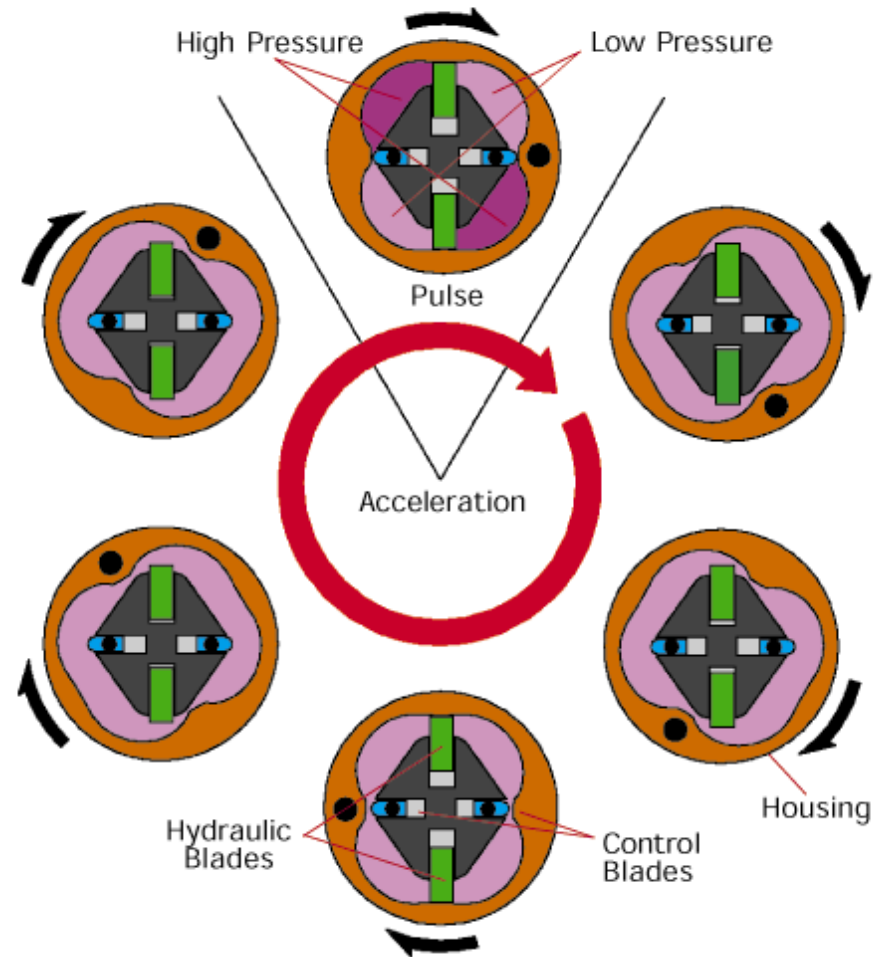
- 1) Impulse Unit
- 2) Reserve Oil Chamber
- 3) Axial Force Protection
- 4) Three- Chamber Motor
- 5) Shut-off Unit
- 6) Torque Setting Screw
- 7) Trigger Valve
- 8) Signal Port
- 9) Air Inlet
- 10) Pulse Number Adjustment
- 11) Free Speed Reducer
- 12) Guide for Extensions



Impulse Unit



DOUBLE CHAMBER PULSE UNIT



Reserve Oil Filling



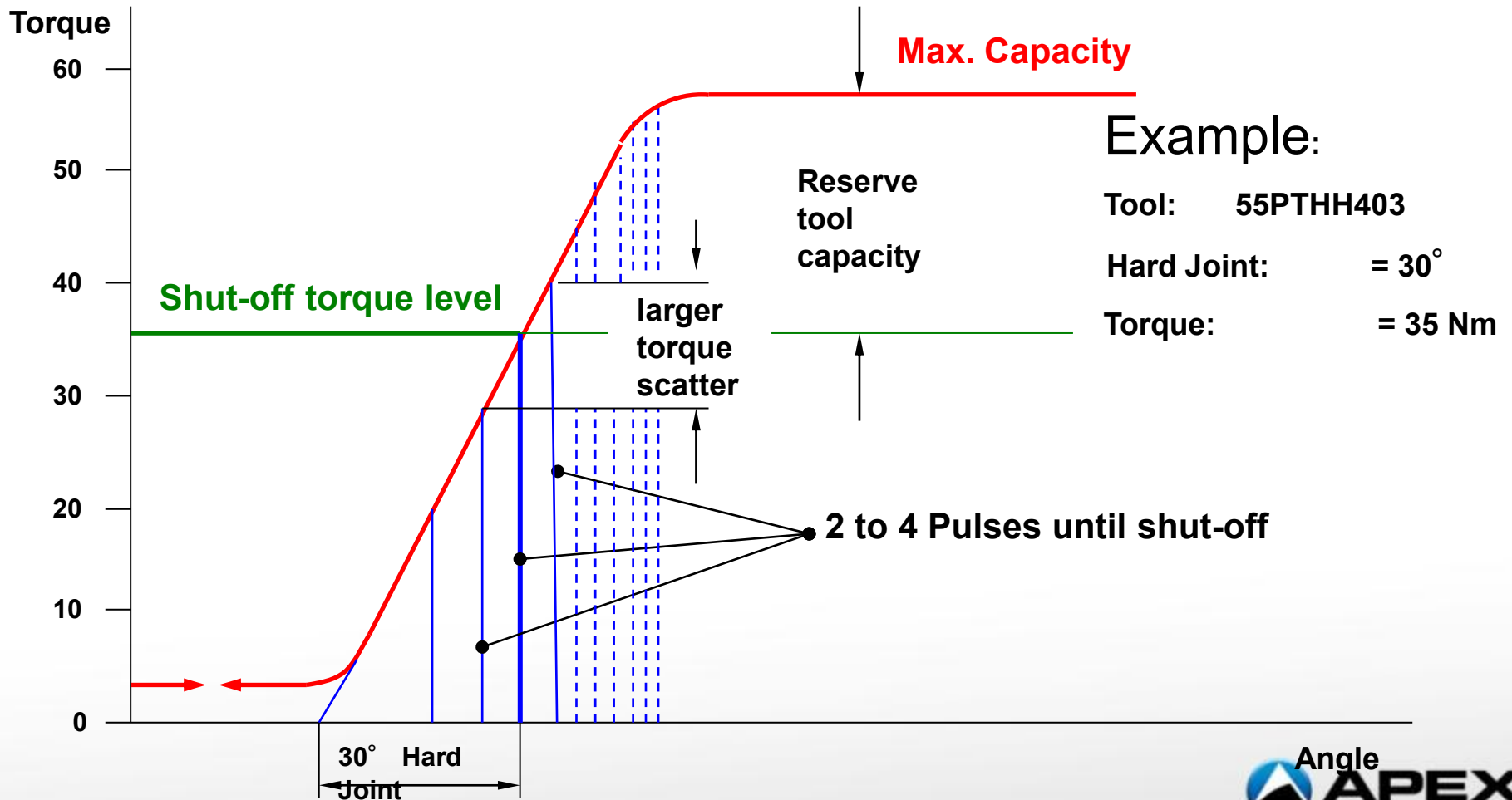
936695PT

3 Chamber Motor

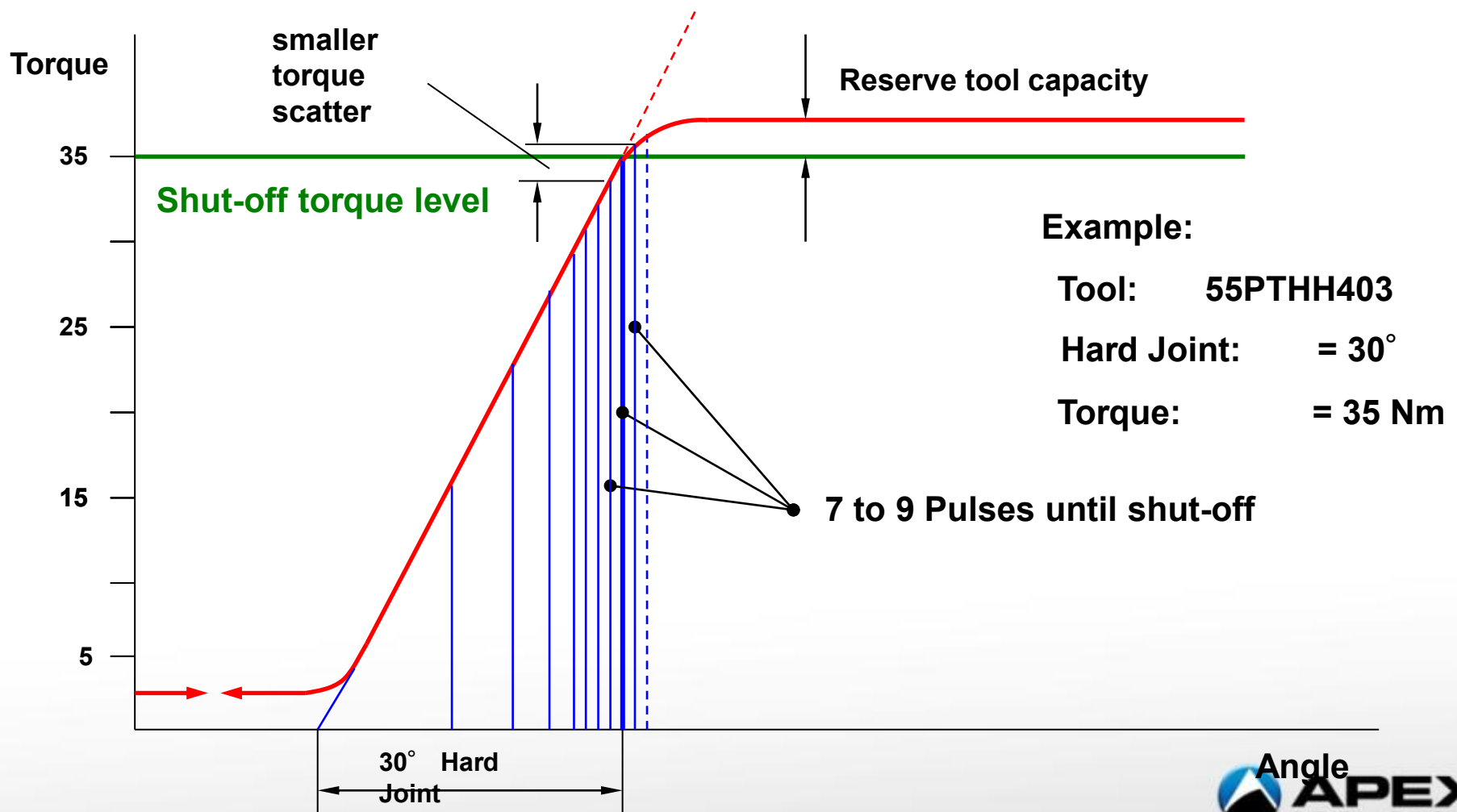
- Only 7 Motor Blades
- Weight reduced Motor
- Almost constant Torque
- Reduced Blade Wear
- Special Pulse Torque Transmission Profile



Tool set up for hard joint (Tool capacity not reduced)



Tool Set up for hard Joint (Tool Capacity reduced)



Performance



MFU - Zusammenfassung 80 PTHH Homologation - Summary 80 PTHH

Prototyp

Westhausen
10. Feb. 2012

tool tolerance	± 10 %	serial no	min. torque			30% of rated torque			80% of rated torque			max torque		
			hard	soft	combined	hard	soft	combined	hard	soft	combined	hard	soft	combined
80 PTHH35Q			50,0 Nm			59,0 Nm			74,0 Nm			80,0 Nm		
			100 Values	100 Values	200 Values	100 Values	100 Values	200 Values	100 Values	100 Values	200 Values	100 Values	100 Values	200 Values
x quer	[Nm]	685644	50,67	49,70	50,04	59,93	58,86	59,33	75,74	72,38	74,05	81,61	78,30	80,14
Range	[Nm]		2,20	3,50	3,50	2,20	3,40	4,00	2,20	2,60	6,20	2,20	1,60	5,60
6s / Com.Tq.Scatter	[%]		6,21	7,54	8,83	5,88	6,44	7,97	4,11	4,35	8,76	3,55	2,74	7,28
Cm	± 10 %		3,18	2,67	/	3,35	3,11	/	4,76	4,70	/	5,53	7,45	/
Cmk	± 10 %		2,75	2,51	/	2,82	3,04	/	3,64	3,67	/	4,41	5,87	/

80 PTHH35Q			50,0 Nm			59,0 Nm			74,0 Nm			80,0 Nm		
			100 Values	100 Values	200 Values	100 Values	100 Values	200 Values	1000 Values	100 Values	1100 Values	100 Values	100 Values	200 Values
x quer	[Nm]	685645	51,31	49,77	50,46	59,11	58,31	58,80	74,88	74,08	74,88	77,96	79,18	78,35
Range	[Nm]		1,90	1,20	2,80	1,90	1,70	2,80	3,40	2,70	3,70	3,20	2,80	3,90
6s / Com.Tq.Scatter	[%]		2,80	3,47	6,19	4,29	3,71	5,34	7,07	4,46	7,07	6,50	5,31	7,47
Cm	± 10 %		6,96	5,78	/	4,65	5,46	/	2,80	4,48	/	3,16	3,81	/
Cmk	± 10 %		5,14	5,51	/	4,57	4,82	/	2,46	4,43	/	2,35	3,42	/



Performance



MFU - Zusammenfassung 80 PTHH Homologation - Summary 80 PTHH

Prototyp

Westhausen
10. Feb. 2012

tool tolerance	± 10 %	serial no	min. torque			30% of rated torque			80% of rated torque			max torque		
			hard	soft	combined	hard	soft	combined	hard	soft	combined	hard	soft	combined
80 PTHH353														
			100 Values	100 Values	200 Values	100 Values	100 Values	200 Values	100 Values	100 Values	200 Values	100 Values	100 Values	200 Values
x quer	[Nm]	685646	50,27	51,54	50,63	59,48	59,07	59,48	73,87	76,99	75,72	79,49	81,14	80,10
Range	[Nm]		3,40	2,50	4,50	2,60	2,10	2,80	3,10	4,00	6,50	3,70	3,40	5,00
6s / Com.Tq.Scatter	[%]		7,86	5,56	9,22	6,25	4,55	6,25	5,43	6,73	10,18	7,31	6,13	8,79
Cm	± 10 %		2,53	3,49	/	3,17	4,39	/	3,69	2,86	/	2,75	3,22	/
Cmk	± 10 %		2,39	2,42	/	2,92	4,34	/	3,63	1,70	/	2,58	2,76	/
80 PTHH353														
			100 Values	100 Values	200 Values	100 Values	100 Values	200 Values	1000 Values	100 Values	1100 Values	100 Values	100 Values	200 Values
x quer	[Nm]	685647	49,99	48,71	49,38	60,70	58,51	59,71	73,53	74,55	73,86	78,66	81,34	80,91
Range	[Nm]		3,90	3,40	5,60	2,60	2,70	5,00	2,70	2,30	3,60	3,30	4,40	6,70
6s / Com.Tq.Scatter	[%]		8,69	8,61	11,24	5,13	4,61	8,53	5,03	3,98	5,89	5,03	9,37	10,47
Cm	± 10 %		2,30	2,38	/	3,79	4,38	/	4,00	4,99	/	4,04	2,10	/
Cmk	± 10 %		2,30	1,77	/	2,70	4,01	/	3,75	4,62	/	3,36	1,75	/



Technical Data PTHH..

Technical Data PTHH..

Shut-off

Model No	Drive	Bolt Size	Torque				Speed		Weight		Side to Center	Tool Length	Air Consumption				Noise		Vibration		Hose Size
			Min	Max	Min	Max	Right	Left	Free Speed	Load			Free Speed	Load	Free Speed	Load	Free Speed	Load			
			Ft-Lbs	Ft-Lbs	Nm	Nm	1/min	1/min	lbs.	kg			mm	mm	ft3/min	ft3/min	m3/min	m3/min	dB(A)	dB(A)	
7PTHH352	1/4" Sq.	M5	3,0	5,2	4	7	3500	6000	1,74	0,79	21	168	3,53	7,06	0,1	0,2	<72	<75	<1	<1,5	3/8"
7PTHH35Q	1/4" Int. Hex	M5	3,0	5,2	4	7	3500	6000	1,74	0,79	21	173	3,53	7,06	0,1	0,2	<72	<75	<1	<1,5	3/8"
11PTHH352	1/4" Sq.	M6	4,4	5,2	6	7	3500	6500	1,81	0,82	21	168	3,53	7,06	0,1	0,2	<72	<75	<1	<2	3/8"
11TPHH35Q	1/4" Int. Hex	M6	4,4	8,1	6	11	3500	6500	1,87	0,85	21	173	3,53	7,06	0,1	0,2	<72	<75	<1	<2	3/8"
11PTHH353	3/8" Sq.	M6	4,4	8,1	6	11	3500	6500	1,83	0,83	21	173	3,53	7,06	0,1	0,2	<72	<75	<1	<2	3/8"
20PTHH40Q	1/4" Int. Hex	M7	7,4	14,8	10	20	4000	7500	1,92	0,87	21	173	3,53	8,83	0,1	0,25	<75	<75	<1	<2	3/8"
20PTHH403	3/8" Sq.	M7	7,4	14,8	10	20	4000	7500	1,90	0,86	21	173	3,53	8,83	0,1	0,25	<75	<75	<1	<2	3/8"
35PTHH40Q	1/4" Int. Hex	M8	14,8	25,8	20	35	4000	6500	2,31	1,05	24	179	5,30	15,89	0,15	0,45	<76	<78	<1	<3	3/8"
35PTHH403	3/8" Sq.	M8	14,8	25,8	20	35	4000	6500	2,31	1,05	24	179	5,30	15,89	0,15	0,45	<76	<78	<1	<3	3/8"
55PTHH403	3/8" Sq.	M10	22,1	40,6	30	55	4000	6000	2,54	1,15	24	189	5,30	15,89	0,15	0,45	<77	<79	<1	<4	3/8"
80PTHH35Q	7/16" Int. Hex	M12	36,9	59,0	50	80	3500	6000	3,20	1,45	28,5	192	7,06	19,42	0,2	0,55	<77	<79	<1	<4,5	3/8"
80PTHH354	1/2" Sq.	M12	36,9	59,0	50	80	3500	6000	3,09	1,4	28,5	190	7,06	19,42	0,2	0,55	<77	<79	<1	<4,5	3/8"
110PTHH30Q	7/16" Int. Hex	M12	55,3	81,1	75	110	3000	5500	3,75	1,7	28,5	210	7,06	19,42	0,2	0,55	<78	<80	<1	<5	1/2"
120PTHH304	1/2" Sq.	M12	55,3	88,5	75	120	3000	5500	3,75	1,7	28,5	208	7,06	19,42	0,2	0,55	<78	<80	<1	<5	1/2"

Technical Data PTHHA..

Technical Data PTHHA..																						Shut-off; Air on Top			
Model No	Drive	Bolt Size	Torque				Speed		Weight		Side to Center	Tool Length	Air Consumption				Noise		Vibration			Hose Size			
			Min	Max	Min	Max	Right	Left					Free Speed	Load	Free Speed	Load	Free Speed	Load	Free Speed	Load	Free Speed		Load	Load + Absorber	
			Ft-Lbs	Ft-Lbs	Nm	Nm	1/min	1/min	lbs.	kg	mm	mm	ft3/min	ft3/min	m3/min	m3/min	dB(A)	dB(A)	m/s2	m/s2	m/s2				
7PTHHA352	1/4" Sq.	M5	3,0	5,2	4	7	3500	6000	1,94	0,88	21	168	3,53	7,06	0,1	0,2	<72	<75	<1	<2	-	3/8"			
7PTHHA35Q	1/4" Int. Hex	M5	3,0	5,2	4	7	3500	6000	1,96	0,89	21	173	3,53	7,06	0,1	0,2	<72	<75	<1	<2	-	3/8"			
11PTHHA352	1/4" Sq.	M6	4,4	5,2	6	7	3500	6500	1,94	0,88	21	168	3,53	7,06	0,1	0,2	<72	<75	<1	<2	-	3/8"			
11TPHHA35Q	1/4" Int. Hex	M6	4,4	8,1	6	11	3500	6500	2,01	0,91	21	173	3,53	7,06	0,1	0,2	<72	<75	<1	<2	-	3/8"			
11PTHHA353	3/8" Sq.	M6	4,4	8,1	6	11	3500	6500	1,96	0,89	21	173	3,53	7,06	0,1	0,2	<72	<75	<1	<2	-	3/8"			
20PTHHA40Q	1/4" Int. Hex	M7	7,4	14,8	10	20	4000	7500	2,05	0,93	21	173	3,53	8,83	0,1	0,25	<75	<75	<1	<2,5	-	3/8"			
20PTHHA403	3/8" Sq.	M7	7,4	14,8	10	20	4000	7500	2,03	0,92	21	173	3,53	8,83	0,1	0,25	<75	<75	<1	<2,5	-	3/8"			
35PTHHA40Q	1/4" Int. Hex	M8	14,8	25,8	20	35	4000	6500	2,45	1,11	24	179	5,30	15,89	0,15	0,45	<76	<78	<1	<3,5	<2,5	3/8"			
35PTHHA403	3/8" Sq.	M8	14,8	25,8	20	35	4000	6500	2,45	1,11	24	179	5,30	15,89	0,15	0,45	<76	<78	<1	<3,5	<2,5	3/8"			
55PTHHA403	3/8" Sq.	M10	22,1	40,6	30	55	4000	6000	2,67	1,21	24	189	5,30	15,89	0,15	0,45	<77	<79	<1	<4,5	<2,5	3/8"			
80PTHHA35Q	7/16" Int. Hex	M12	36,9	59,0	50	80	3500	6000	3,33	1,51	28,5	192	7,06	19,42	0,2	0,55	<77	<79	<1	<5	<2,5	3/8"			
80PTHHA354	1/2" Sq.	M12	36,9	59,0	50	80	3500	6000	3,31	1,5	28,5	190	7,06	19,42	0,2	0,55	<77	<79	<1	<5	<2,5	3/8"			
110PTHHA30Q	7/16" Int. Hex	M12	55,3	81,1	75	110	3000	5500	3,86	1,75	28,5	210	7,06	19,42	0,2	0,55	<78	<80	<1	<5,5	<2,5	1/2"			
120PTHHA304	1/2" Sq.	M12	55,3	88,5	75	120	3000	5500	3,86	1,75	28,5	208	7,06	19,42	0,2	0,55	<78	<80	<1	<5,5	<2,5	1/2"			

Technical Data PHH..

Technical Data PHH..																			Non Shut-off	
Model No	Drive	Bolt Size	Torque				Speed	Weight		Side to Center	Tool Length	Air Consumption				Noise		Vibration		Hose Size
			Min	Max	Min	Max	Free Speed	lbs.	kg			Free Speed	Load	Free Speed	Load	Free Speed	Load	Free Speed	Load	
			Ft-Lbs	Ft-Lbs	Nm	Nm	1/min			mm	mm	ft3/min	ft3/min	m3/min	m3/min	dB(A)	dB(A)	m/s2	m/s2	-
7PHH602	1/4" Sq.	M5	3,0	5,2	4	7	6000	1,70	0,77	21	168	8,83	7,06	0,25	0,2	<74	<75	<1,6	<1,5	3/8"
7PHH60Q	1/4" Int. Hex	M5	3,0	5,2	4	7	6000	1,74	0,79	21	173	8,83	7,06	0,25	0,2	<74	<75	<1,6	<1,5	3/8"
11PHH652	1/4" Sq.	M6	4,4	5,2	6	7	6500	1,72	0,78	21	168	10,59	8,83	0,3	0,25	<75	<75	<1,7	<2	3/8"
11PHH65Q	1/4" Int. Hex	M6	4,4	8,1	6	11	6500	1,76	0,8	21	173	10,59	8,83	0,3	0,25	<75	<75	<1,7	<2	3/8"
11PHH653	3/8" Sq.	M6	4,4	8,1	6	11	6500	1,74	0,79	21	173	10,59	8,83	0,3	0,25	<75	<75	<1,7	<2	3/8"
20PHH75Q	1/4" Int. Hex	M7	7,4	14,8	10	20	7500	1,90	0,86	21	173	12,36	10,59	0,35	0,3	<76	<75	<1,8	<2	3/8"
20PHH753	3/8" Sq.	M7	7,4	14,8	10	20	7500	1,85	0,84	21	173	12,36	10,59	0,35	0,3	<76	<75	<1,8	<2	3/8"
35PHH65Q	1/4" Int. Hex	M8	14,8	25,8	20	35	6500	2,29	1,04	24	179	19,42	15,89	0,55	0,45	<79	<78	<1,8	<3	3/8"
35PHH653	3/8" Sq.	M8	14,8	25,8	20	35	6500	2,25	1,02	24	179	19,42	15,89	0,55	0,45	<79	<78	<1,8	<3	3/8"
55PHH603	3/8" Sq.	M10	22,1	40,6	30	55	6000	2,47	1,12	24	189	22,95	19,42	0,65	0,55	<80	<79	<1,8	<4	3/8"
80PHH60Q	7/16" Int. Hex	M12	36,9	59,0	50	80	6000	3,13	1,42	28,5	192	26,49	19,42	0,75	0,55	<80	<79	<2	<4,5	3/8"
80PHH604	1/2" Sq.	M12	36,9	59,0	50	80	6000	3,09	1,4	28,5	190	26,49	19,42	0,75	0,55	<80	<79	<2	<4,5	3/8"
110PHH55Q	7/16" Int. Hex	M12	55,3	81,1	75	110	5500	3,68	1,67	28,5	210	30,02	22,95	0,85	0,65	<80	<80	<2	<5	1/2"
120PHH554	1/2" Sq.	M12	55,3	88,5	75	120	5500	3,64	1,65	28,5	208	30,02	22,95	0,85	0,65	<80	<80	<2	<5	1/2"

Technical Data PHHA..

Technical Data PHHA..												Non Shut-off; Air on Top									
Model No	Drive	Bolt Size	Torque				Speed	Weight		Side to Center	Tool Length	Air Consumption				Noise		Vibration			Hose Size
			Min	Max	Min	Max	Free Speed					Free Speed	Load	Free Speed	Load	Free Speed	Load	Free Speed	Load	Free Speed	
			Ft-Lbs	Ft-Lbs	Nm	Nm	1/min	lbs.	kg	mm	mm	ft3/min	ft3/min	m3/min	m3/min	dB(A)	dB(A)	m/s2	m/s2	m/s2	
7PHHA602	1/4" Sq.	M5	3,0	5,2	4	7	3500	1,81	0,82	21	168	8,83	7,06	0,25	0,2	<74	<75	<1,6	<2	-	3/8"
7PHHA60Q	1/4" Int. Hex	M5	3,0	5,2	4	7	3500	1,85	0,84	21	173	8,83	7,06	0,25	0,2	<74	<75	<1,6	<2	-	3/8"
11PHHA652	1/4" Sq.	M6	4,4	5,2	6	7	3500	1,85	0,84	21	168	10,59	8,83	0,3	0,25	<75	<75	<1,7	<2	-	3/8"
11PHHA65Q	1/4" Int. Hex	M6	4,4	8,1	6	11	3500	1,96	0,89	21	173	10,59	8,83	0,3	0,25	<75	<75	<1,7	<2	-	3/8"
11PHHA653	3/8" Sq.	M6	4,4	8,1	6	11	3500	1,85	0,84	21	173	10,59	8,83	0,3	0,25	<75	<75	<1,7	<2	-	3/8"
20PHHA75Q	1/4" Int. Hex	M7	7,4	14,8	10	20	4000	2,03	0,92	21	173	12,36	10,59	0,35	0,3	<76	<75	<1,8	<2,5	-	3/8"
20PHHA753	3/8" Sq.	M7	7,4	14,8	10	20	4000	1,94	0,88	21	173	12,36	10,59	0,35	0,3	<76	<75	<1,8	<2,5	-	3/8"
35PHHA65Q	1/4" Int. Hex	M8	14,8	25,8	20	35	4000	2,43	1,1	24	179	19,42	15,89	0,55	0,45	<79	<78	<1,8	<3,5	<2,5	3/8"
35PHHA653	3/8" Sq.	M8	14,8	25,8	20	35	4000	2,36	1,07	24	179	19,42	15,89	0,55	0,45	<79	<78	<1,8	<3,5	<2,5	3/8"
55PHHA603	3/8" Sq.	M10	22,1	40,6	30	55	4000	2,58	1,17	24	189	22,95	19,42	0,65	0,55	<80	<79	<1,8	<4,5	<2,5	3/8"
80PHHA60Q	7/16" Int. Hex	M12	36,9	59,0	50	80	3500	3,24	1,47	28,5	192	26,49	19,42	0,75	0,55	<80	<79	<2	<5	<2,5	3/8"
80PHHA604	1/2" Sq.	M12	36,9	59,0	50	80	3500	3,20	1,45	28,5	190	26,49	19,42	0,75	0,55	<80	<79	<2	<5	<2,5	3/8"
110PHHA55Q	7/16" Int. Hex	M12	55,3	81,1	75	110	3000	3,79	1,72	28,5	210	30,02	22,95	0,85	0,65	<80	<80	<2	<5,5	<2,5	1/2"
120PHHA554	1/2" Sq.	M12	55,3	88,5	75	120	3000	3,75	1,7	28,5	208	30,02	22,95	0,85	0,65	<80	<80	<2	<5,5	<2,5	1/2"



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